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A Portfolio of High Value, Easy to Implements Solutions

Topics

- Executive Summary
- Appendix- Solution Overview
- Appendix - Market Positioning
- Appendix - Value to Partners, Distributors, SIs & Customers
- Solution and Commercial Update: WIN-911 and XLReporter

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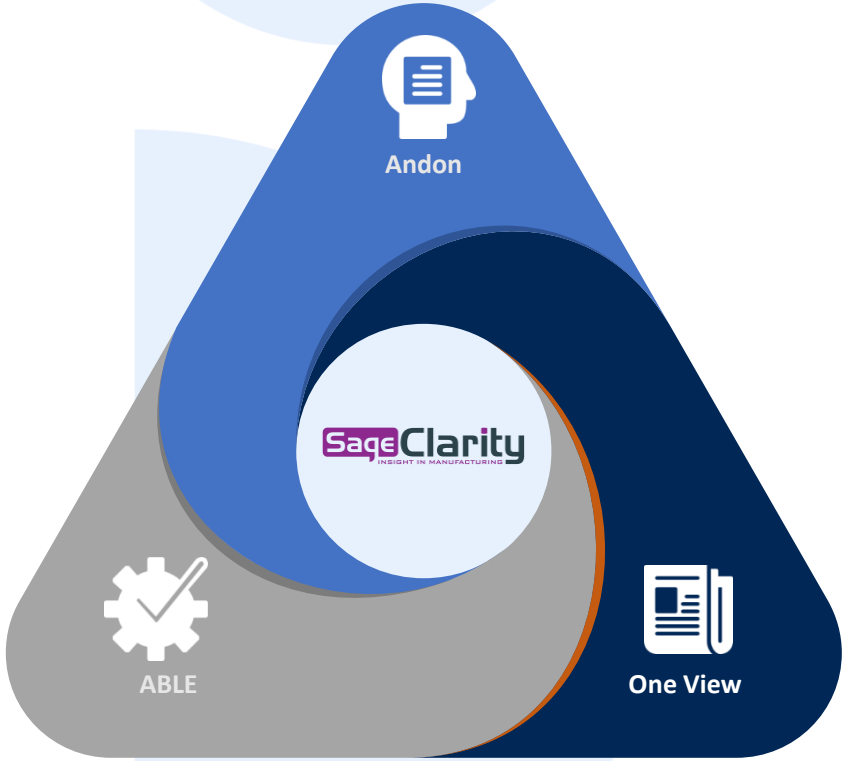
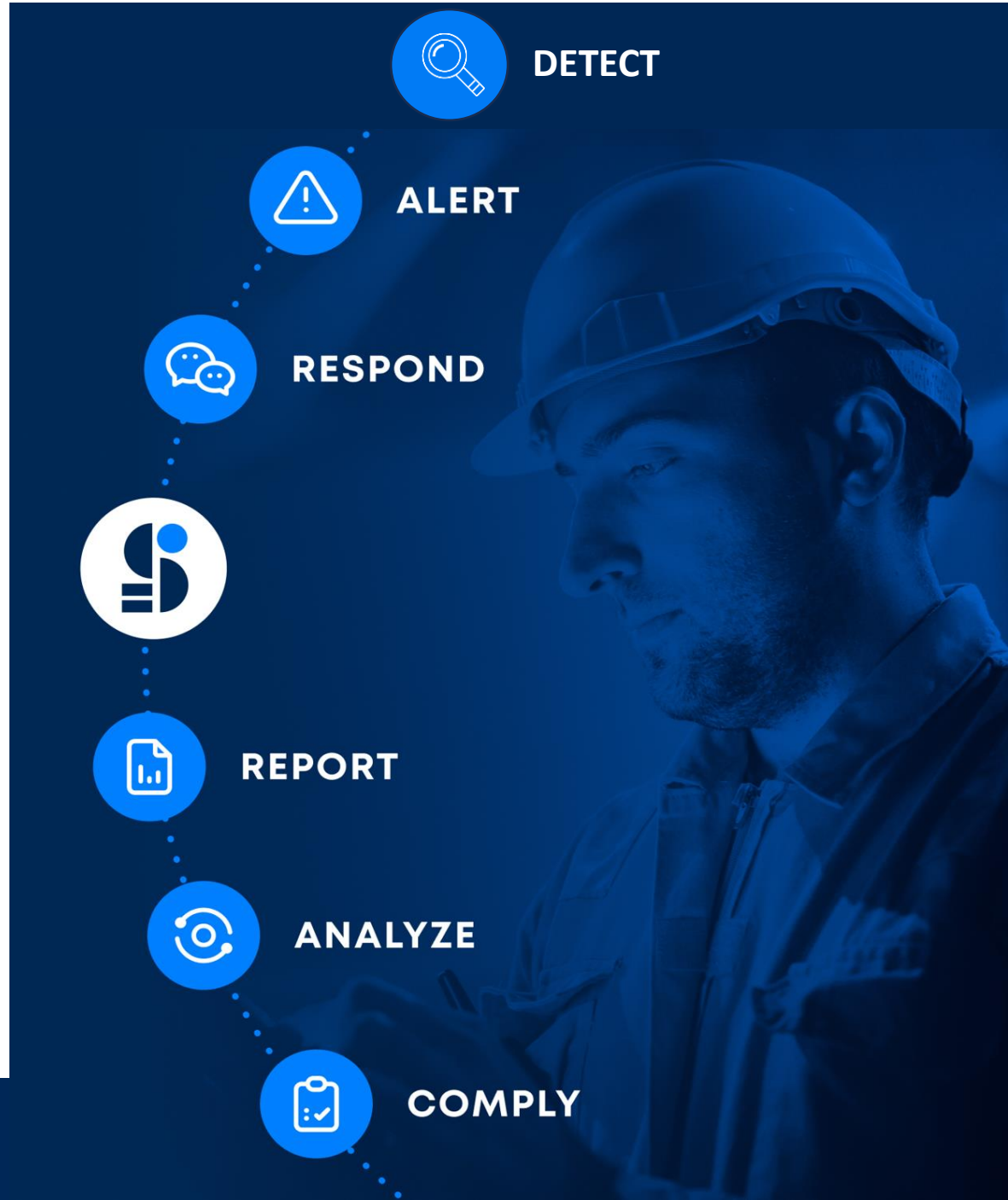
Sage Clarity Industry 4.0 Accelerator Apps now part of a broader Smartsights vision…





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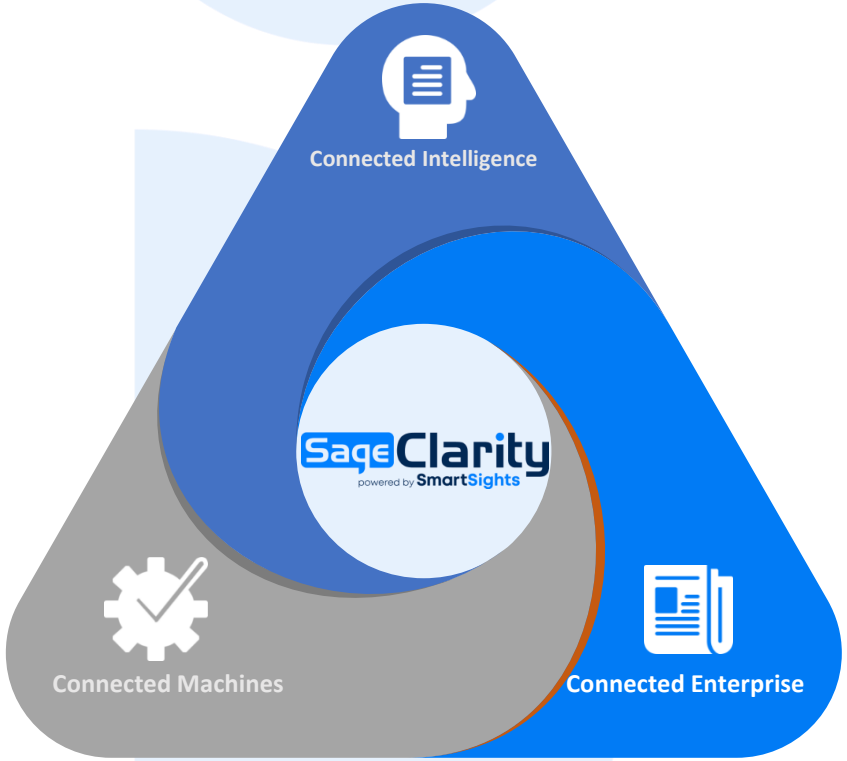
Industry 4.0 Accelerator Apps for Digital Transformations



01

PEER - Next-Gen ANDON – Issue Management accelerator

Intelligent alarms, alerts, and engineer-to-operator collaboration in real-time

02

One View – Analytics accelerator for production intelligence

Manufacturing Intelligence on the Cloud

03

ABLE – Data collection accelerator with logic at the edge

Machine Monitoring and beyond

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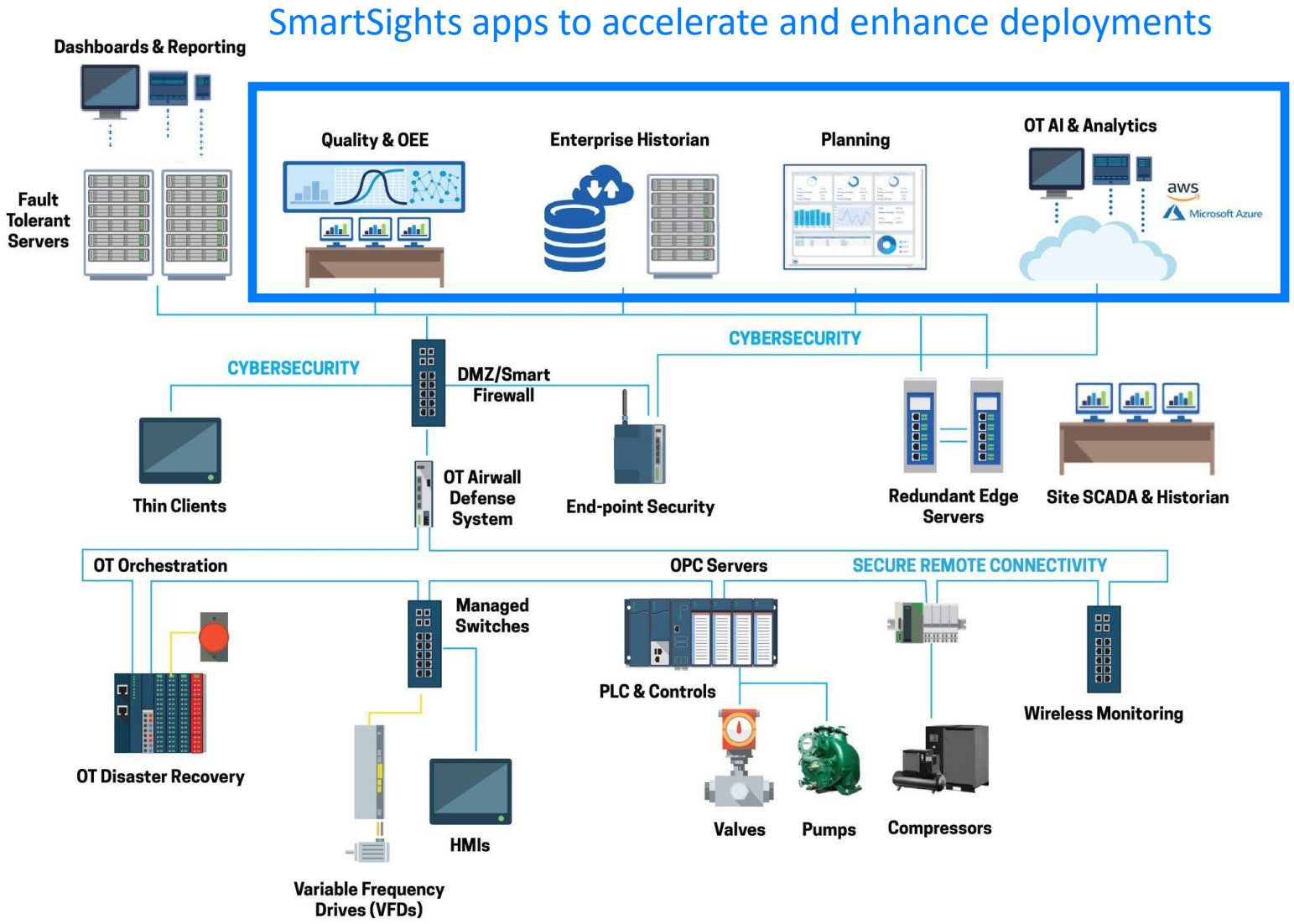
Supporting CB Pacific with Accelerator apps



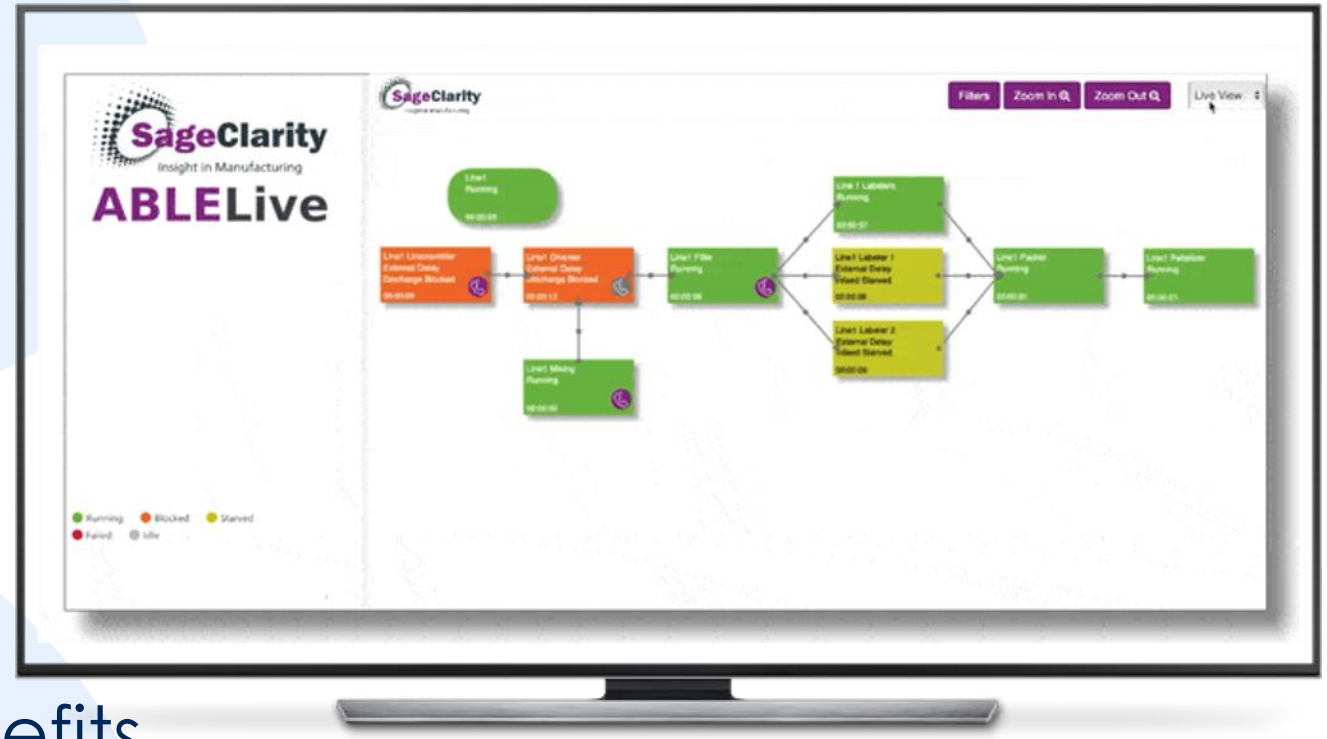
Clients Around the World: Food & Beverage Clients

Consumer Packaged Goods

Aerospace and Automotive

Pharma and Medical Device

ABLE ™
Data Collection Accelerator with Logic at the Edge



Key Capabilities & Benefits

- Modular modeling of machine centers, each with advanced logic engine to determine state
- Models line flow for intelligent root cause analysis
- Supports a corporate PLC standardization strategy
- Simplifies data acquisition & control architectures
- Enterprise configurations that can be copied from line to line and plant to plant
- Improves Fidelity of data by 5X
- Reduces integration costs up to 70%

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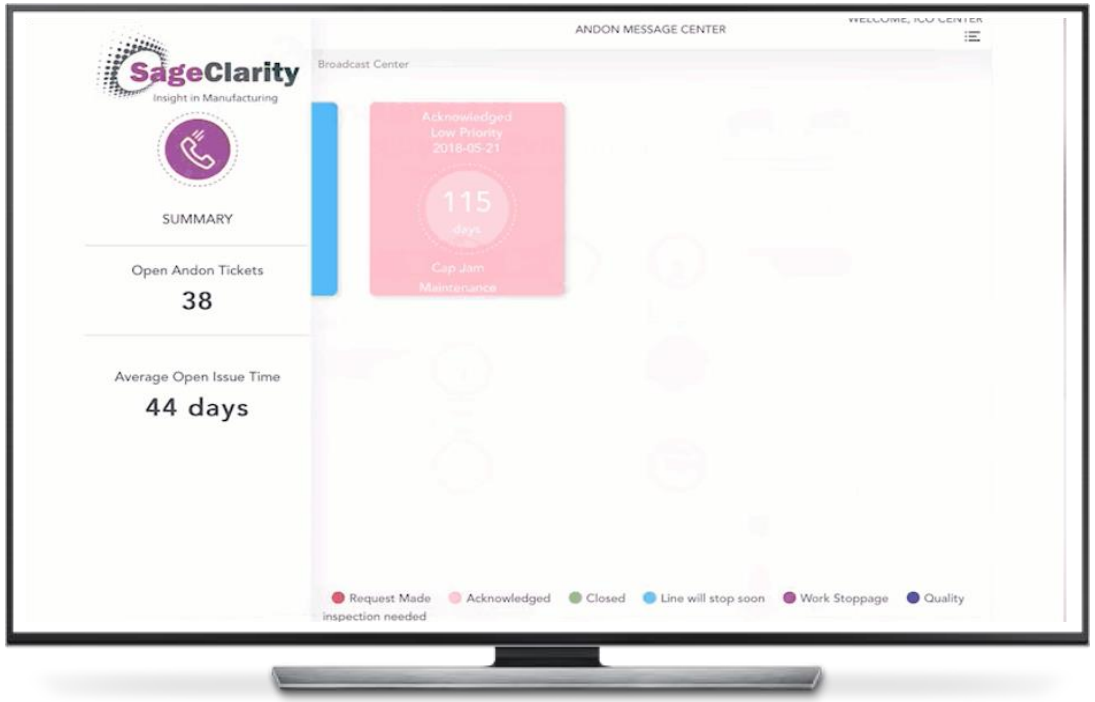
PEER™ Issue resolution Accelerator



- Capture issues and set priorities
- Trigger alerts for responsive action
- Create follow up with accountability and workflow to insure resolution
- Connect issues with systems
- Build a knowledge base of corrective actions
- Tightly integrated with Win911

A powerful API library for a variety of systems

- ERP systems
- MES systems
- SCADA systems
- Maintenance & Quality systems
- Panel views, HMIs, etc.

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One View ™ Analytics Accelerator for Production Intelligence

- Key Capabilities
  - Enterprise roll up across sites
  - Drill down by plant / line
  - YTD, MTD, WTD reporting
  - “Mobile First” design
  - Metric apps for OEE, OTIF, Quality, etc.

- Fills the mobile strategy for manufacturing companies
- Can be configured as a Single app or as multiple apps
- Can be used to bring real-time visibility to key manufacturing metric

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Quick Facts – Deployment Success

7,000,000 TRANSACTIONS PER DAY

OVER 1,000 PRODUCTION LINES

MULTIPLE ENTERPRISE DIGITAL TRANSFORMATION DEPLOYMENTS

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Appendix – Solution Overview

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ABLE IOT - Supercharge MES Deployments with Intelligent Root Cause Analysis

01 **Machine States/Faults**

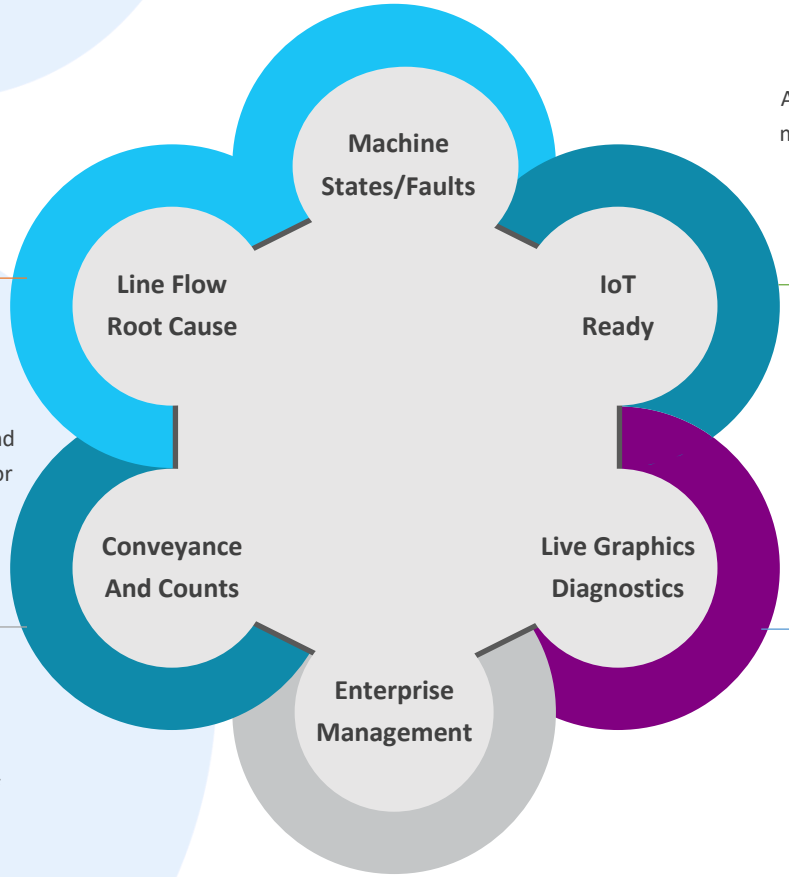
ABLE Models the machine states such as blocked, starved, faulted, etc. and specific faults.

02 **Line Flow/Root Cause**

ABLE Models the flow of the line and how machines impact each other for overall root cause analysis.

03 **Conveyance and Counts**

ABLE Monitors counts in and out of zones calculating population and losses.



04

ABLE Configurations are managed in multi-tenant site for enterprise level management and control.

05 **Live Graphics and Diagnostics**

Live Graphics and diagnostics for mobile or browsers aid data validation and accessibility.

06 **IoT Ready**

A cloud based IOT utility that simplifies control architectures. Featured in Pro Food World Magazine.

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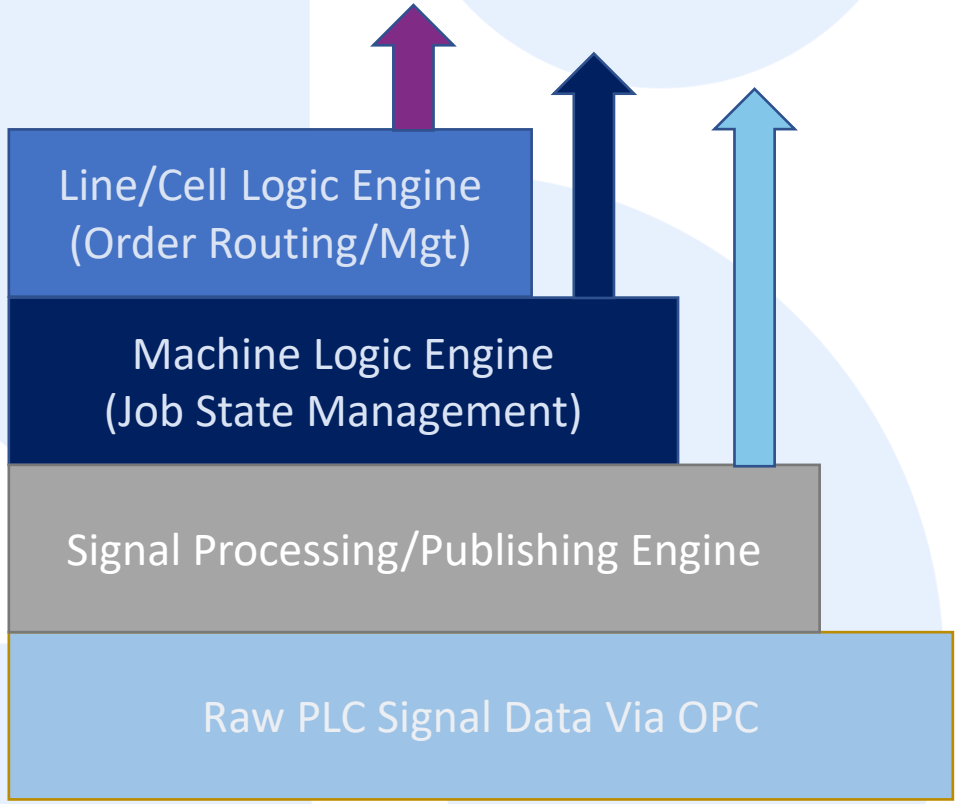
ABLE Is… Optimized Data From the Edge



Logic engine for line/process flows to model cause-effect relationships between machines, plan downtime mgt.

Logic engine for machines, unit operations to coalesce state, internal/external delays, faults, counts.

Real-time signal conditioning and integrity checking with pre-processors for arrays, analog signals, instruments.

High speed data acquisition of raw signals including counts, interlocks, faults and other pertinent tags.

ABLE Digital Twin™
Digital Replay for data validation

- Ability to create Digital Twins from real-time manufacturing data
- Fast forward / rewind / pause through production sequences
- Multiple data streams replayed in sync
- Use for production line modeling with more accurate representations of performance
- Diagnose problems. “The Filler crashed last night…There is glass everywhere”. What led to the crash?

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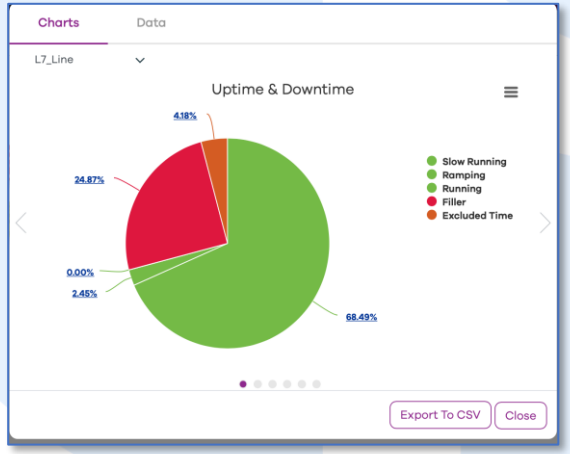
ABLE – Fault Learning to reduce engineering configuration time

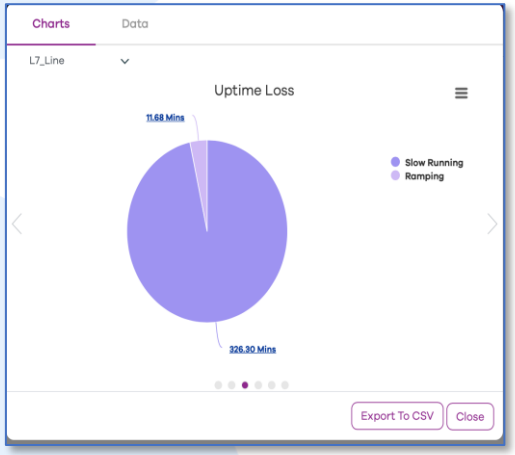
			Total		Percent	
Asset	FaultMsgId	FaultMessage	Count	Mins	Count	Mins
Operation1	1234	Area-clear monitoring device has tripped	54	95.3	39%	22%
Operation1	1225	Machine stop tripped	23	74.1	17%	17%
Operation1	1345	Product incorrectly positioned	14	43.1	10%	10%
Operation1	2543	Container discharge table not clear	12	147.3	9%	34%
Operation1	1543	Stop switch activated	4	14.4	3%	3%
Operation1	444	24V circuit breaker has been tripped	3	1.2	2%	0%
Operation1	1522	Movement monitoring malfunction	1	4.4	1%	1%
Operation1	1977	Malfunction P.E. sensors upper unit	1	1.3	1%	0%

Recap: Features

- When Fault Learning is enabled, faults are learned as machine centers generate them
- Learned faults are then ranked according to count frequency and accumulated downtime
- Learned faults are dynamically added to the system for an active measure of capturing new faults

ABLE for Speed Loss Signal Processing and Data Transformation



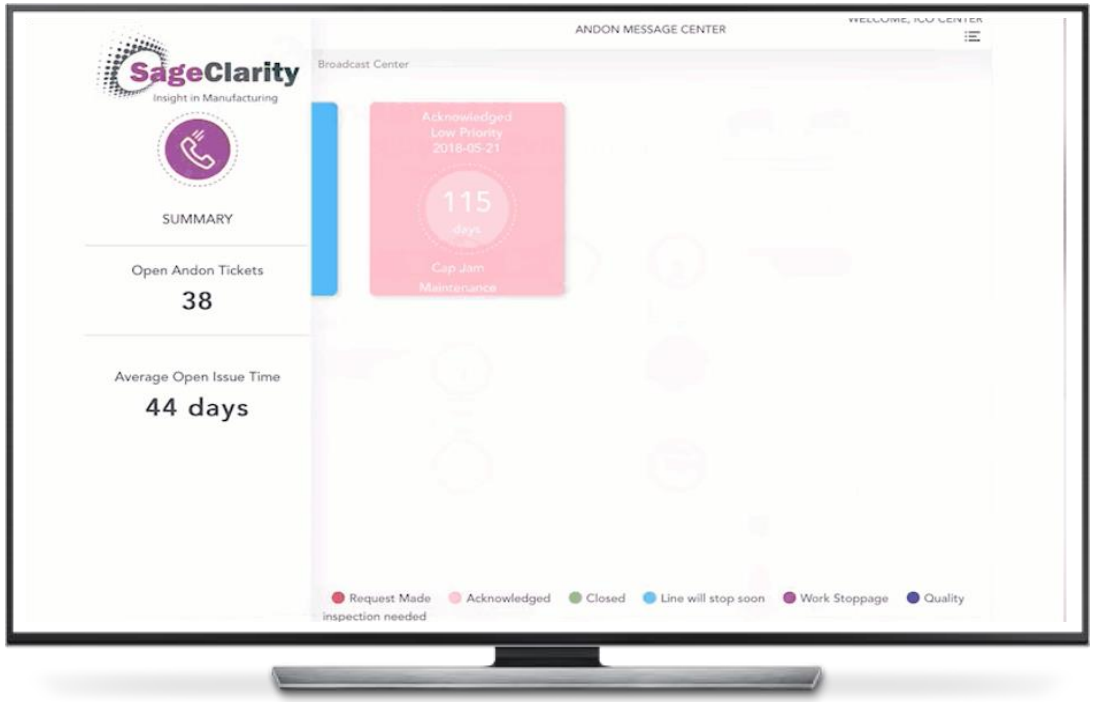


10/08/2021 11:07:26 AM	00:00:24	Failed 2000	Filler
10/08/2021 11:06:41 AM	00:00:44	Failed 2005	Filler Micro Stop
10/08/2021 11:05:35 AM	00:01:05	Running 4	Slow Running Operator Set
10/08/2021 11:05:10 AM	00:00:24	Failed 2005	Filler Micro Stop
10/08/2021 11:02:17 AM	00:02:53	Running 4	Slow Running Operator Set
10/08/2021 11:01:38 AM	00:00:38	Failed 2005	Filler Micro Stop
10/08/2021 10:55:24 AM	00:06:14	Running 4	Slow Running Operator Set

Recap: Key Features

- ABLE has the capability of tracking speed loss scenarios and providing a heatmap of machine production rates by work center
- In ABLE, FactoryView, the Uptime/Downtime Analytic is modified to display Uptime losses in green segments – A new Uptime Loss analytic breaks down the loss categories
- The event records are also tagged appropriately with the Uptime Loss categories

PEER™ Issue Management Accelerator



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A powerful API library for a variety of systems

- ERP systems
- MES systems
- Maintenance & Quality systems
- Panel views, HMIs, etc.

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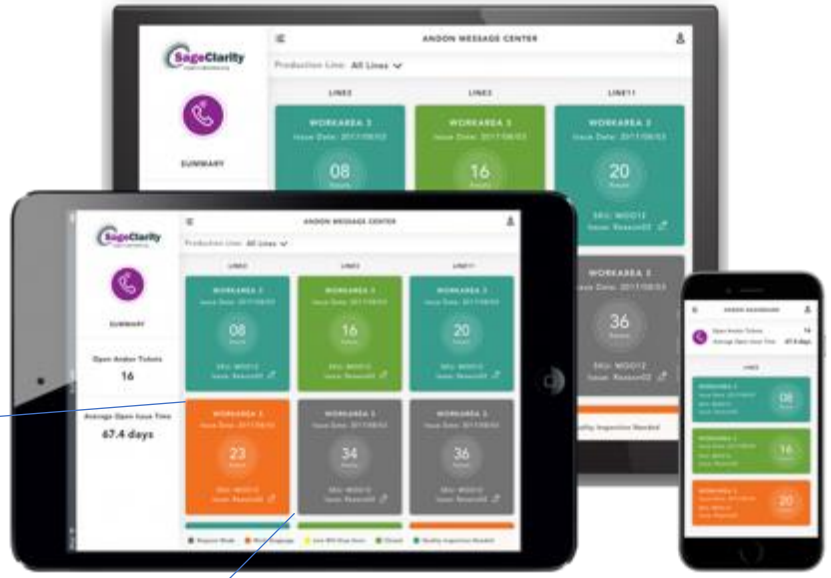
The Peer Message Center: Open close/update tickets

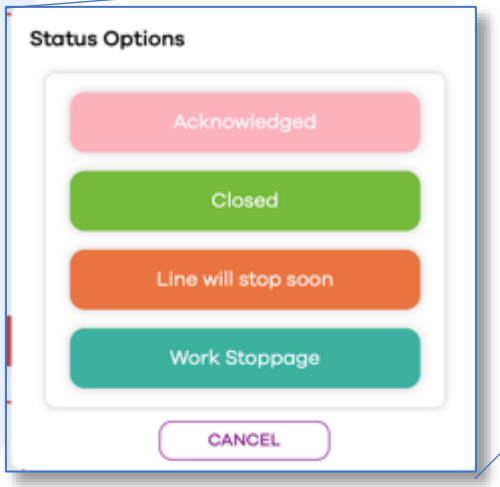
Features:

Tickets can be created and updated on:

- ✓ desktop PCs,
- ✓ Tablets,
- ✓ Smart phones

Large buttons, and Sage Clarity's "quick Click" functionality make it easy to initiate PEER Tickets with gloves.





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The Peer Broadcast Center: the Visual Factory for Control Rooms

Features:

1. Distribute status on overhead TVs

2. Provide real-time responsiveness to issues

3. Configured to display for a single line, multiples or an area.

PEER Andon Reporting Center – native reporting for issue management

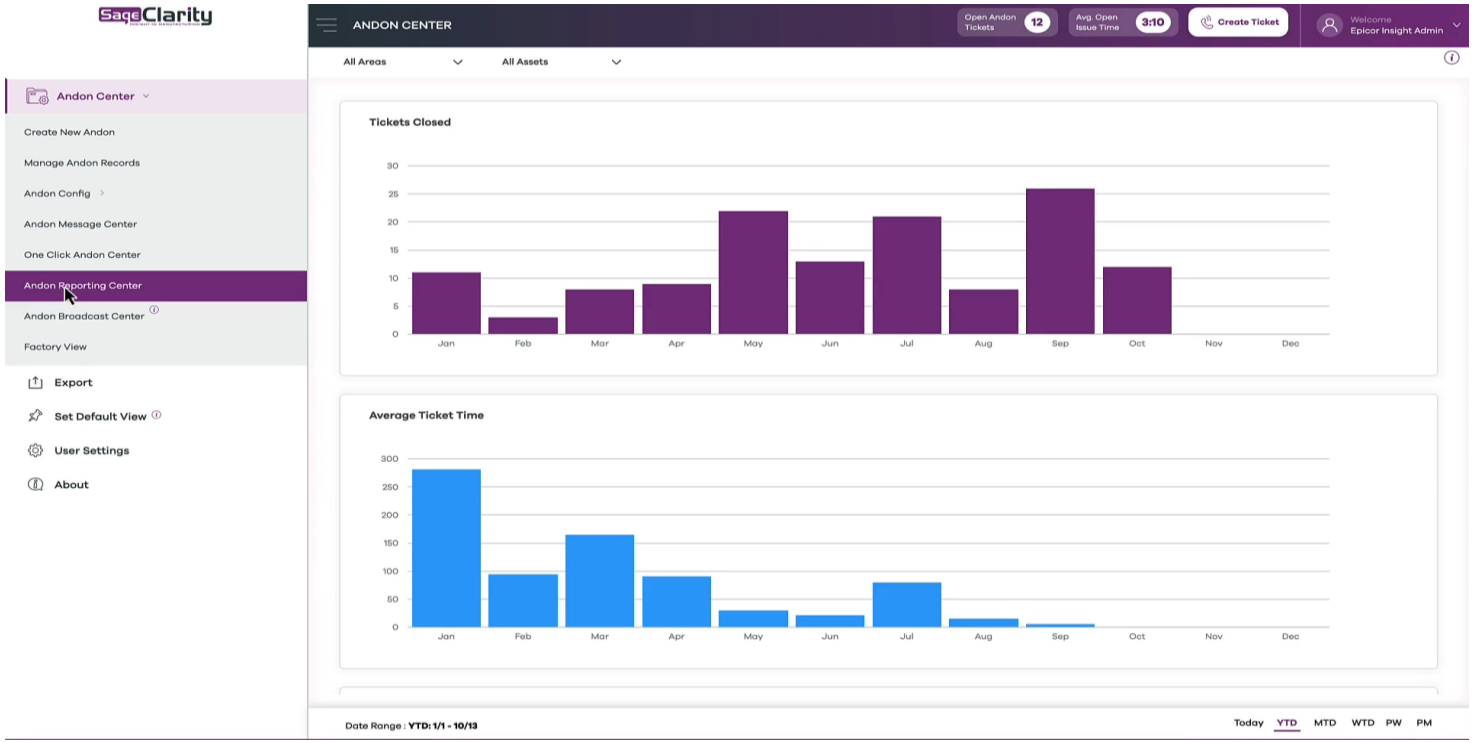
1. ‘Out of the Box’ analytics:

- PEER Andon tickets by line
- PEER Andon tickets by status
- Takt time analysis
- Production Trends

2. Fixed Date Range Selections (YTD, MTD, WTD, TODAY, Prev. Week, Prev. Month)

3. Reporting center is web-based, and can be used on desktop / laptops, tablets, & smartphones.

4. Data can be exported to Excel



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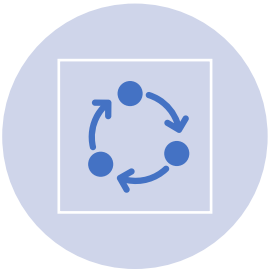
Seamless WIN911 / PEER Integration

WIN911 INITIATES ALARM NOTIFICATIONS

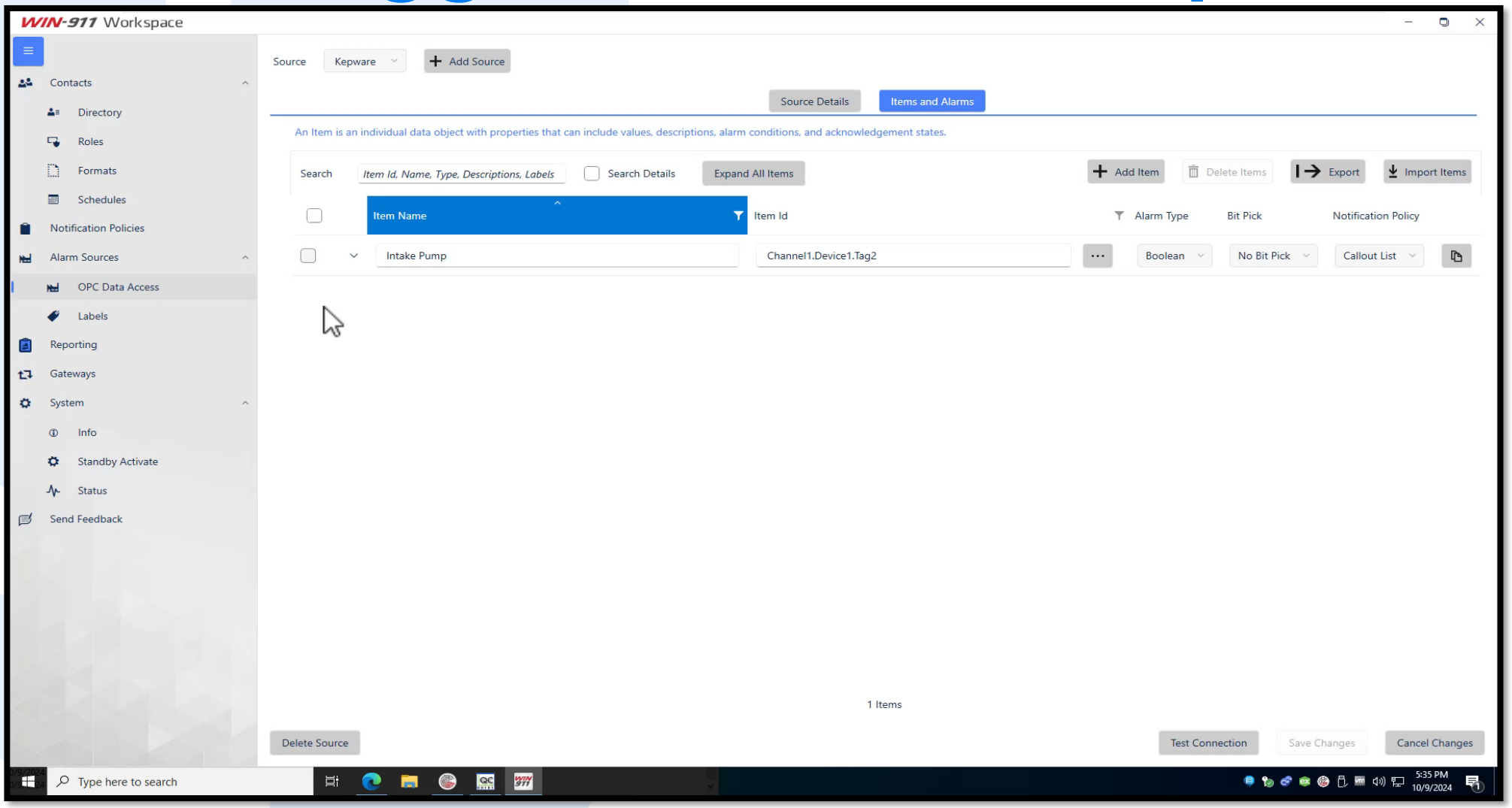
WIN911 THEN PASSES THE ALARM INFORMATION TO PEER AND ESCALATES IF NEEDED

PEER THEN FOLLOWS UP WITH ISSUE RESOLUTION FROM THE NOTIFICATION.



THIS CREATES A CLOSED LOOP PROCESS FOR ALARMS AND ACTIONS TAKEN

WIN-911 Triggers a Call for Help to PEER



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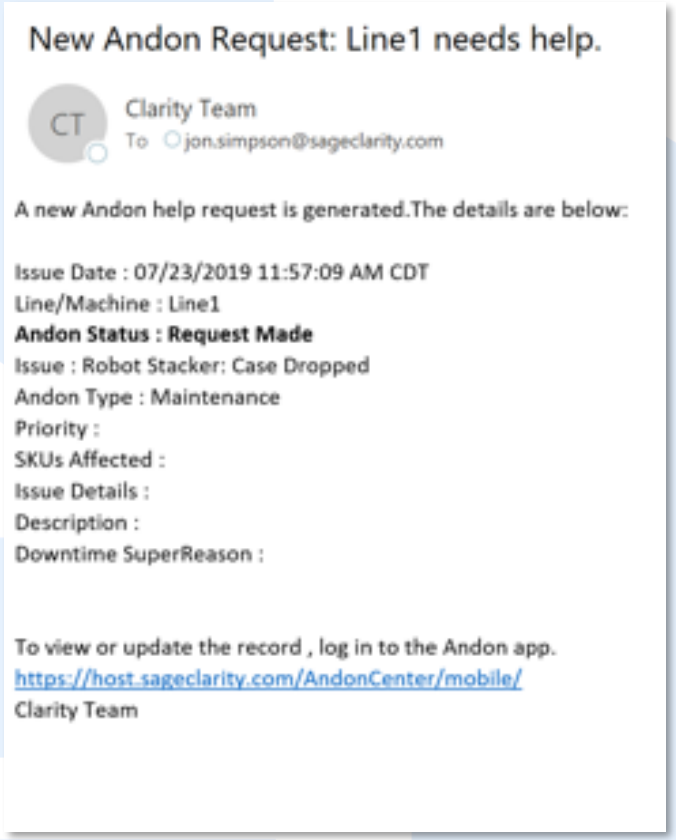
Smart Alerts: Automatic escalation of notifications

Customize notification settings based on the parameters that you need to track

- Notification group(s) are alerted on initial call for help and andon status changes
- Visual alert seen on monitors and email / text notifications sent out to key people
- Further escalation can be automatically triggered on alert type and parameters



New Andon Request: Line1 needs help.

CT Clarity Team
To jon.simpson@sageclarity.com

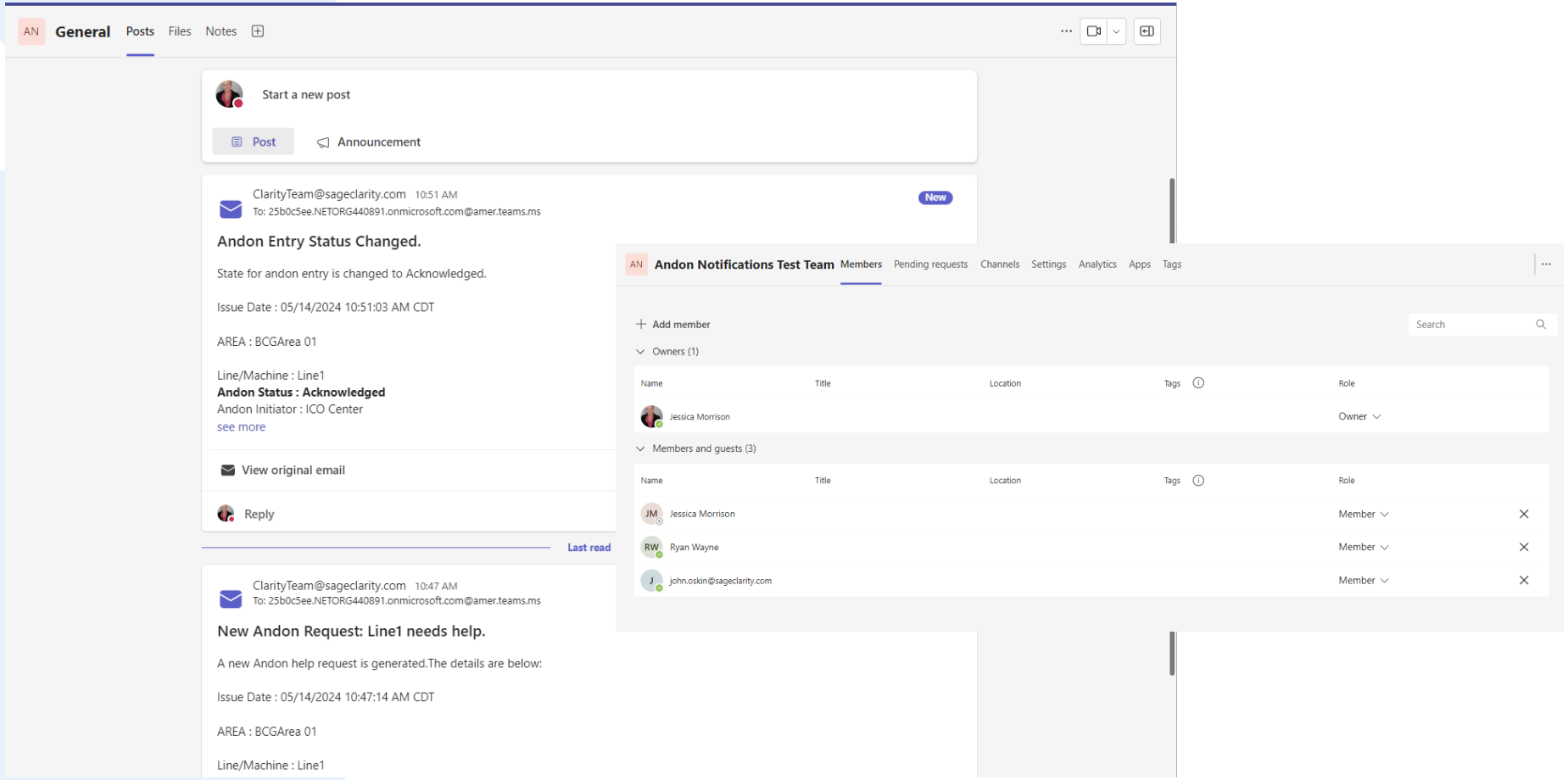
A new Andon help request is generated.The details are below:

Issue Date : 07/23/2019 11:57:09 AM CDT
Line/Machine : Line1
Andon Status : Request Made
Issue : Robot Stacker: Case Dropped
Andon Type : Maintenance
Priority :
SKUs Affected :
Issue Details :
Description :
Downtime SuperReason :

To view or update the record , log in to the Andon app.
https://host.sageclarity.com/AndonCenter/mobile/
Clarity Team

Alert Type	Parameter	Notification Group
Initial andon incident	**When ticket is created**	**Maintenance, Quality, Supervisor, etc.**
Andon reminder	**Alert after 15 minutes without acknowledgement**	**Maintenance, Supervisor, Quality, etc.**
Andon escalation	**Alert after 1 hour still open**	**Supervisor, Manager, etc.**
Incident updates	**Alert on state change**	**Supervisor, Manager, etc.**
Resolution escalation	**2 days without resolution**	**Plant Manager**

Creating a Teams Channel for Notifications



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One View ™ Analytics Accelerator for Production Intelligence

- Key Capabilities
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  - Drill down by plant / line
  - YTD, MTD, WTD reporting
  - “Mobile First” design
  - Metric apps for OEE, OTIF, Quality, etc.

- Fills the mobile strategy for manufacturing companies
- Can be configured as a Single app or as multiple apps
- Can be used to bring real-time visibility to key manufacturing metric

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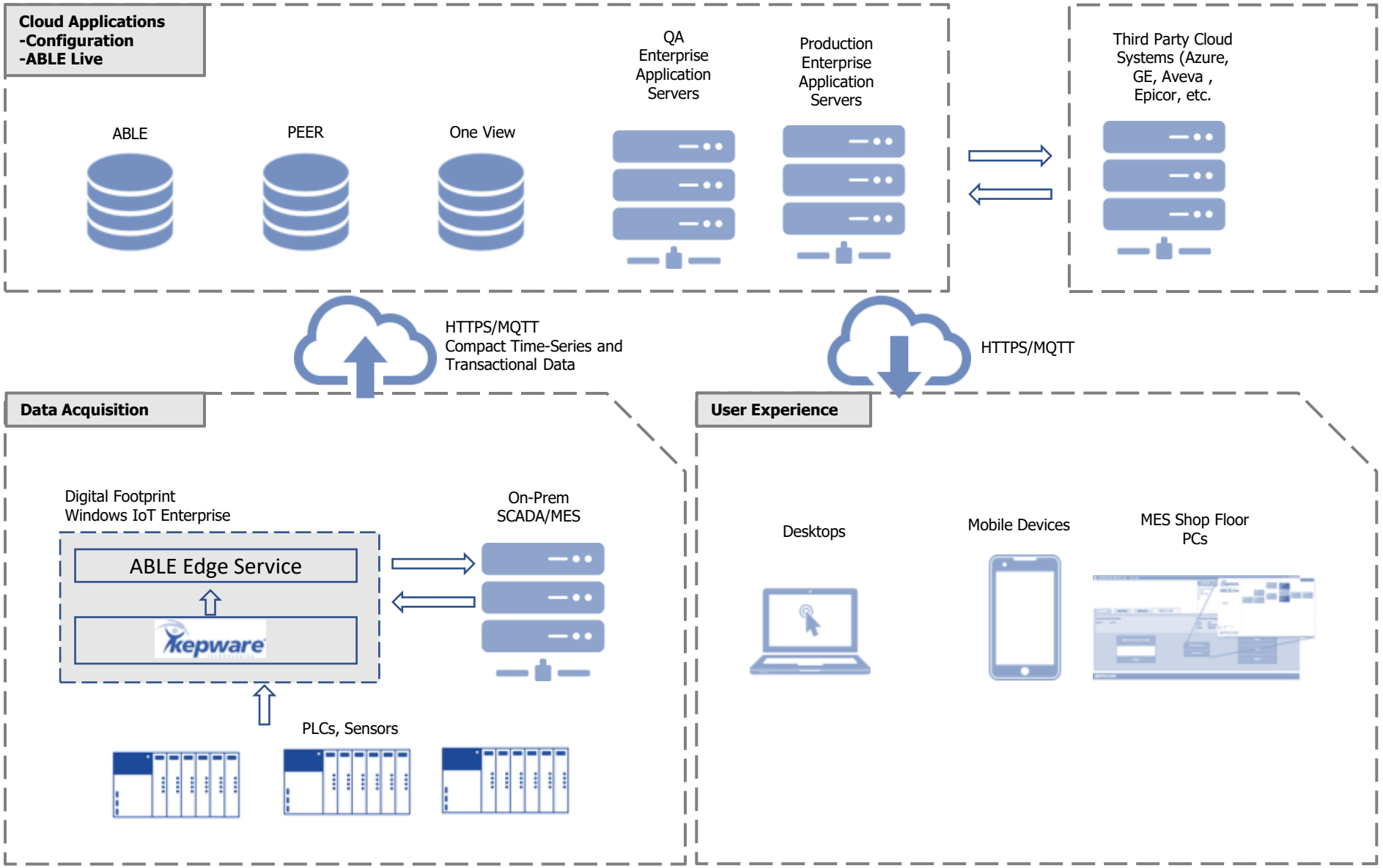
Contemporary IOT Cloud Architecture
Can be Delivered in the Cloud or On-premise



Appendix – Market Positioning

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Where to Position ABLE…

- In sales proposals for MES and OEE projects
  - Competitive advantage with advanced data collection
  - No PLC programming to reduce cost
  - Faster data validation
- In completed MES and OEE projects
  - Enhance with Next Gen advanced data collection at the unit op level
- In new opportunities that may not be ready for MES
  - Quick start data collection for immediate value
  - Primer for MES justifications leveraging data collected coupled with some of out benchmark stats
- In active MES/OEE service engagements
  - Advanced data collection without PLC programming
  - No need for a data concentrator
  - Remote Data validation tools
- **The Impact: 5-10% OEE uplift, 70% reduction in engineering time, 5X improvement in data fidelity**

Where to Position PEER…

- Any win911 accounts as an upgrade and need for Issue Management
- Accounts where “call for help” functionality can be beneficial
  - Machine based “calls for help”
  - Operator based “calls for help”
- Closed loop integration with CMMS systems
  - Think beyond maintenance work orders…Safety, quality, material issues, etc.
  - Capture the “holistic” event, from cradle to grave
- **The Impact: Significant improvement in Response and Resolutions times**

Large Enterprise/Multi-Site Strategy

- Large Enterprise customers typically looking at broader initiatives where performance is a key pillar. More competitive.
- Key Selling Points
  - Compress multi-year deployments to a single year or less
  - Reduce engineering cost by 70%, overall cost by 30-40%
  - Reduce infrastructure using digital devices vs. site servers
  - Better consistency, data fidelity, and support
  - Value-added features; data validation UI, Digital Twin, Machine Learning

SME/Plant Level Strategy

- SME's typically want turnkey solution with clear alignment to productivity improvement goals. Tangibility is critical.
- Primary Verticals are Food, Beverage, CPG/FMCG
  - Any customer with connected lines is the "sweet spot"
  - By no means limited, anyone with equipment is potential
- Key Selling points
  - Easy to get started
  - Cloud deployment for active release management
  - Reduce the dependence on IS team for support
  - Empower MES customers with seamless and successful delivery

Accelerator Apps Overview

Product	Standard Pricing	Overview
ABLE	▪ Subscription based ▪ $500 per asset per year	▪ ABLE™ edge computing analyzes data from the production line and delivers root-cause analysis when issues arise, and can even predict upcoming production issues ▪ ABLE integrates IoT edge data into business systems—MES, SCADA, and ERPs ▪ Production line modeling finds the root cause of downtime, streamlining the process to get the line running again ▪ Rapid implementation timeline – 5 days or less in the U.S.
PEER	▪ Subscription based ▪ Base Andon - $10,000 per year / site ▪ Andon IOT - $150 per year per IOT connection	▪ Role-based alarms notify the right person at the right time based on alarm type and location ▪ Integrate with existing Andon lights system ▪ Integrate with MES or ERP systems ▪ Digital alerts on operator HMIs and factory floor displays ▪ Built-in reporting to track alerts over time and response time ▪ Integrate machine related and non machine related issues
One View	▪ Subscription based ▪ $5,000 per year per site	▪ One View's sophisticated shallow-dive analytics offers organizations immediate access to relevant KPIs ▪ Designed to be complimentary to BI systems providing monthly reporting, One View delivers real time and quickly understood metrics for the present moment ▪ Through multiple metrics-based apps, team members can review and collaborate around KPIs and perform their own cause/effect analysis

Customer Scope and Impact

	Situation	Scope	Impact
CONAGRA BRANDS	▪ Seeking advanced data collection to provide a digital platform for the company's "Digital Factory" initiative while eliminating the need for PLC programming	▪ Broad Adoption of Sage Clarity's ABLE technology ▪ 20+ plants, 200+ production lines	▪ 12 plant rollout achieved in < 12 months ▪ $40 million savings glide path
Tito's Handmade Vodka	▪ Looking for rapid deployment on a new bottling hall with a turnkey solution	▪ Implemented in less than 3 weeks. Drove adoption of additional MES modules from our partner vendor on the project	▪ Successful deployment with 7X data collection from original design ▪ Identified previously unidentified line imbalances
CLOROX	▪ Seeking rapid deployment platform for advanced machine data capture as part of broad MES deployment	▪ Implemented as part of MES Connectivity project	▪ Critical Industry demand met on new product launch, in record time, rollout in process
DIAGEO	▪ Looking for intelligent root cause analysis for lines that have plateaued in performance	▪ Implemented in (4) plants in North America	▪ 20% improvement in data fidelity ▪ 50% reduction in integration costs
Henkel	▪ Seeking data integration of SAP with plant MES system along with new data capture requirements in their process area	▪ Installed on 60 batch tanks ▪ Included SAP integration of key batch tank data	▪ Cutting edge analytics developed for batch processing
Walmart	▪ Required quick deployment of advanced data collection unavailable in SAP solution	▪ Installed in largest dairy plant in North America ▪ Deployed in less than 6 weeks plant wide ▪ Intelligent root cause analysis adopted	▪ 20% improvement in changeover time ▪ 10% lift in OEE

Appendix - Value to Partners, Distributors, SIs & Customers

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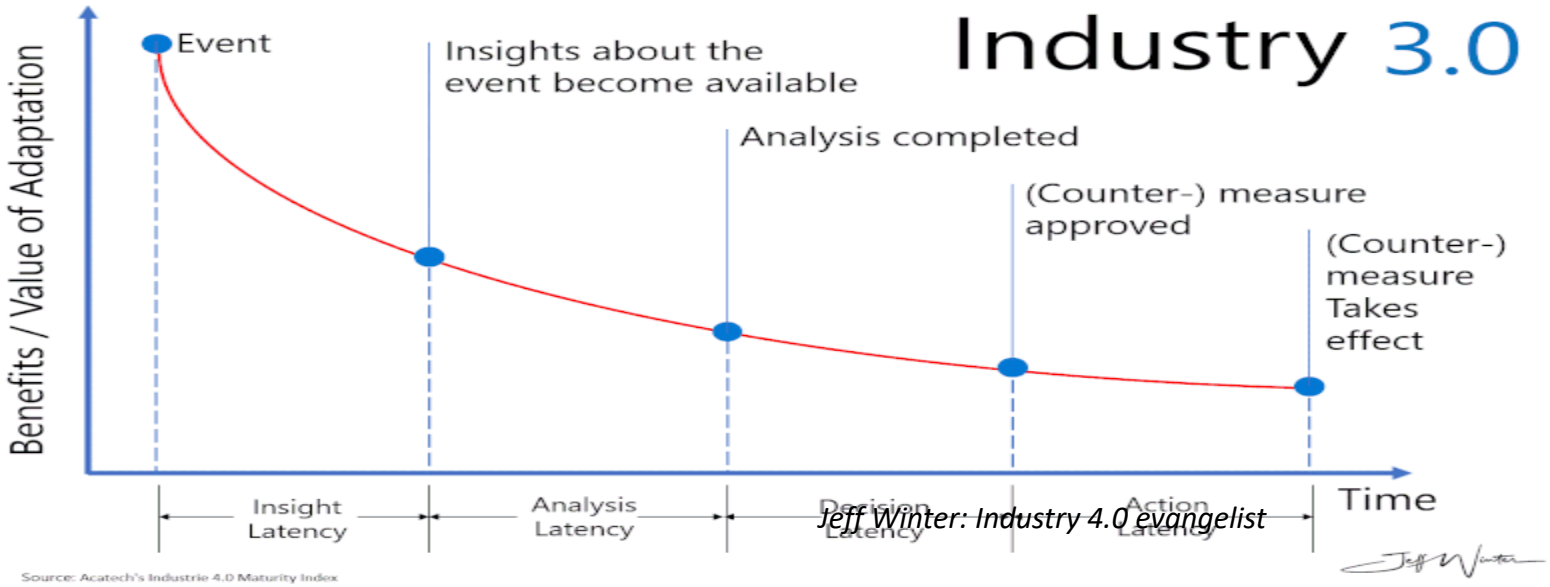
Time compression matters…Accelerator apps can provide faster adoption for Digitial Transformation Initiatives

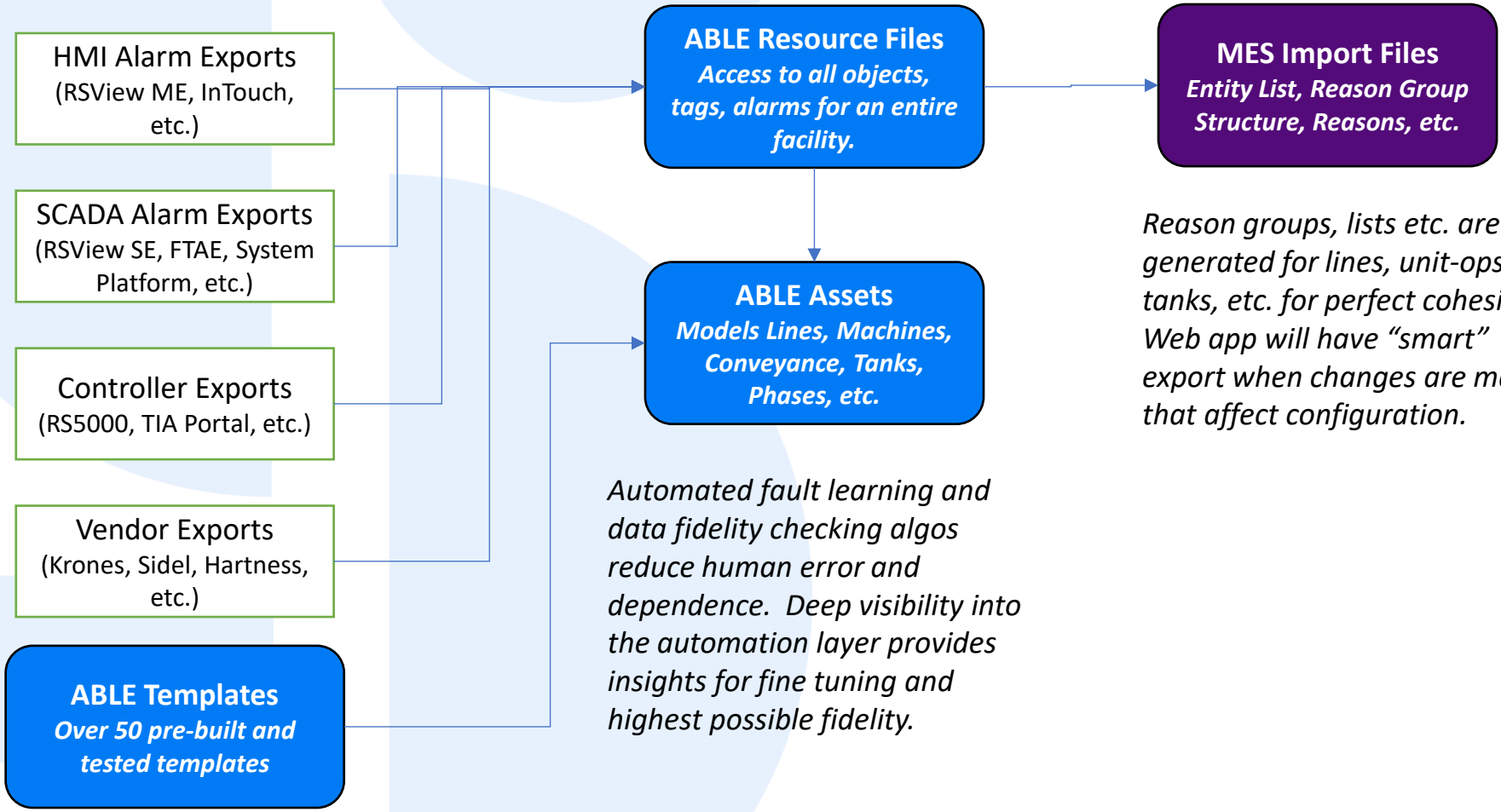


- ✓ 76% of manufacturing executives in Deloitte's post election poll intend to increase investments into digital initiatives and Industry 4.0 technologies
- ✓ Industrial leaders are competing to be at the forefront of Industry 4.0
- ✓ This creates immediate opportunity to embed in customer architectures to lock in long-term recurring revenue
- ✓ Ability to offer a full suite Industry 4.0 solution is best way to capture this opportunity – Sage Clarity is a key piece

Our Key Accelerators

- Templates
  - Pre-engineered models for over 60 machine types and growing
  - Pre-engineered loss structure, categories, util states to meet different MES/ERP enterprise models and integration requirements.
- Automated Imports
  - Imports from HMI's and Controllers provide comprehensive landscape of automation footprint including every identifiable fault in the site.
- Fault Learning
  - Monitors thousands of potential faults per operation, often over 100,000 in a given site.
  - Recurring faults are identified and quickly mapped to new downtime reasons.

Consistent and Highly Automated Process



Automated fault learning and data fidelity checking algos reduce human error and dependence. Deep visibility into the automation layer provides insights for fine tuning and highest possible fidelity.

Reason groups, lists etc. are generated for lines, unit-ops, tanks, etc. for perfect cohesion. Web app will have "smart" export when changes are made that affect configuration.

SmartSights Accelerators for Digital Transformation Initiatives

70% REDUCTION IN ENGINEERING TIME

5X IMPROVEMENT IN DATA FIDELITY

SPEED TO VALUE 4 – 6 WEEK REDUCTION (PER SITE)

ENHANCED FUNCTIONALITY

EXPANDING THE DIGITAL FOOTPRINT

WIN-911 and XLReporter Update

Extend Alarms with Notificatons

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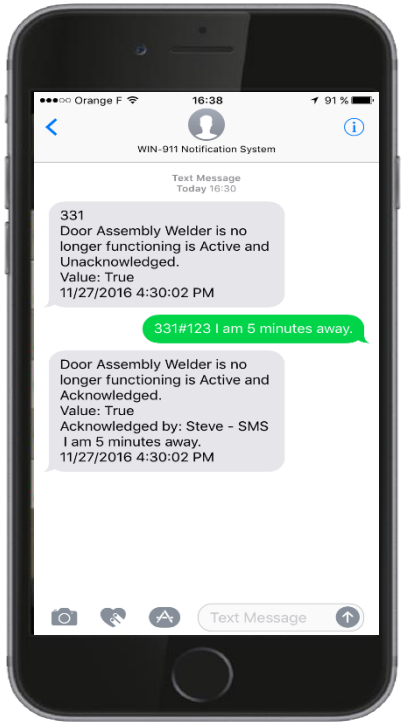
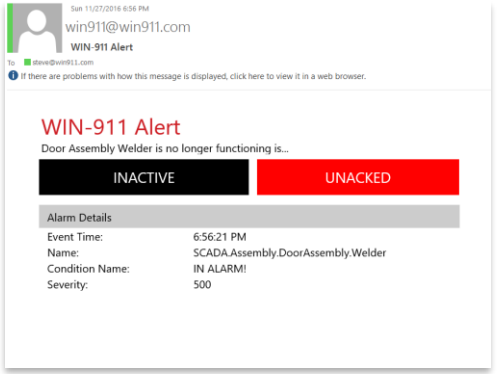
Notification Methods



VoIP & Analog Phones

cisco

SIP.US



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WIN-911 Mobile

- Android and iOS Device support
- Alarming via Push Notification
- Dynamic alarm and report summary screens – live and historical
- Change Schedules and Notification Policies from anywhere!
- Supports Multiple Sites
- SmartSights Mobile: Coming soon!

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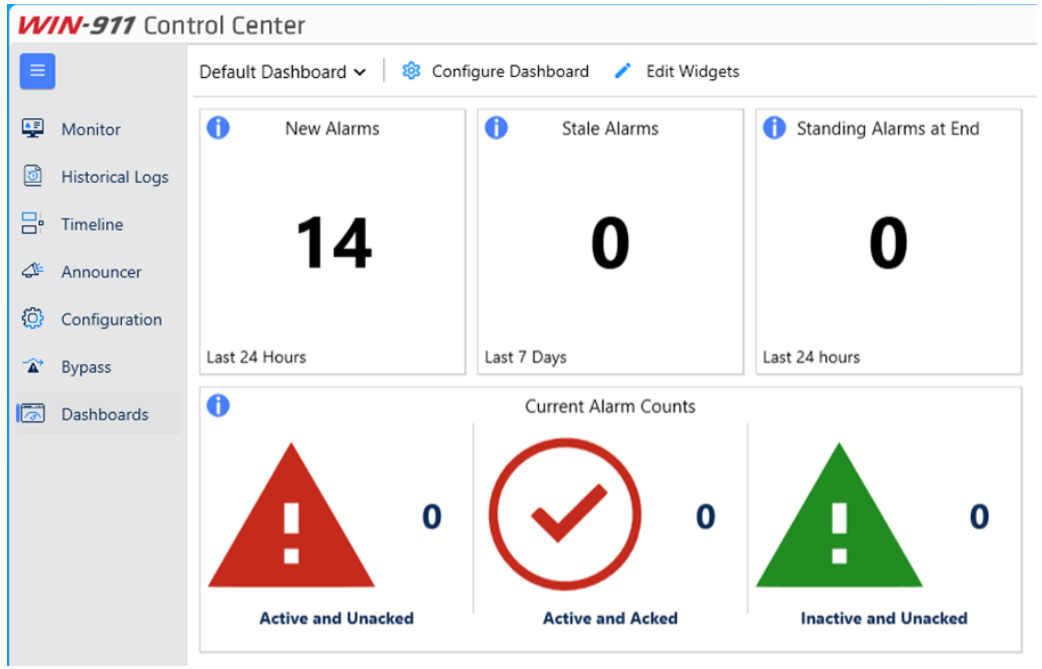
Alarm Dashboards



- Provides a snapshot of alarm performance
  - ISA 18.2 "Lite"
- Many alarm metric widgets are available
- Multiple Dashboards are supported
  - Can connect to multiple systems
- Requires Ultimate license subscription

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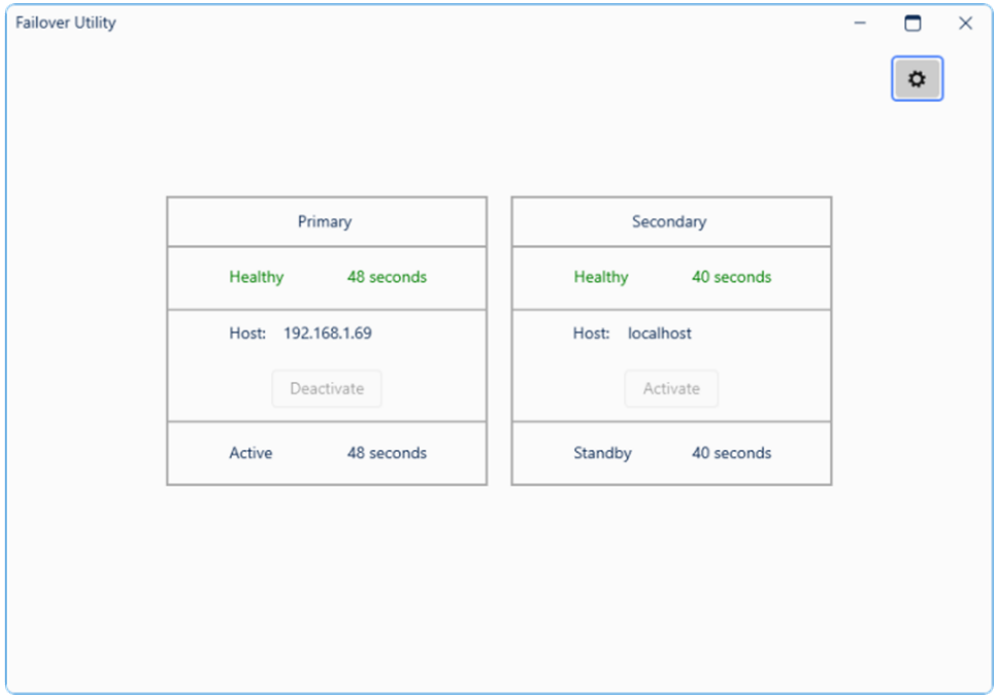
Failover Utility



- Monitors Primary and Secondary WIN-911 systems
- Automatically switches the active WIN-911 system when a fault condition is detected
  - No scripts required
- Automatically reverts to Primary when it recovers
- Included when you purchase a Failover license subscription

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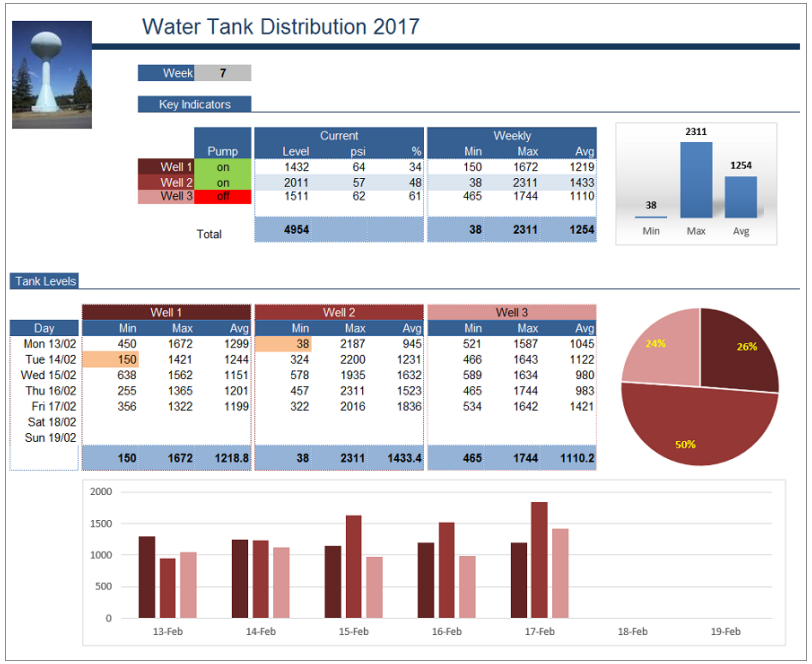
Solutions for All Automation Systems

- For OEMs and Small Facilities
  - Report directly from PLC
    - Use OPC DA, UA
- For HMI Systems
  - Report from Data Logs and Text files
- For Historians
  - OPC HDA
  - Connect to leading Historians
- For Database Users
  - Report ISA 18.2 metrics
  - Report from WIN-911 database



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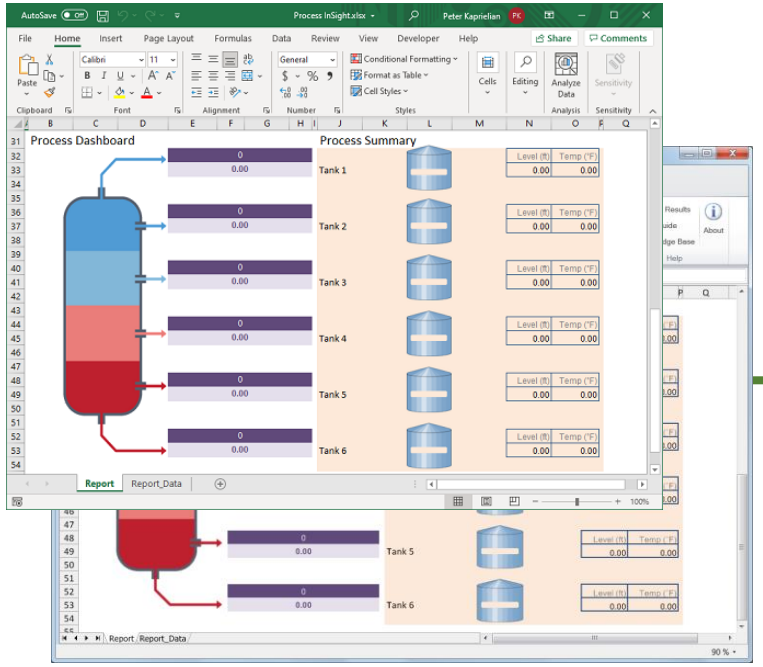
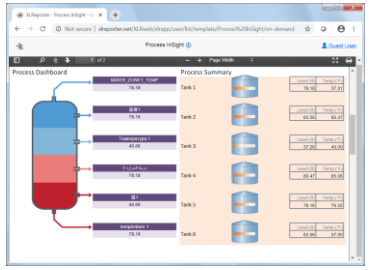
Turn Data into *Insight*

- Connect To Over 80 Data Sources
  - Native connectivity to iFIX, CIMPLICITY, and GE Historian
  - Scales to PLC, HMI, Historian, Databases
  - OPC and OLE-DB
- Design Workbook Templates
  - Out-of-box reports
  - Design Studio Standalone or in Excel
  - Powerful, Flexible Analytics
- Report Automatically or On-Demand
  - On Time or Events
  - Web Browser or Windows Desktop
- Distribute
  - Workbook, PDF, and Web Reports
  - Email, FTP, Database Export, REST API
  - Smart Devices



Workbook template

Automatically On-Demand



Desktop Reports

Mobile Reports

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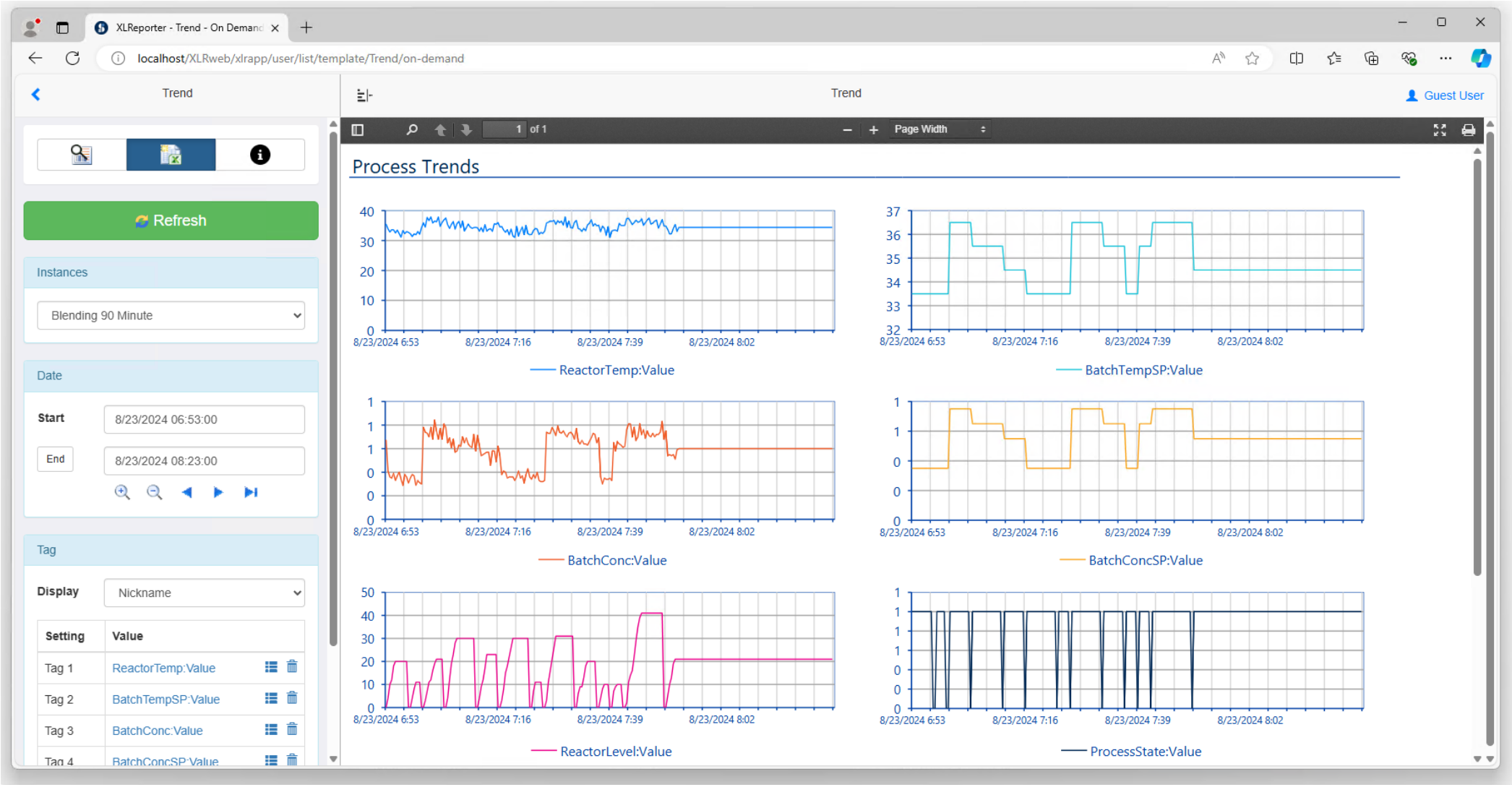
On-Prem Web Reports or Local Reports



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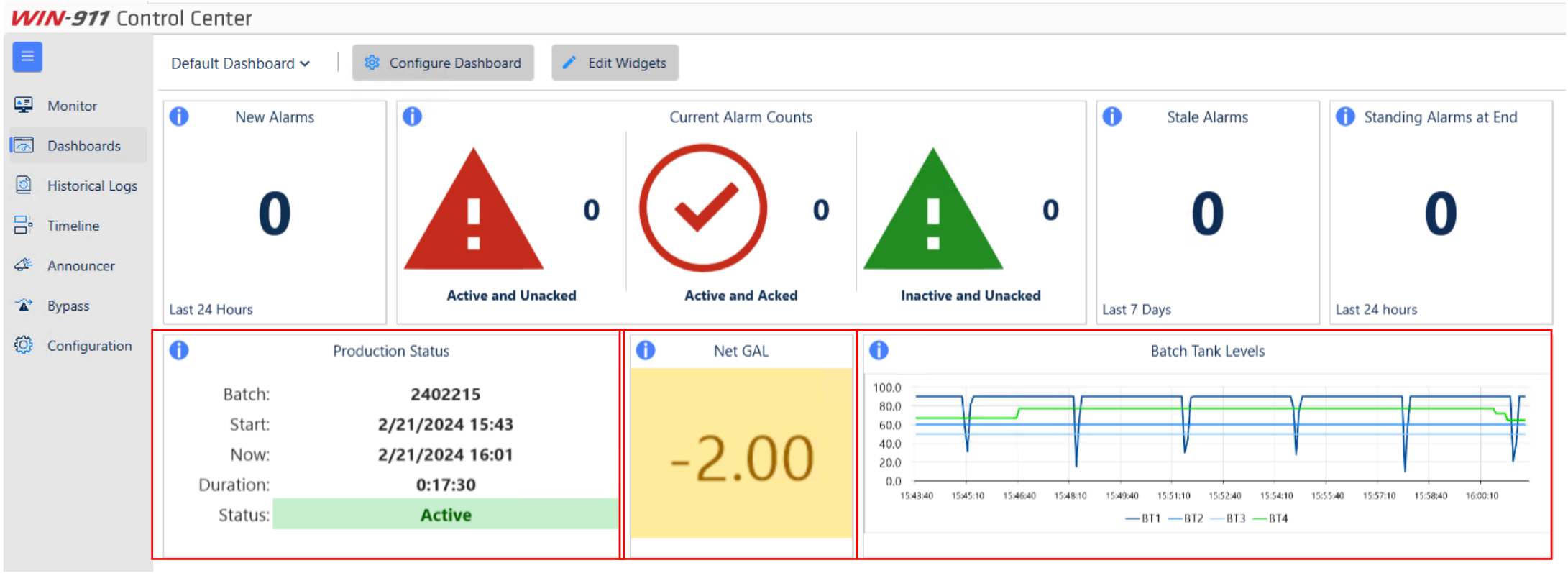
New SmartBundles!

- Now offering bundled XLReporter and WIN-911 solution – available as 3-year subscription
- Available in SmartBundle Pro and Ultimate packages
- Includes integrated Reporting options; Automated Push Reports requires Ultimate edition
- Added PEER integration: coming soon!

Bring the Big Picture into Focus



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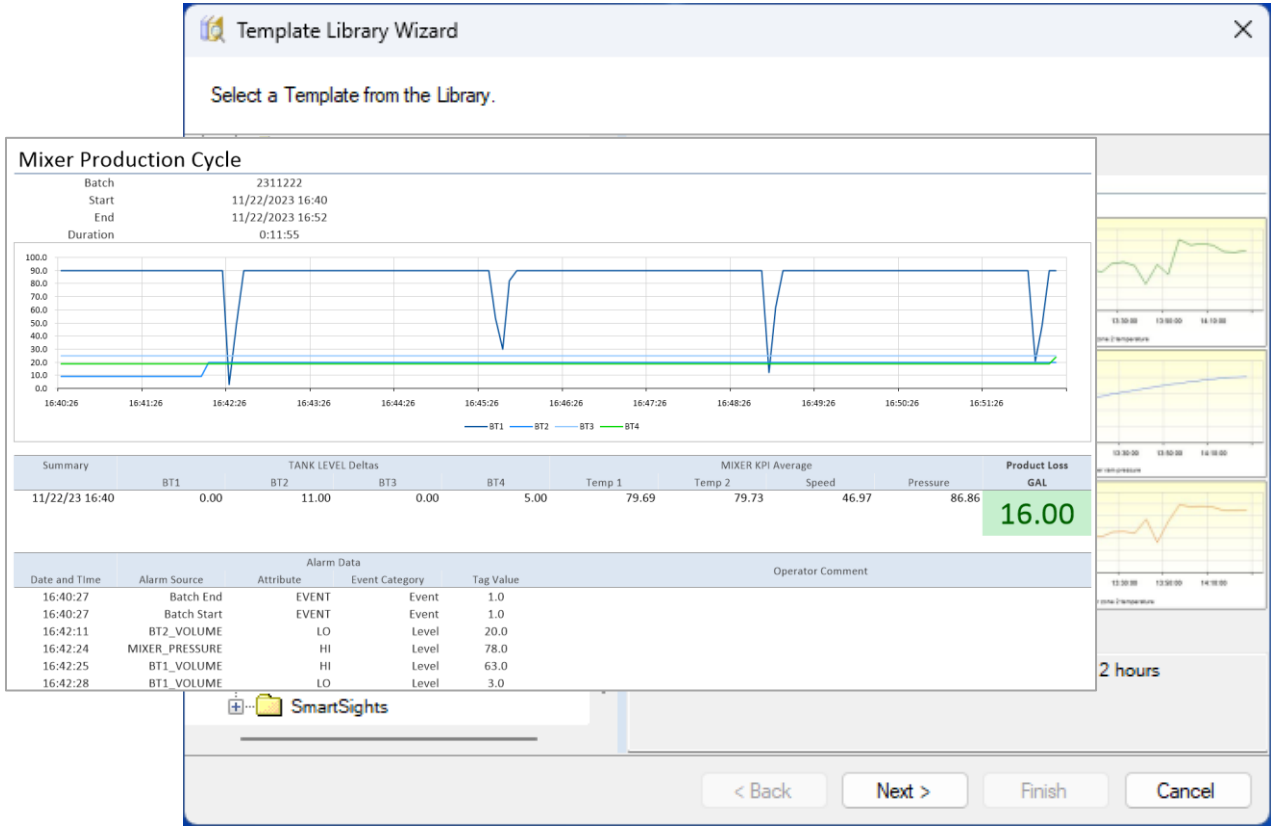
Relate Alarms to Process Data

- Out-of-Box Templates
- Configurable Templates
  - Incident Reports
    - Enhance alarm response
  - Dashboards
    - Summarize process activity
  - Event Reports
    - Monitor and audit discrete processes



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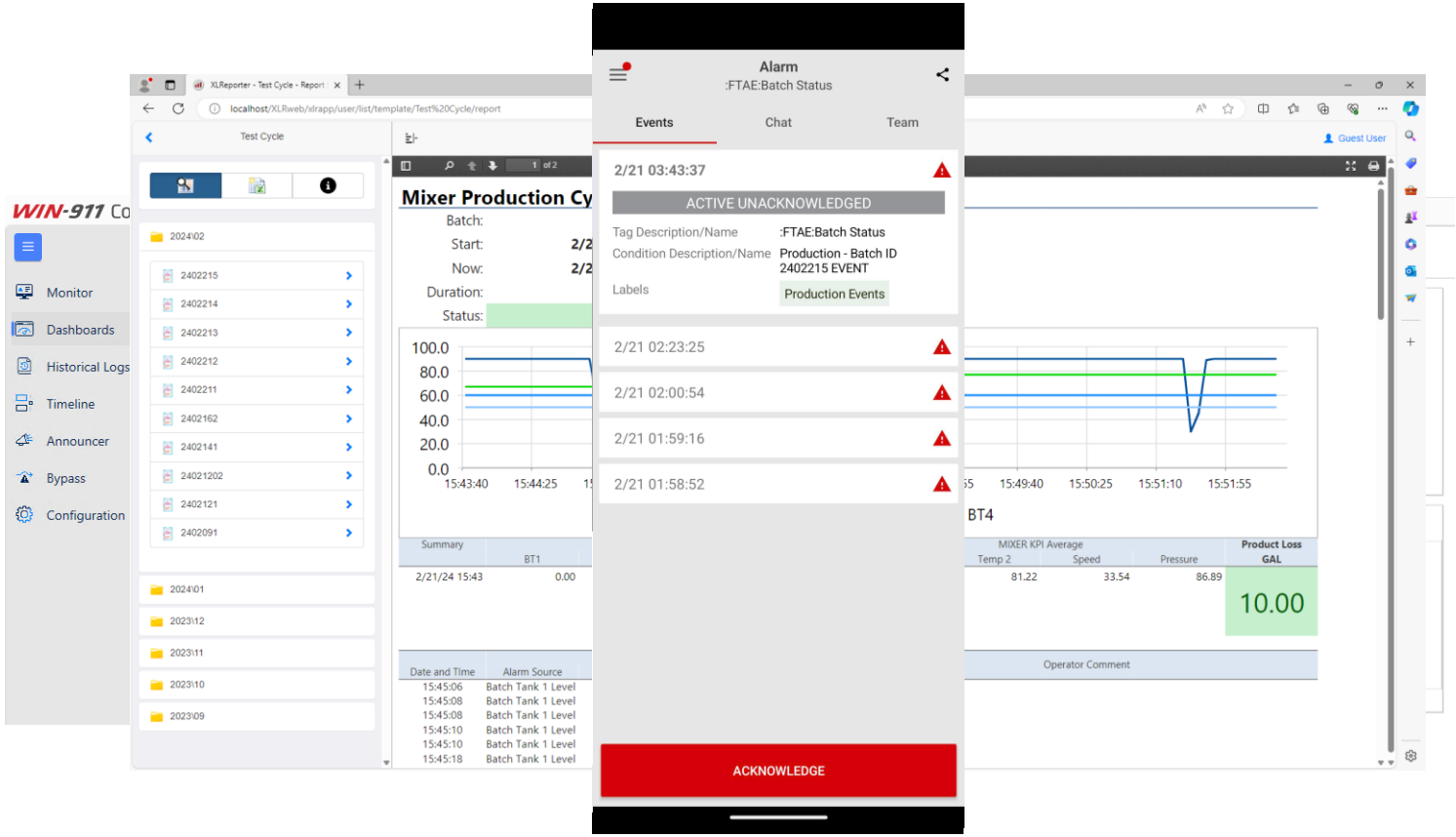
One Facility, Different Perspectives

- Mobile Alerts
  - Maintenance, operators
- Detail Audit Reports
  - Quality control, regulatory
  - Process engineers
- High-level Summary
  - System admins, supervisors
  - Live alarm metrics
  - Holistic process summary
  - Drill-down analysis



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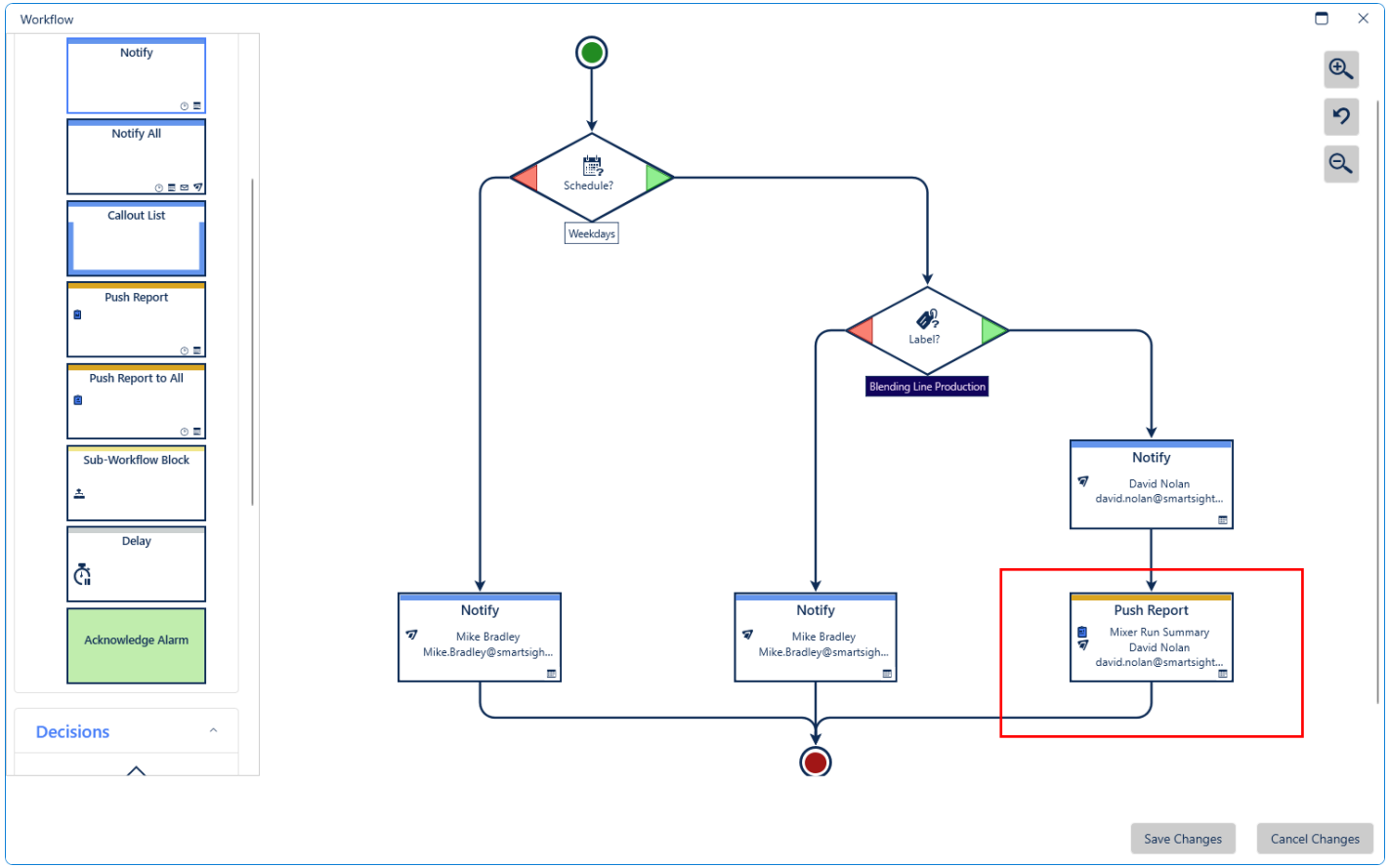
Add Context to Notifications

- Link Report to Workflow
  - WHEN to send a report
  - WHAT report to send
  - WHO to send it to
  - HOW to send it



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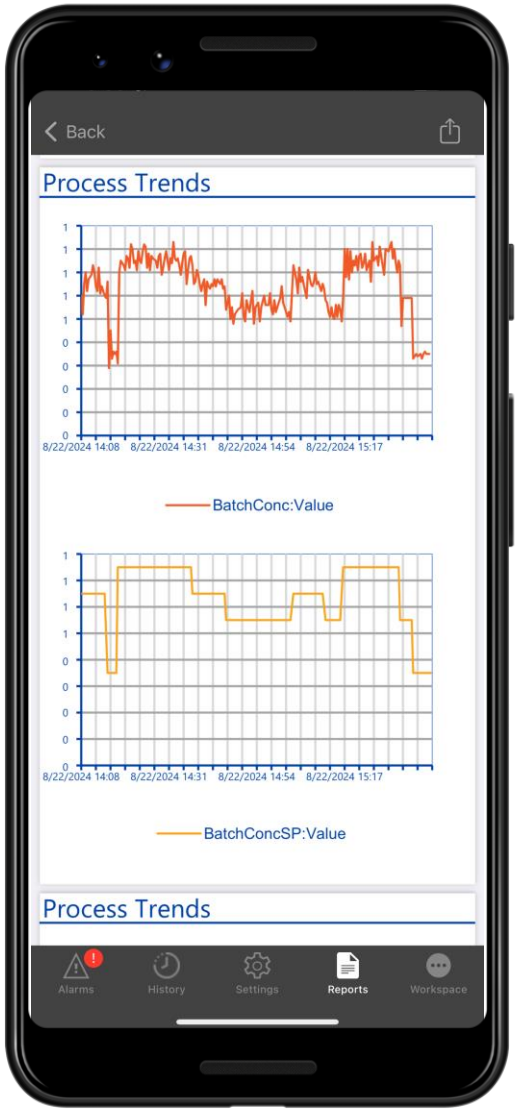
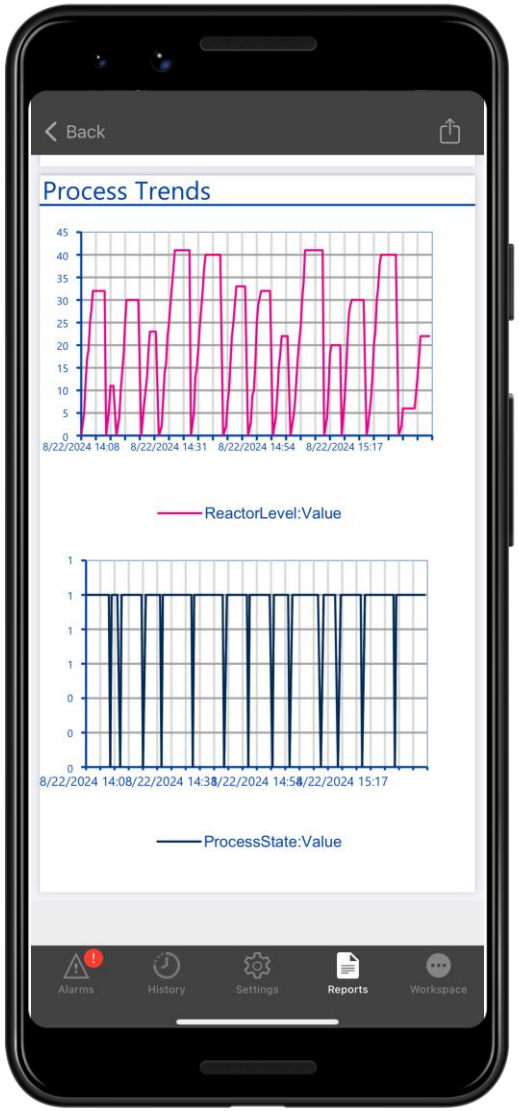
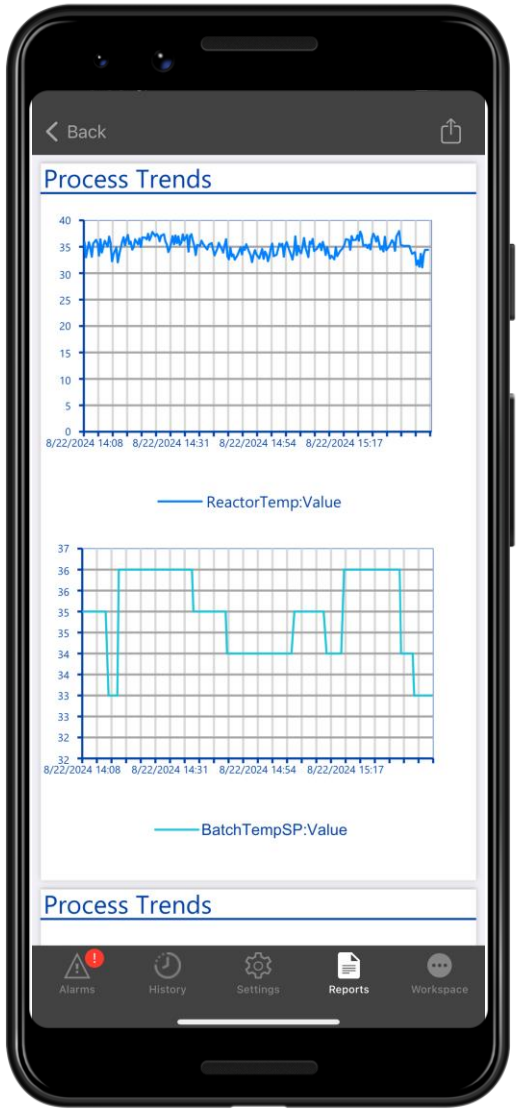
Mobile Trends and Dashboards







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SmartSights Bundle – Product Synergy

- Software License
  - XLR now on WIN-911 platform (CodeMeter/WIBU)
  - Integrated Features with Subscription
- Perpetual Features
  - Produce reports on WIN-911 log data
- Subscription Features (Pro and Ultimate)
  - Push Reports and Dashboards directly to WIN-911 users (app + email)
  - Access On-Demand Dashboards from WIN-911 Mobile
  - PEER integration in March updates

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Let’s get started!