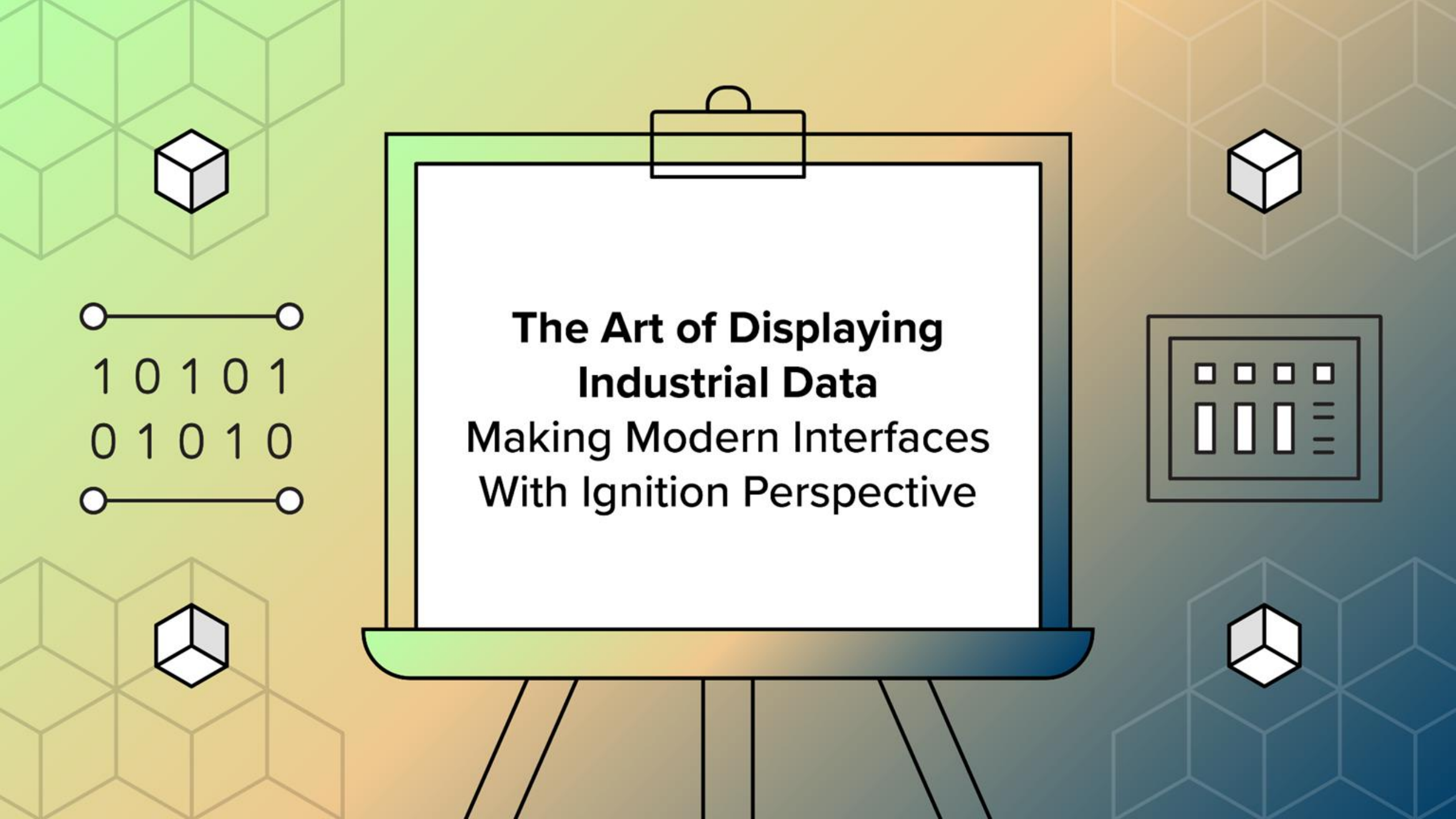

10101
01010
The Art of Displaying Industrial Data
Making Modern Interfaces With Ignition Perspective

Presenters

Don Pearson

Chief Strategy Officer

Inductive Automation

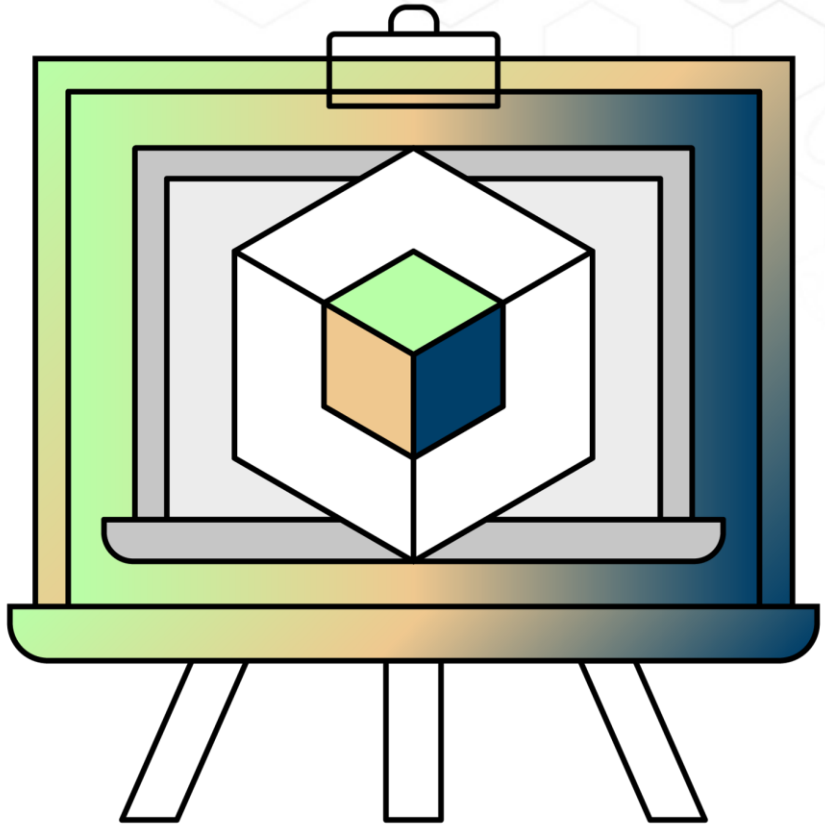
Kent Melville

Sales Engineering Manager

Inductive Automation

Agenda

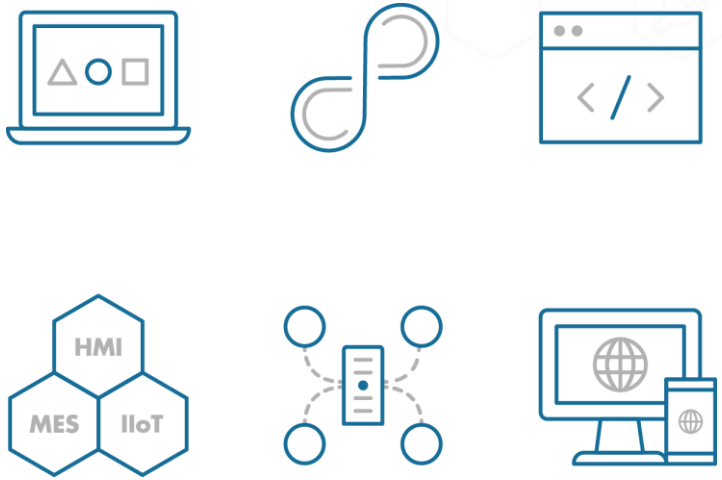
- Introduction to Ignition and Today's Guest Presenters
- About the Ignition Perspective Module
- Perspective Module Use Cases from:
  - AT-Automation
  - Vertech
  - XOCEAN
  - Corso Systems
- Wrap-Up
- Audience Q&A



Ignition by Inductive Automation

One Universal Industrial Application Platform for HMI, SCADA, MES & IIoT:

- Unlimited licensing model
- Cross-platform compatibility
- Based on IT-standard technologies
- Scalable server-client architecture
- Web-managed
- Launch on desktop or mobile
- Modular configurability
- Rapid development and deployment



Guest Presenters

Bart Mans
Technical Manager, AT-Automation

James Kent
Industrial Programmer, Vertech

Ruairi Daly
Lead Controls & Automation Engineer, XOCEAN

Scott Emond
Head of Operations, Corso Systems

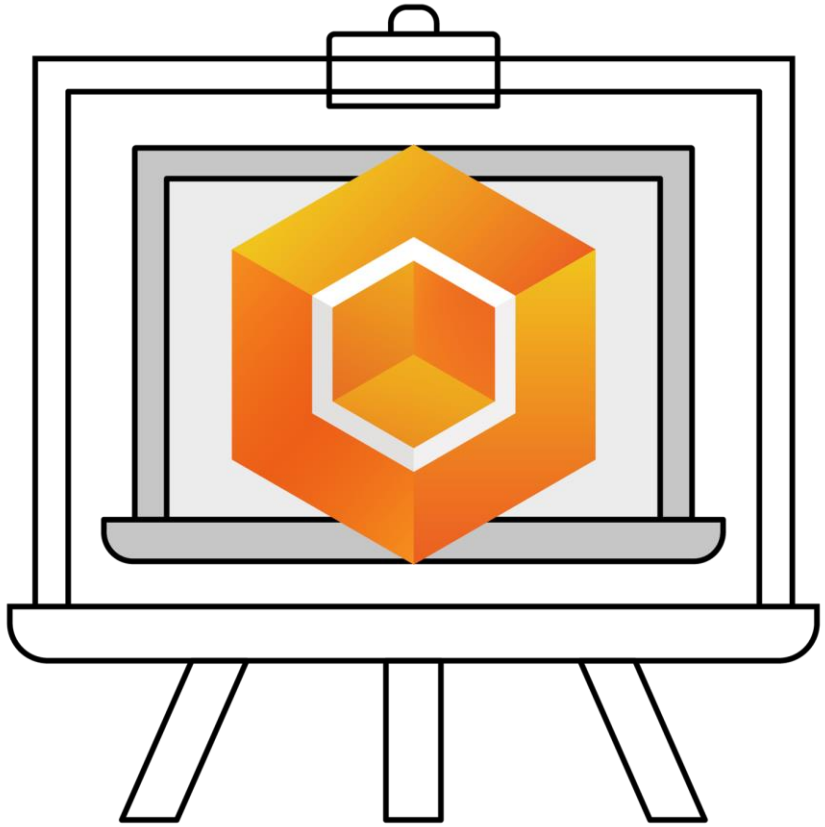
Ignition Perspective Module

In today's world, data is everywhere you look.

We need to bring data into focus and turn it into actionable insights.

We need to learn the art of displaying data in a way that empowers the user without overwhelming them.

To help industrial organizations accomplish that, we created the Ignition Perspective Module.



Ignition Perspective Module

Build beautiful industrial applications to monitor and control your process from mobile devices, desktops, and touch panels.

Real Use Cases of the Ignition Perspective Module

The real power of Perspective is seen in the projects that our innovative end users and integrators build with it.

Presented by:

1. AT-Automation
2. Vertech
3. XOCEAN
4. Corso Systems

AT-Automation

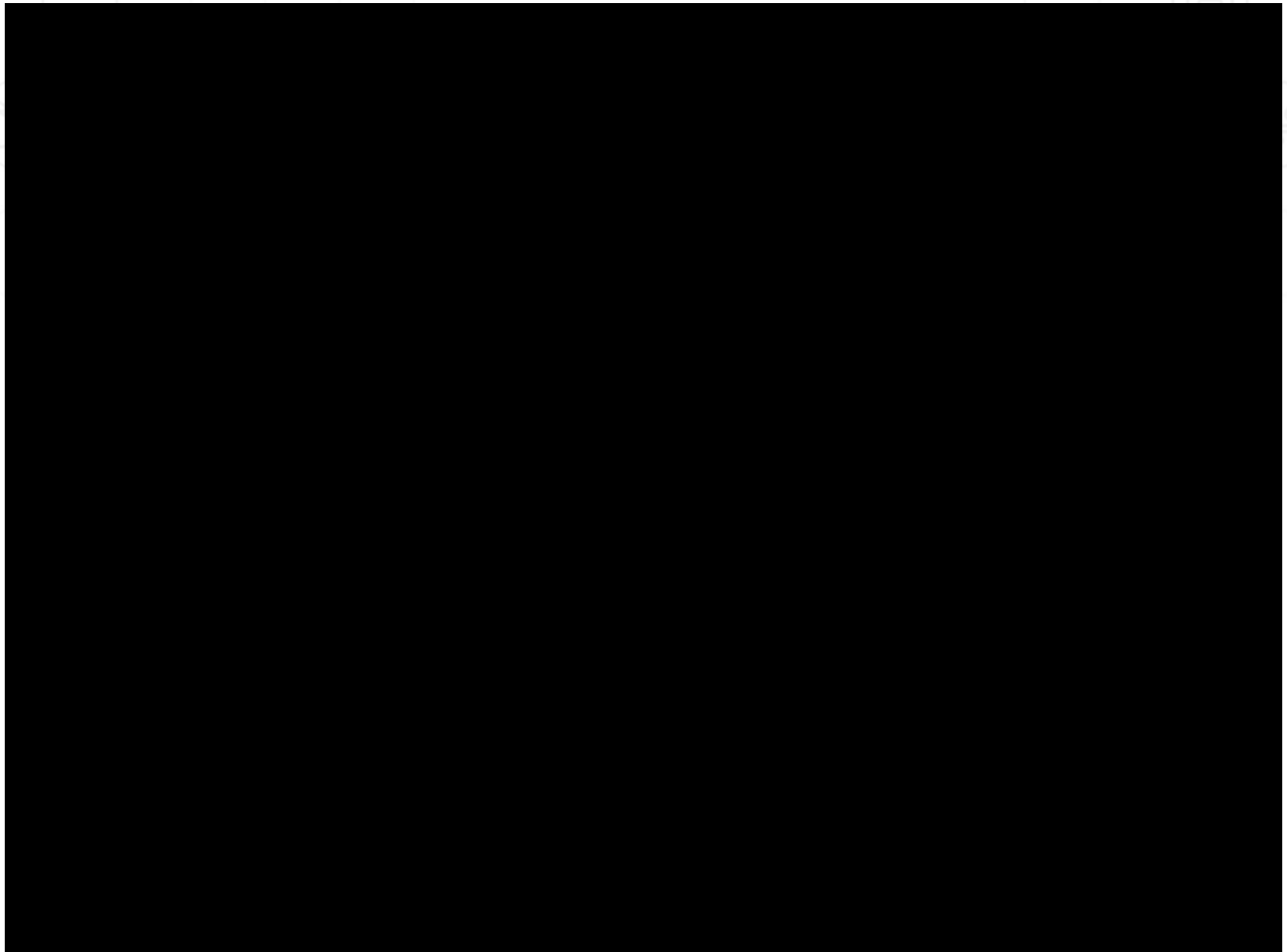
Replacing Many Systems With One — And Improving Mobility

Project for: LCS (Limex Cleaning Solutions)

Project by: AT-Automation

Industry: Manufacturing

AT-Automation



AT-Automation

Problem:

- Limex Cleaning Solutions uses high-quality washing machines and provides washing as a service
- Searching for a new system to control the washing machines and the activities related to washing as a service
- Data logging is crucial to improve the performance and the service.
- The washing machines are 65 meters long, a mobile HMI was needed so the operator could walk around and troubleshoot
- Wanted a unified system — a pilot project that could be distributed across multiple customers if successful

AT-Automation

Solution:

- Used Ignition to create an HMI, SCADA & MES solution for normal clients and mobile devices
- Role-based options to use the specific functions
- Also created a mobile project for the option to walk around with the HMI
- Logs the number of washed products for billing purposes
- Planning for the machines can also be done within the system
- AT-Automation developed and used the corporate identity module. This module gives the project a nice look and feel, and gives the developer access to multiple more advanced options on custom components.
- Since the total solution is used across multiple customers of LCS, the solution is branded as LCS Logic.

AT-Automation

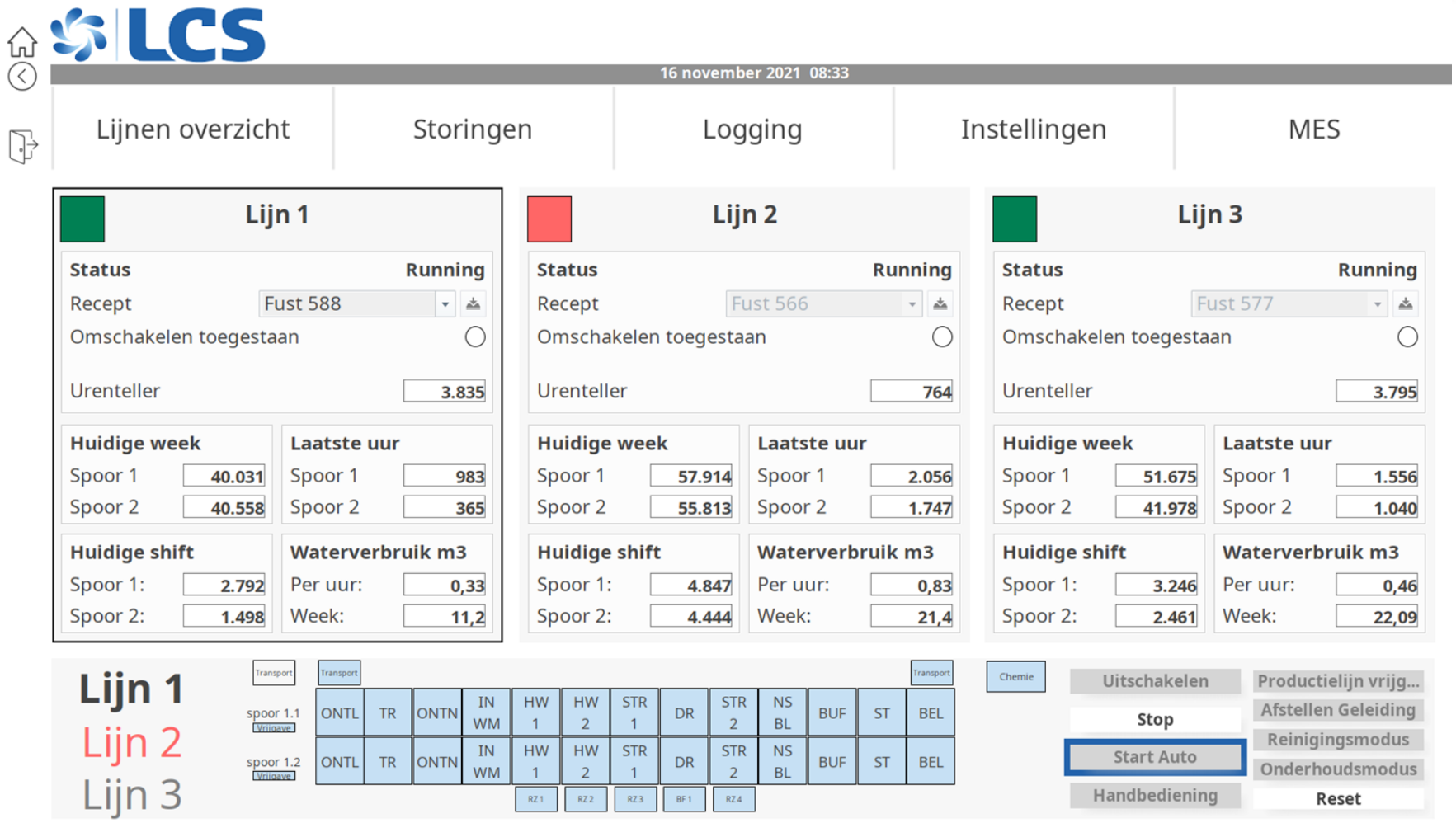
Project Scope:

- Tags: 5,821
- Screens: 35 in Vision and 10 in Mobile that are transferred to 80 views in Perspective
- Clients: 10 continuously open, more open occasionally
- Alarms: 580
- Devices used: 4 iPad minis and multiple laptops
- Architectures used: currently standard, soon wide-area with central Ignition to bridge corporate and control network
- Databases used: Currently 1 Microsoft SQL Server (will be expanding)
- Historical data logged: 20 tags but more with own manual logging

AT-Automation

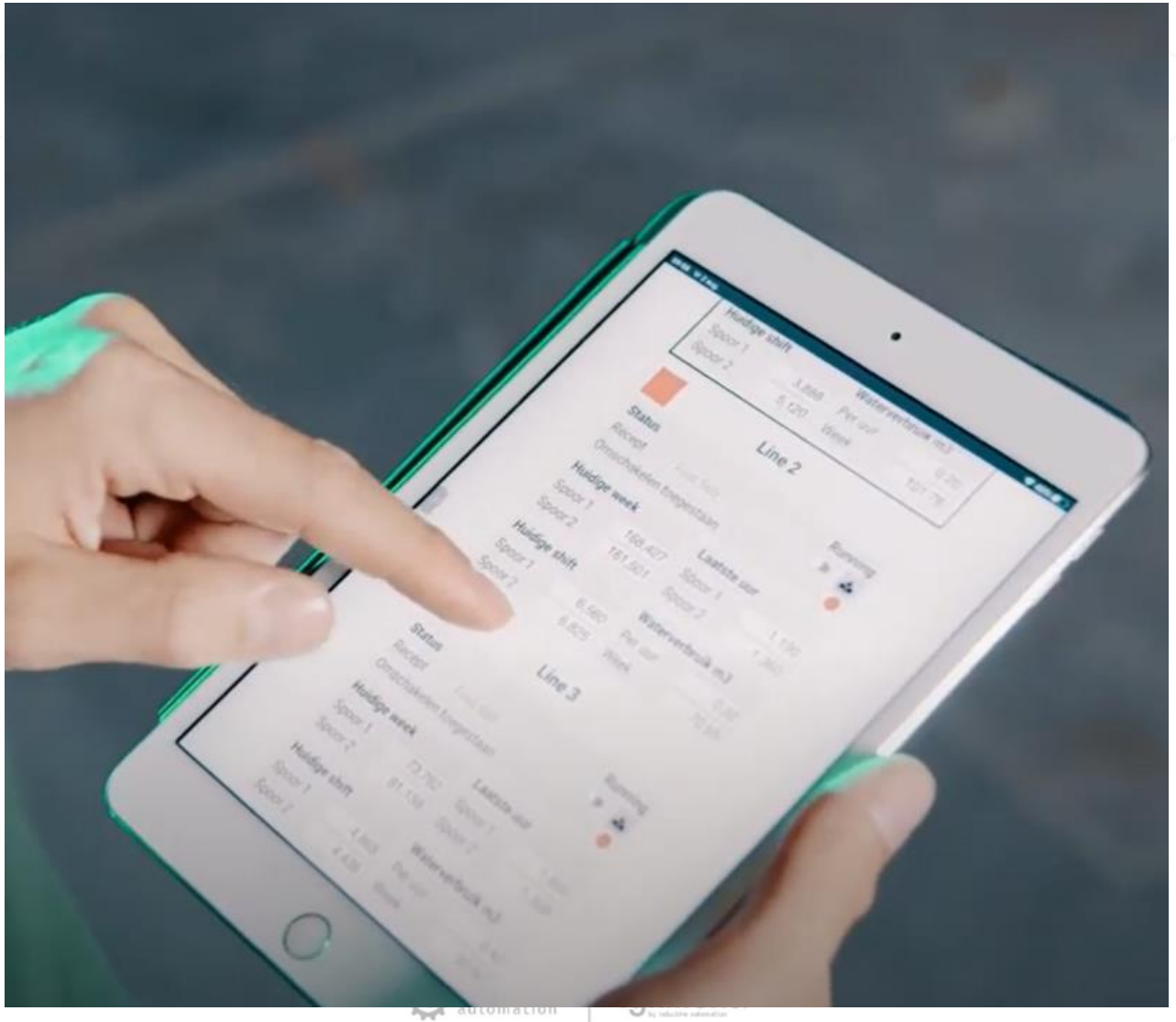
inductive automation | Ignition

AT-Automation

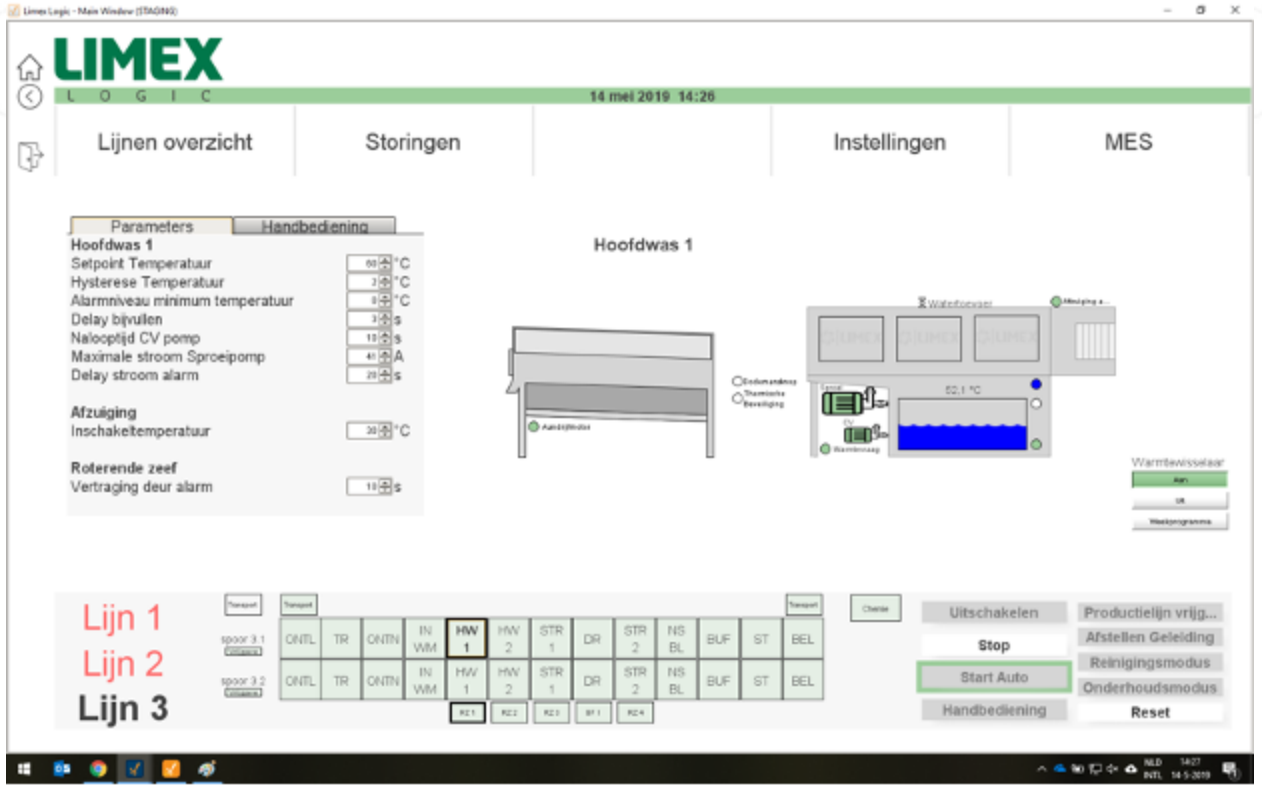


inductive automation | Ignition

AT-Automation

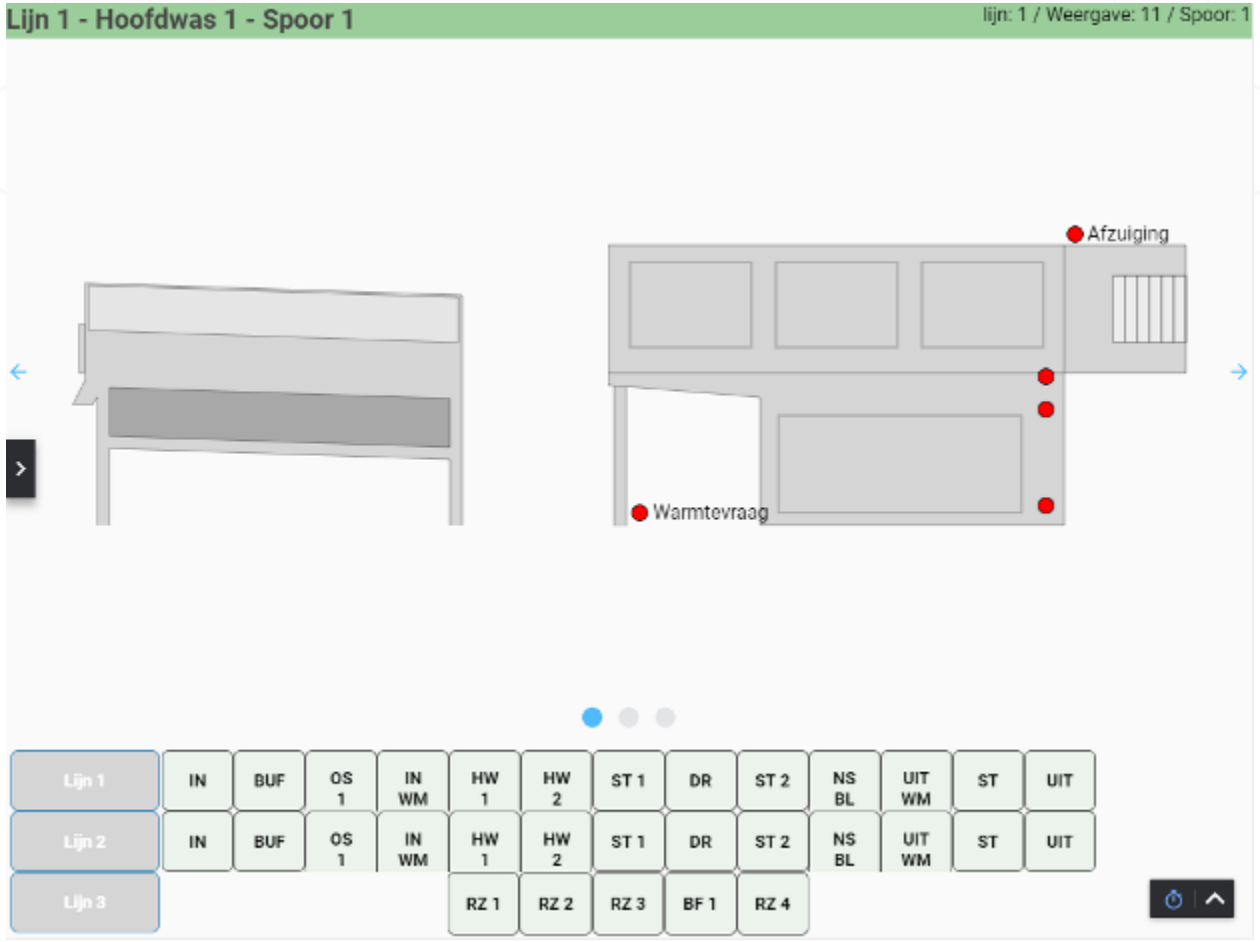


AT-Automation

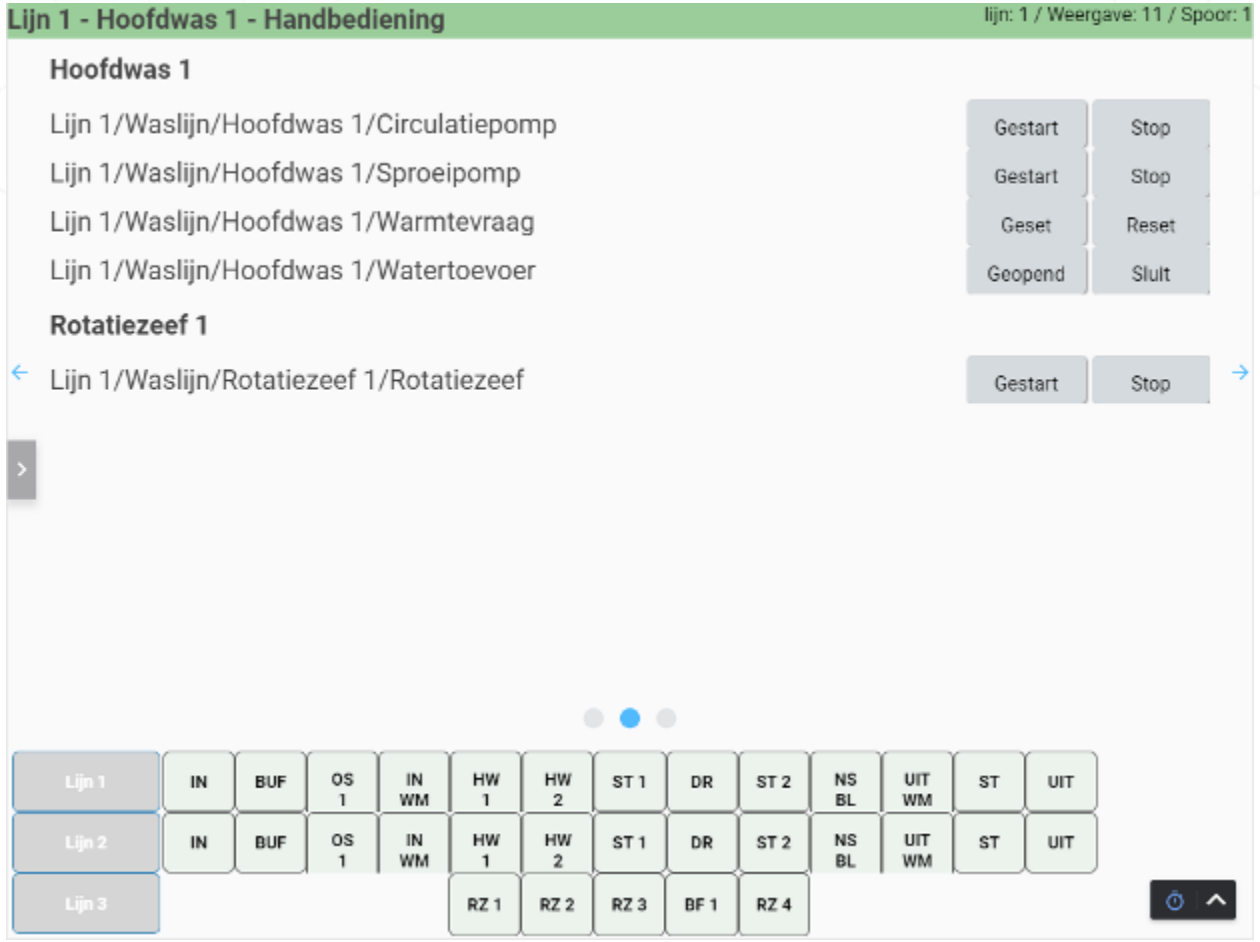


inductive automation | Ignition

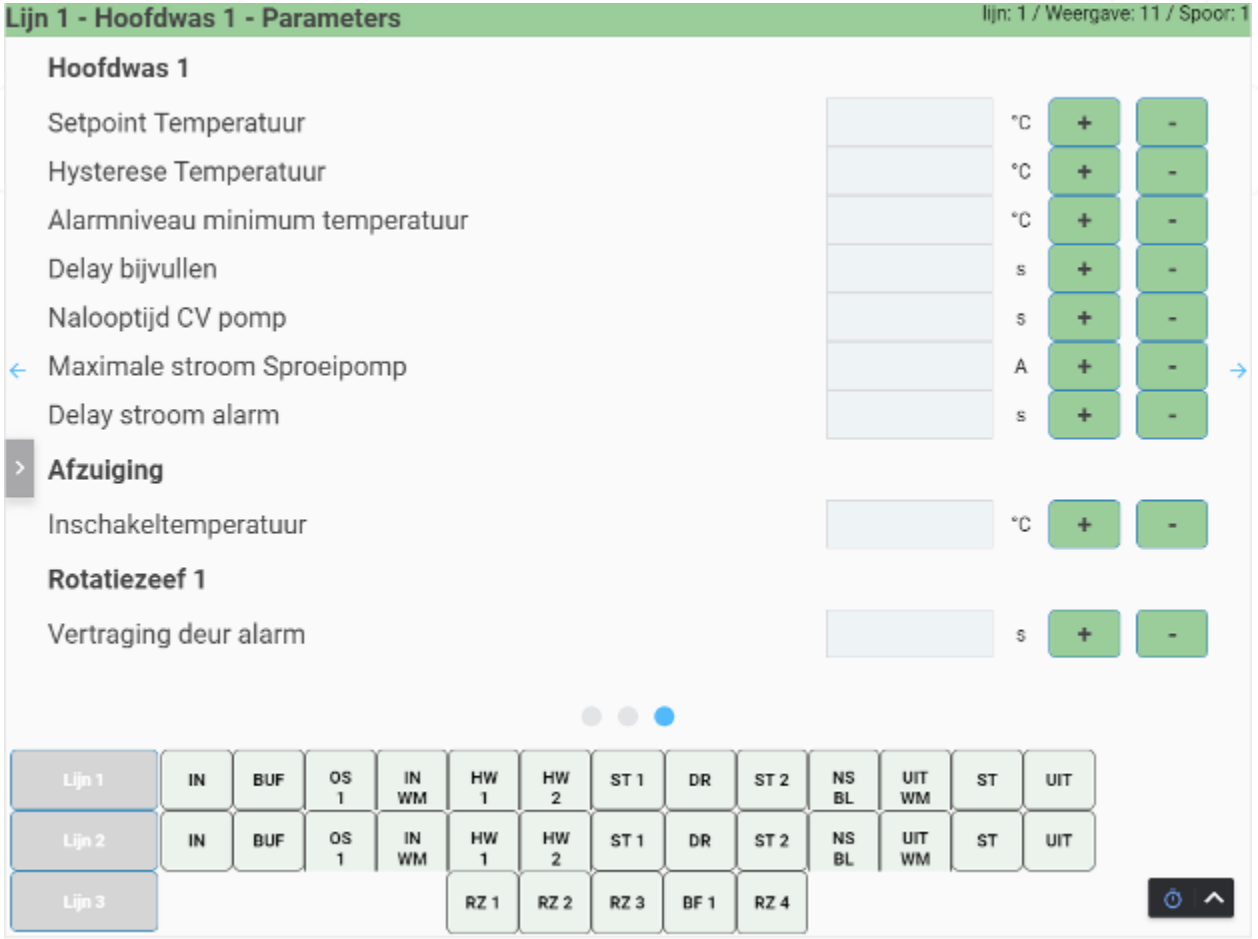
AT-Automation



AT-Automation



AT-Automation



inductive automation | Ignition

AT-Automation

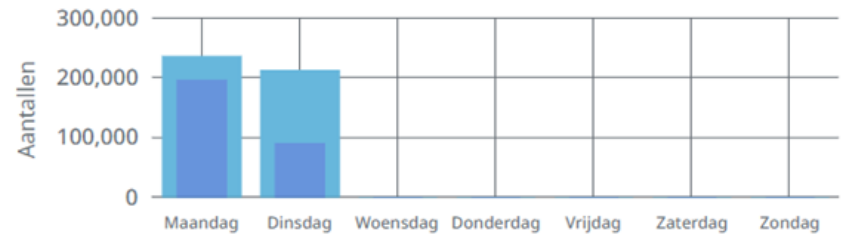
LCS CLEANING SOLUTIONS

Dashboard KPI's

Dashboard

16 november 2021 08:30

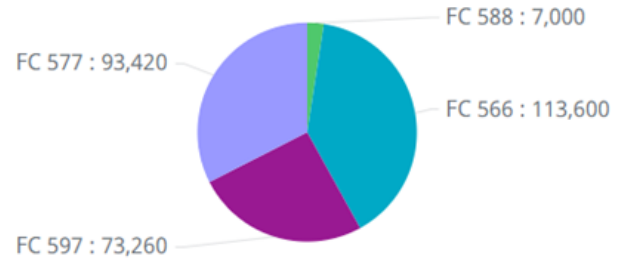
Planning vs Realisatie (week 46, 14 november 2021 22:00 - 21 november 2021 22:00)



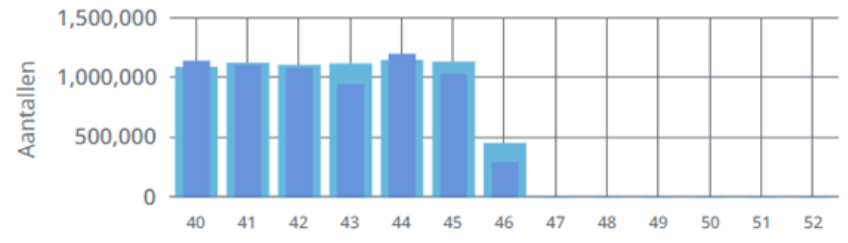
KPI's

KPI 01, KPI 02:	
Aantal in planning	450.000
Aantal gewassen	287.280
Afwijkingspercentage	-36,16 %
Absolute afwijking	-162.720
KPI 03, KPI 04, KPI 05:	
Stickernorm KPI 03	0 %
Desinfectienorm KPI 04	0 %
Desinfectiemiddel KPI 05	-11,85 %

Verdeling per Fust-type



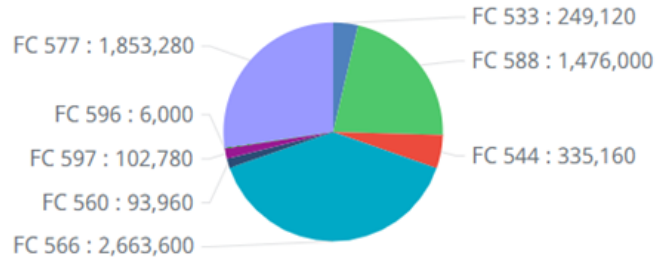
Planning vs Realisatie (periode Q4, 03 oktober 2021 22:00 - 02 januari 2022 22:00)



KPI's

KPI 01, KPI 02:	
Aantal in planning	7.164.000
Aantal gewassen	6.779.900
Afwijkingspercentage	-5,36 %
Absolute afwijking	-384.100
KPI 03, KPI 04, KPI 05:	
Stickernorm KPI 03	100 %
Desinfectienorm KPI 04	75,67 %
Desinfectiemiddel KPI 05	-11,85 %

Verdeling per Fust-type



Selecteer jaar en week

2021

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

inductive automation | Ignition

AT-Automation

Results:

- Ignition now used for all activities related to controlling the washing machines and washing as a service, instead of using multiple systems. No more waiting to switch systems.
- The process is always available for management and customers. Before Ignition, this was only available at the end of the week.
- With Perspective, the mobile HMI runs more smoothly with more options for controlling the machines.
- The user experience has improved. In addition, a possible Perspective browser application will be created for some of the functions currently in Vision.
- LCS is planning to distribute LCS Logic across Europe for all industries that require washing of products.
- When multiple washing facilities are up and running, the Ignition MES layer will be transferred and stored to a redundant central server in a data center.
- Every washing facility will have its own server for HMI and part of the SCADA. In case of downtime on the local servers, the central server will be used so production can continue.

Vertech

Improving Operations Across Three Water Districts With Modern SCADA

Project for: Warren, Simpson, and Butler County Water districts in Kentucky, USA

Project by: Vertech

Industry: Water/Wastewater

Vertech

Problem

- Existing iFix system left little flexibility to scale and match growing operational imperatives
- Analyzing and grouping data from the existing SCADA was too time-consuming and tedious
- New screens required duplicating coordinate placement of dozens of sub components with no easily available templates.
- Data that comprised reporting and graphical elements was stuck in proprietary history files.

Vertech

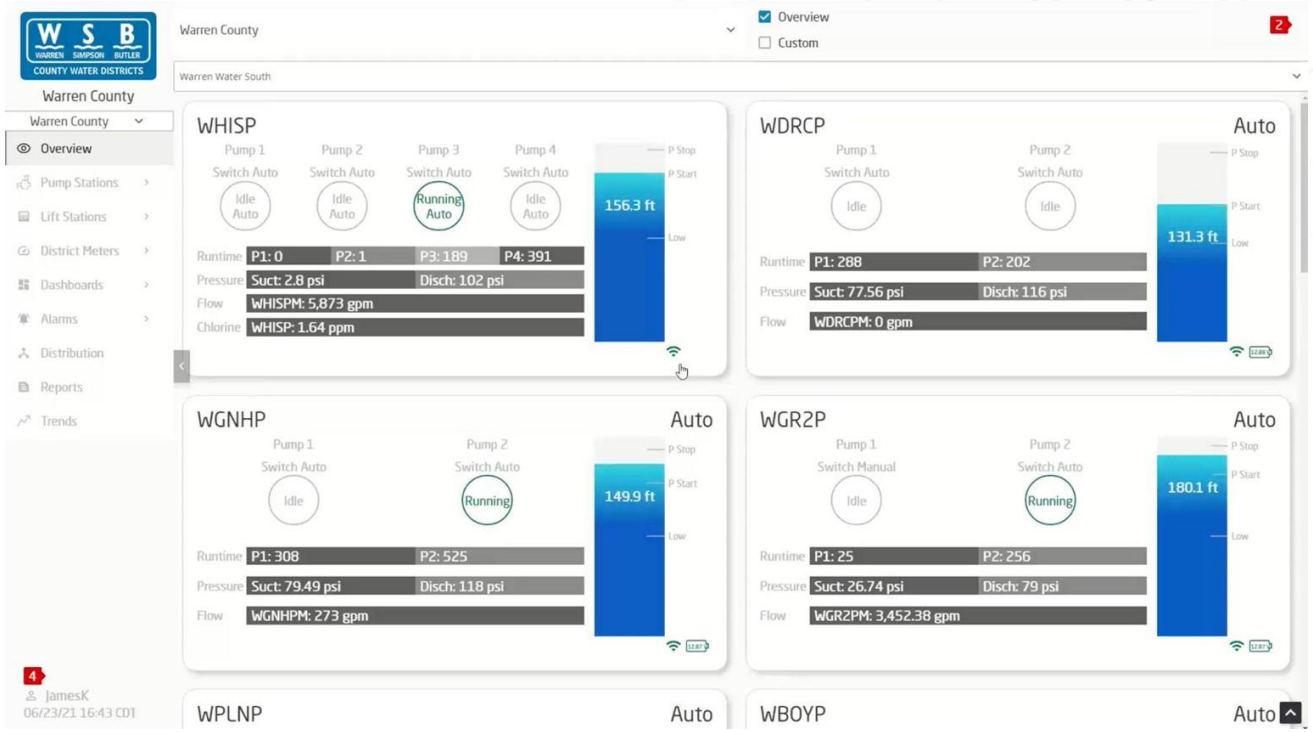
Solution

- Created a solution in Perspective that could match the existing and future needs of the districts while operating in an unrestricted and dynamic way, all while presenting the user with intuitive interfaces to ensure safety-critical actions at all times.
- Leveraged Perspective to create a sleek, modern interface that provided new insights and minimized operational complexity
- Built in parallel with the existing SCADA system, allowing Warren Water to phase out the old system at its discretion
- Balanced the load factor on devices being polled at remote sites via radio telemetry.

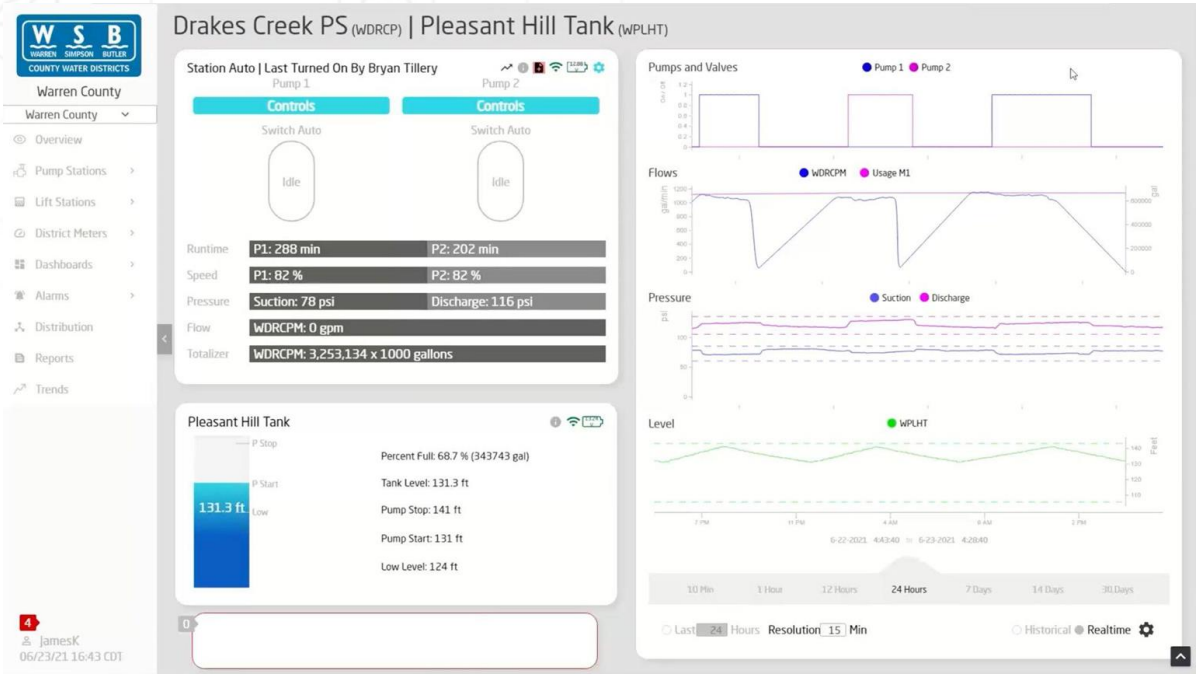
Vertech

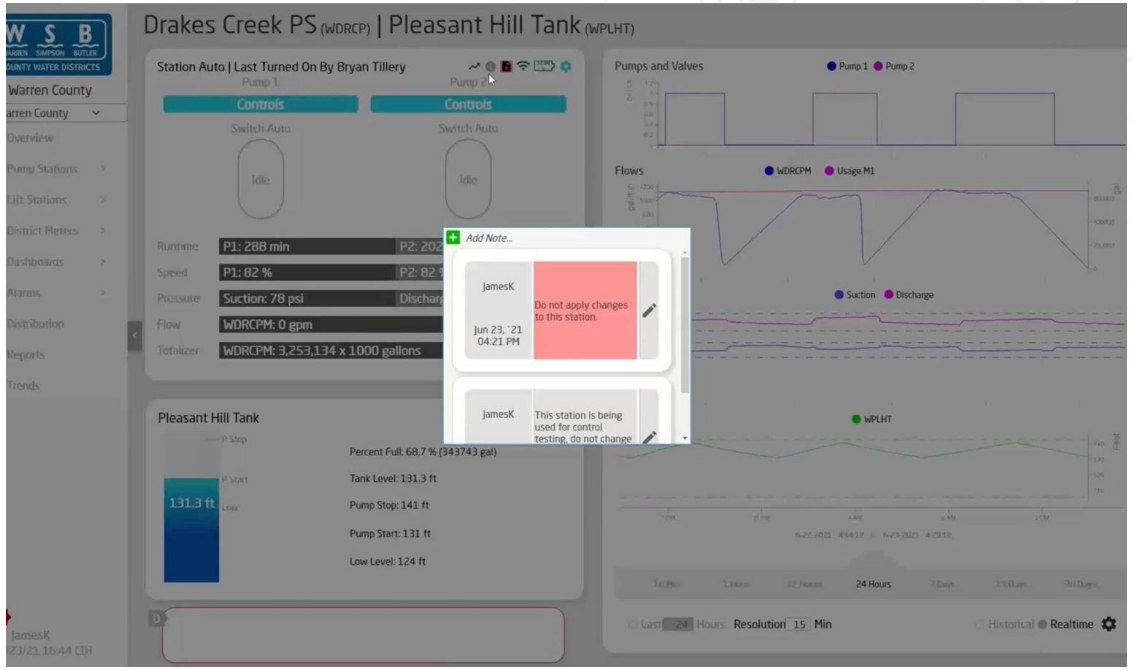
Project Scope

- Tags: 48,252
- Screens: 164
- Clients: 20
- Alarms: 1,705
- Devices used: 132 Modbus TCP RTUs, three Allen-Bradley Micrologix (1400 & 1500), one Allen-Bradley SLC
- Architectures used: Standard
- Databases used: one Microsoft SQL Server
- Historical data logged: 14,397 history-enabled tags, 32 million rows of historical data logged so far, at an average of 6.4 million/month



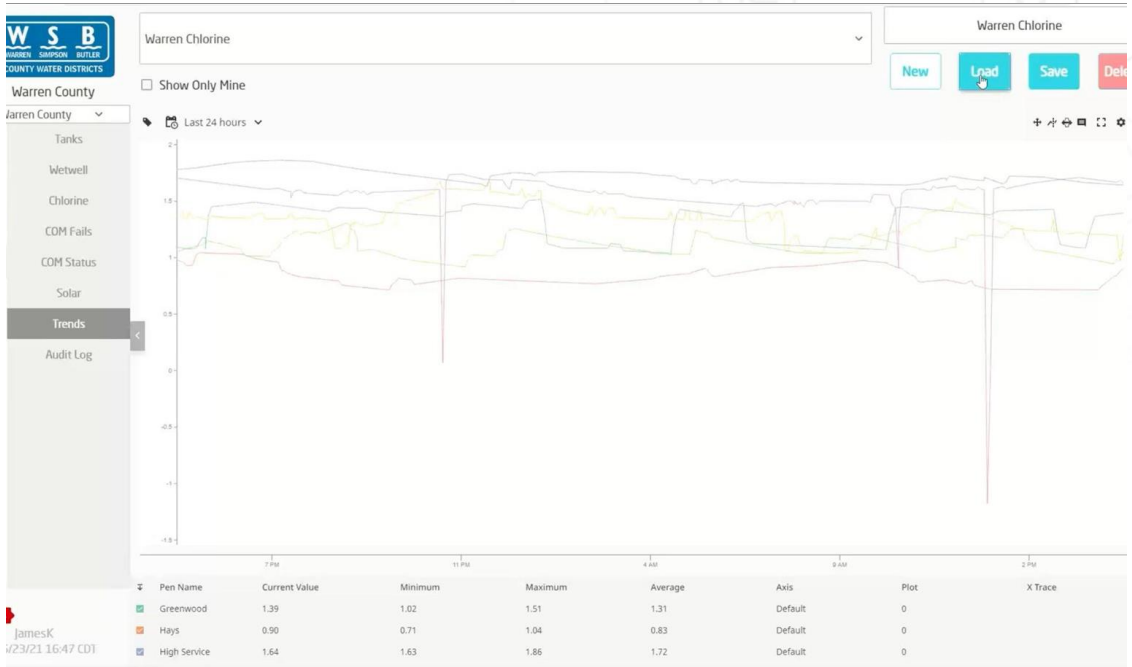
Vertech


Drakes Creek PS (WDRCP) | Pleasant Hill Tank (WPLHT)
Warren County
Overview
Pump Stations
Lift Stations
District Meters
Dashboards
Alarms
Distribution
Reports
Trends
Station Auto | Last Turned On By Bryan Tillery
Pump 1
Pump 2
Controls
Switch Auto
Idle
Runtime
P1: 288 min
P2: 202 min
Speed
P1: 82 %
P2: 82 %
Pressure
Suction: 78 psi
Discharge: 116 psi
Flow
WDRCPM: 0 gpm
Totalizer
WDRCPM: 3,253,134 x 1000 gallons
Pleasant Hill Tank
131.3 ft
Percent Full: 68.7 % (343743 gal)
Tank Level: 131.3 ft
Pump Stop: 141 ft
Pump Start: 131 ft
Low Level: 124 ft
Pumps and Valves
Flows
WDRCPM
Usage M1
Pressure
Suction
Discharge
Level
WPLHT
24 Hours
Resolution 15 Min
Historical
Realtime
JamesK
06/23/21 16:43 CDT

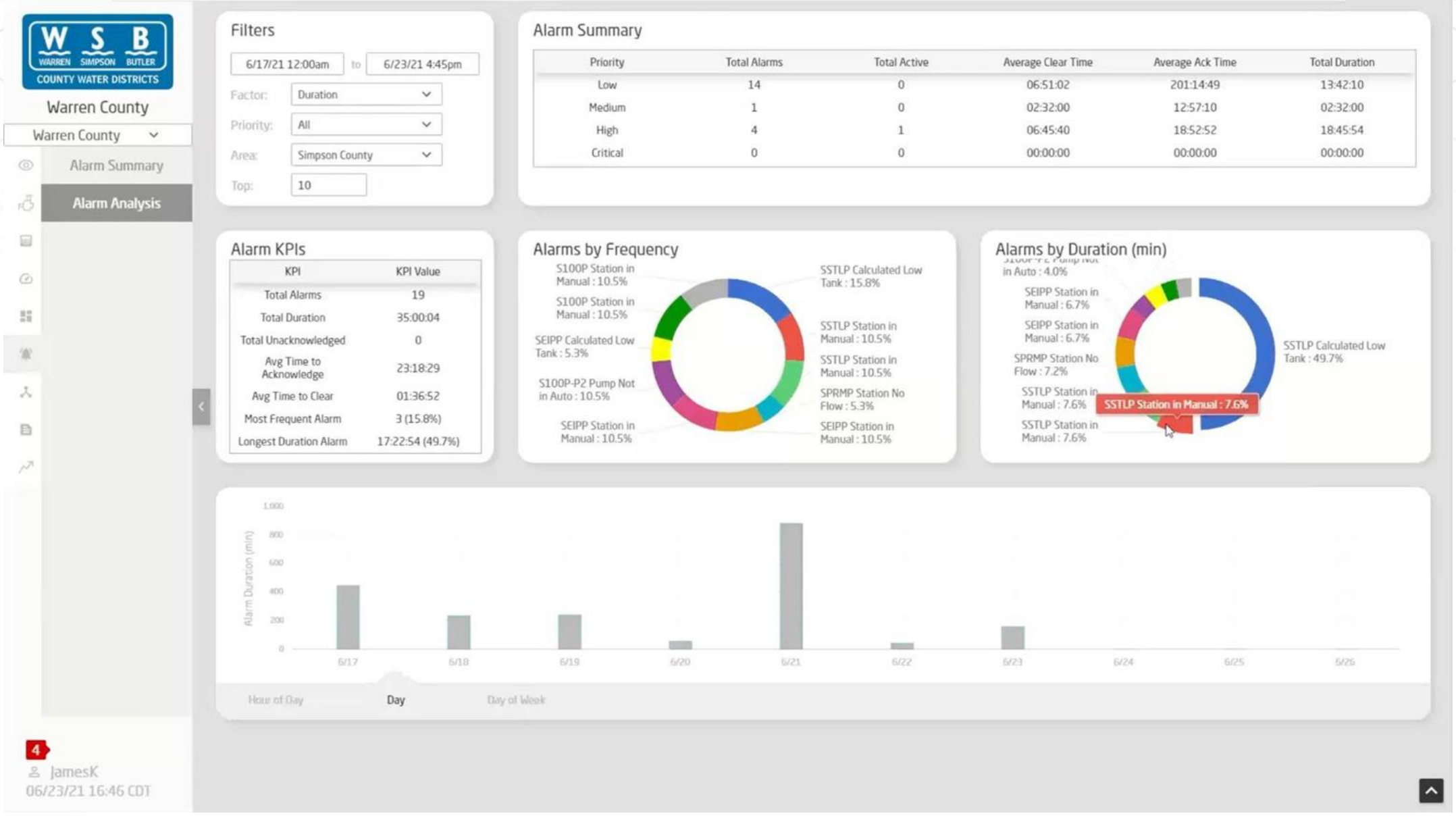

Drakes Creek PS (WDRCP) | Pleasant Hill Tank (WPLHT)
Add Note...
JamesK
Jun 23, '21
04:21 PM
Do not apply changes to this station.
This station is being used for control testing, do not change

Vertech


Solar Overview
Warren County
Show All
W0K1M × W68WP ×
Tanks
Wetwell
Chlorine
COM Fails
COM Status
Solar
Trends
Audit Log
W0K1M
Solar Voltage
Resolution (Hours)
1
Custom Time
W68WT
Solar Voltage
Resolution (Hours)
1
Custom Time
JamesK
06/23/21 16:46 CDT


Warren Chlorine
Warren Chlorine
Show Only Mine
New
Load
Save
Warren County
Tanks
Wetwell
Chlorine
COM Fails
COM Status
Solar
Trends
Audit Log
Last 24 hours
Pen Name
Current Value
Minimum
Maximum
Average
Axis
Plot
X Trace
Greenwood 1.39 1.02 1.51 1.31 Default 0
Hays 0.90 0.71 1.04 0.83 Default 0
High Service 1.64 1.63 1.86 1.72 Default 0
JamesK

Vertech


WSB
WARREN SIMPSON BUTLER
COUNTY WATER DISTRICTS
Warren County
Warren County
Alarm Summary
Alarm Analysis
Filters
6/17/21 12:00am
to
6/23/21 4:45pm
Factor:
Duration
Priority:
All
Area:
Simpson County
Top:
10
Alarm Summary
Priority | Total Alarms | Total Active | Average Clear Time | Average Ack Time | Total Duration
Low | 14 | 0 | 06:51:02 | 201:14:49 | 13:42:10
Medium | 1 | 0 | 02:32:00 | 12:57:10 | 02:32:00
High | 4 | 1 | 06:45:40 | 18:52:52 | 18:45:54
Critical | 0 | 0 | 00:00:00 | 00:00:00 | 00:00:00
Alarm KPIs
KPI | KPI Value
Total Alarms | 19
Total Duration | 35:00:04
Total Unacknowledged | 0
Avg Time to Acknowledge | 23:18:29
Avg Time to Clear | 01:36:52
Most Frequent Alarm | 3 (15.8%)
Longest Duration Alarm | 17:22:54 (49.7%)
Alarms by Frequency
S100P Station in Manual : 10.5%
S100P Station in Manual : 10.5%
SEIPP Calculated Low Tank : 5.3%
S100P-P2 Pump Not in Auto : 10.5%
SEIPP Station in Manual : 10.5%
SSTLP Calculated Low Tank : 15.8%
SSTLP Station in Manual : 10.5%
SSTLP Station in Manual : 10.5%
SPRMP Station No Flow : 5.3%
SEIPP Station in Manual : 10.5%
Alarms by Duration (min)
in Auto : 4.0%
SEIPP Station in Manual : 6.7%
SEIPP Station in Manual : 6.7%
SPRMP Station No Flow : 7.2%
SSTLP Station in Manual : 7.6%
SSTLP Station in Manual : 7.6%
SSTLP Calculated Low Tank : 49.7%
Alarm Duration (min)
1,000
800
600
400
200
0
6/17
6/18
6/19
6/20
6/21
6/22
6/23
6/24
6/25
6/26
Hour of Day
Day
Day of Week
4
JamesK
06/23/21 16:46 CDT

Vertech

Results

- Districts can view and control any level of equipment from a singular interface while introducing data insights on network reliability and system performance
- Improvement originates from operators as they were able to convey data insights through dynamic reports and annotated charting
- Alarm analysis, maintenance, and data transfer time has been greatly reduced.

XOCEAN

Helping Uncrewed Vessels Gather Ocean Data Using Edge Computing, MQTT and Perspective

Project for and by: XOCEAN

Industry: Marine Survey

XOCEAN®

Problem:

- To achieve remote operation of a USV at sea, there needs to be open data availability and exchange between the vessel and the pilot onshore. Finding an efficient mechanism for this data transfer was one of the key challenges of this project.
- Onboard intelligence is required to safely operate a USV at sea.
- Other platforms require several independent software packages to solve these problems. This is complex and difficult to manage.

XOCEAN®

Solution:

- The broad capability of the Ignition platform, and specifically Perspective, freed XOCEAN to build a web-based system with improved functionality and provided a better user experience, all on a robust and secure architecture.

- With Ignition and XOCEAN's agile development approach, new functions and features can be quickly developed and rolled out.

- XOCEAN's Cyberdeck 2.0 system uses Ignition as its controls platform to create a web-based command and control interface for its fleet. The system allows XOCEAN to perform over-the-horizon operations with USVs in any marine location, and work with remote pilots in any location with internet access.

inductive automation | Ignition

XOCEAN®

Solution:

- Hub-and-spoke architecture
- A central Ignition Gateway on an Azure VM serves Perspective views to the end user's web browser.
- Ignition's user authentication & management tools securely determine who can access various parts of the system.
- Intuitive interfaces and functions ensure that the user can focus on safety-critical actions at all times.
- Using MQTT modules and Ignition Edge Compute, data is sent from the USV to a cloud infrastructure where the Perspective Module serves a range view to the end users.
- Alarming and Notification keep the USV pilot and other users aware of anything that requires attention. In-built mapping functions of Ignition provide users with a real-time view of positional information.

inductive automation | Ignition

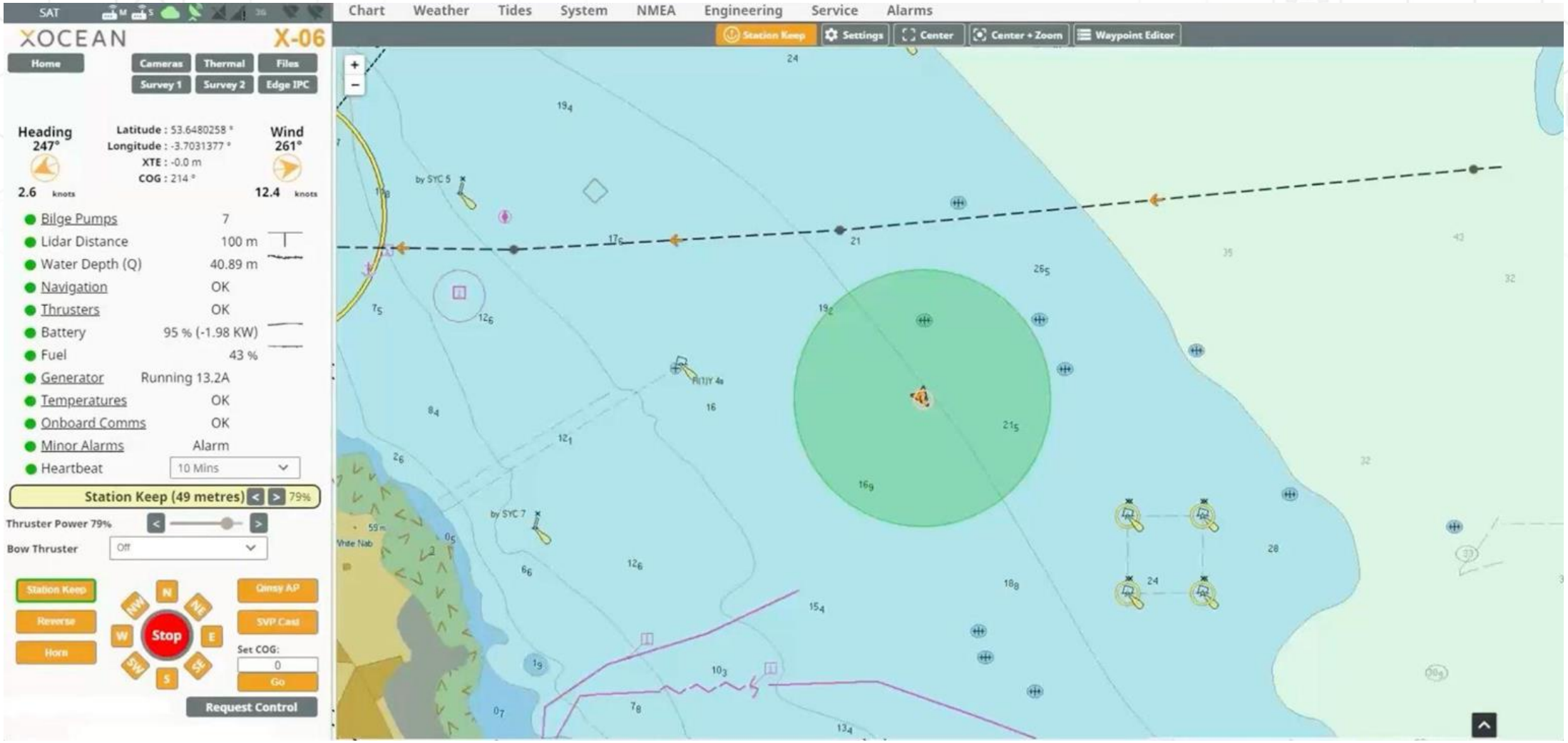
XOCEAN®

Project Scope:

- Tags: 30,000 (will grow with each new vessel)
- Screens: more than 30
- Clients: more than 50
- Alarms: more than 1,000
- Devices used: OnLogic IPC, CompactLogix PLC, NMEA Hardware, serial device sensors, various cameras
- Architectures used: Hub and Spoke, Main Ignition Gateway on Azure, Ignition Edge Compute/EAM/MQTT on vessels
- Databases used: MySQL
- Historical data logged: more than 30,000 tags (will grow with each new vessel)

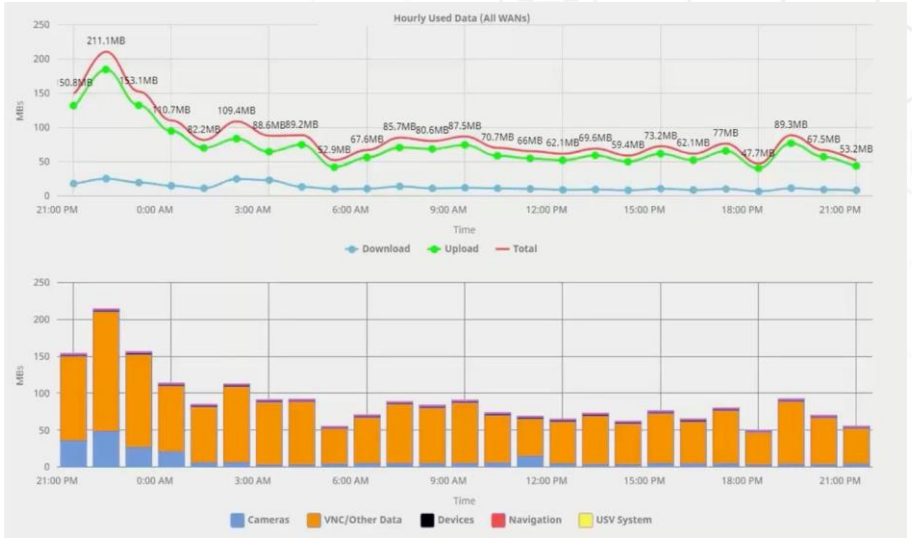
inductive automation | Ignition

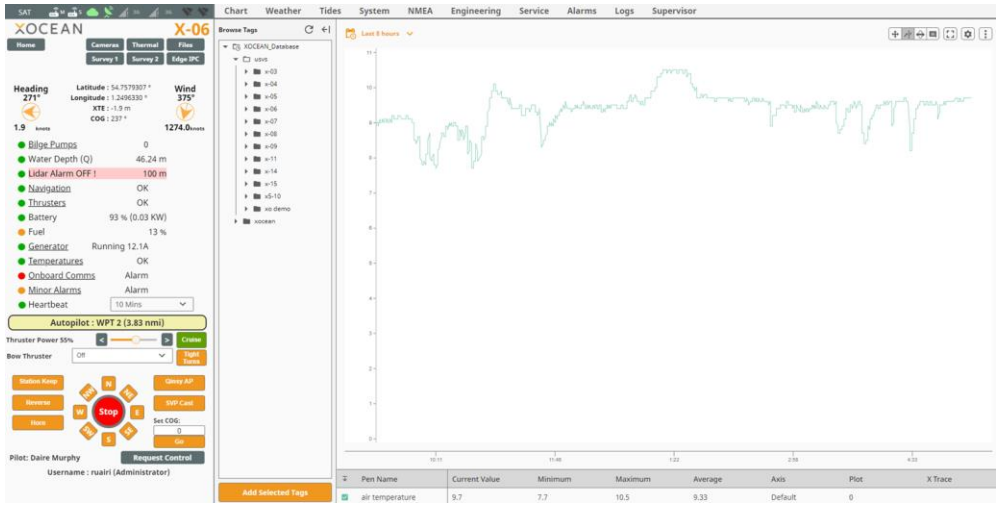
XOCEAN®

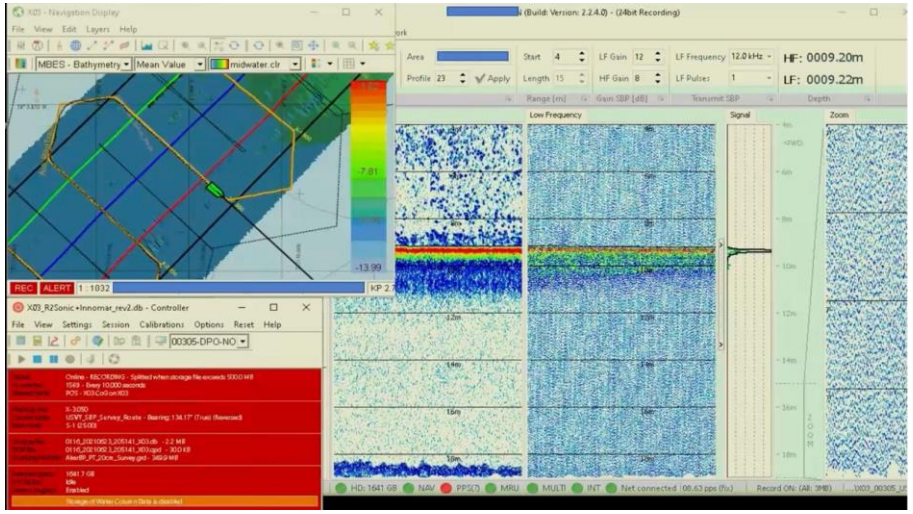


inductive automation | Ignition

XOCEAN®







inductive automation | Ignition

XOCEAN®

Results:

- Developed Edge and central Ignition Gateway projects in less than six months
- XOCEAN now has a scalable, secure, and flexible controls platform, putting them on a sound footing as they grow their fleet and enhance their product offering

inductive automation | Ignition

Corso Systems

Building a New SCADA & OEE for a Leading Maker of Snow-Blowers

Project for: Ariens Co.

Project by: Corso Systems

Industry: Manufacturing

Corso Systems

Problem:

- Operators had to track all produced parts and scrap by hand
- Tracked data was collected into a digital format via manual data entry
- Then operators took the data and leveraged highly complex tables to service the efficiency of the work center; data was aggregated to determine overall plant efficiency
- Manual data collection from the operators was dated and needed to be addressed
- Errors from manual entry could easily be multiplied across the various translations, exposing Ariens to risk it could no longer tolerate

Corso Systems

Solution:

- New process for operators

Corso Systems

Solution:

- New process for operators
- Real-time OEE engine for analysis

Corso Systems

Solution:

- New process for operators
- Real-time OEE engine for analysis
- Information coming from PLCs reviewed and validated

Corso Systems

Solution:

- New process for operators
- Real-time OEE engine for analysis
- Information coming from PLCs reviewed and validated
- ERP connection

Corso Systems

Solution:

- New process for operators
- Real-time OEE engine for analysis
- Information coming from PLCs reviewed and validated
- ERP connection
- Sepasoft Production Model

Corso Systems

Solution:

- New process for operators
- Real-time OEE engine for analysis
- Information coming from PLCs reviewed and validated
- ERP connection
- Sepasoft Production Model
- Navigation system

Corso Systems

Project Scope:

- Tags: 3,675 device tags and 8,591 live analysis tags
- Screens: nine Perspective pages
- Clients: Unlimited, to ensure flexibility with internal personnel
- Alarms: 360 total, 3 per device
- Devices used: 116 Horner XL7 PLC (Modbus TCP Driver), 4 Bystronic Brake Presses (ByVision Bending, Onboard PCC-UA Server)
- Architectures used: Standard
- Databases used: 3 SQL Server, general/application configuration, Historian, Sepasoft MES
- Historical data logged: 7,582,382 rows and 1,680 tags

ARIENS|CO

Forming - OEE

Week of 05/03

OEE | Availability | Performance | Quality

Overviews

- OEE
- Dashboards
- Reports

Scope

- Plant 1
- Cutting
- Forming
- Welding
- Machining
- Paint
- Assembly

All Assets

Time Frame

- Day
- Week
- Custom

V010127

Forming

OEE	Availability	Performance	Quality	Parts Counted	Standard Count
59.19%	75.7 %	78.2 %	100 %	19,642	25,146

530 — OEE:100% A:100% P:100% Q:100%

540 — OEE:0% A:100% P:0% Q:100%

WC 540-0107	WC 540-0178	WC 540-0531	WC 540-0532	WC 540-0533	WC 540-0534
AIR PRSS BRAKE	2 STATION COPING MACHINE	BRAKE 1 AMADA HFE M2	BRAKE 2 AMADA HG8025	BRAKE 3 AMADA HG8025	BRAKE 4 AMADA HFE100
100 % OEE	100 % OEE	24 % OEE	164 % OEE	35 % OEE	55 % OEE
Availability 100%	Availability 100%	Availability 85%	Availability 83%	Availability 85%	Availability 62%
Performance 100%	Performance 100%	Performance 30%	Performance 199%	Performance 41%	Performance 88%
Quality 100%	Quality 100%	Quality 97%	Quality 100%	Quality 100%	Quality 100%

WC 540-0535	WC 540-0536	WC 540-0537	WC 540-0538	WC 540-0539	WC 540-0540
BRAKE 5 AMADA HFE100	BRAKE 6 AMADA HG8025	BRAKE 7 AMADA HG8025	BRAKE 8 AMADA HFE M2	BRAKE 9 TRUMPF 5085	DECK BRAKE TRUMPF 5170
47 % OEE	53 % OEE	33 % OEE	66 % OEE	0 % OEE	100 % OEE
Availability 77%	Availability 77%	Availability 80%	Availability 86%	Availability 100%	Availability 100%

ARIENS|CO

Forming-540-0532 - OEE

Week of 05/03

OEE | Availability | Performance | Quality

Overviews

- OEE
- Dashboards
- Reports

Scope

- Plant 1
- Cutting
- Forming
- Welding
- Machining
- Paint
- Assembly

Forming-540-0532

Time Frame

- Day
- Week
- Custom

V010127

BRAKE 2 AMADA HG8025 **Production - Not Staffed**

Run Qauntity	Run Scrap
92	0

MO	M03115
Part	05299300
Operation	0015
Operator	SARAH REZNICHEK

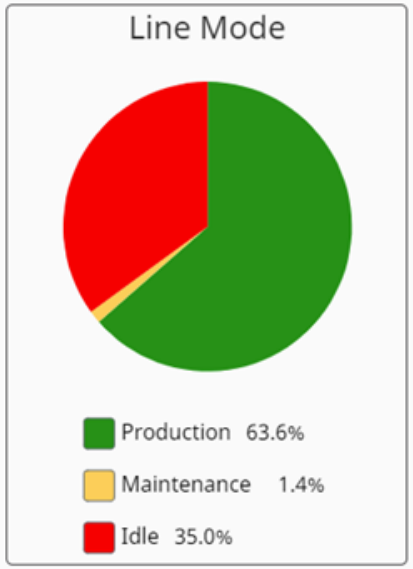
Availability	83%
Performance	144%
Quality	100%

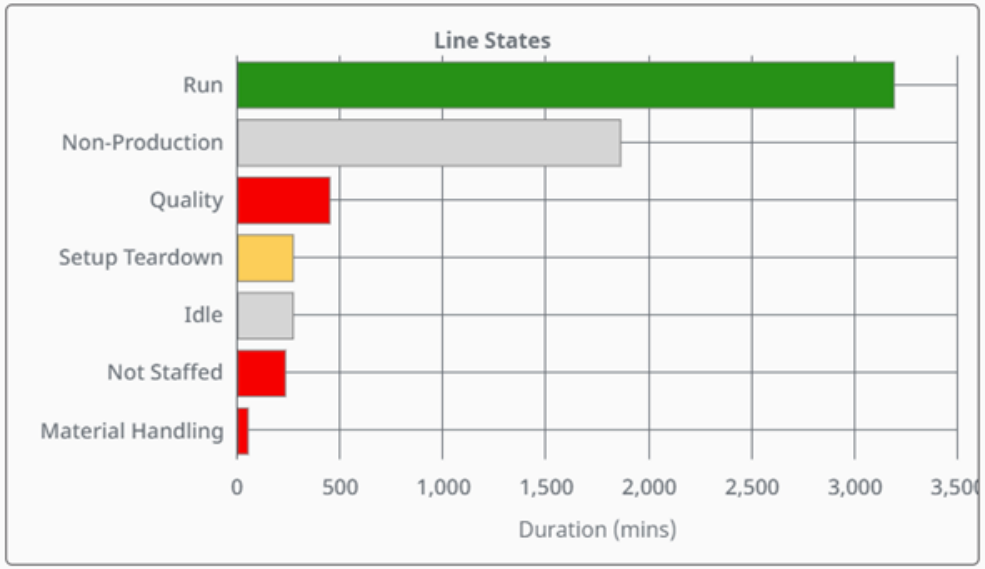
Part Numbers	10
Production Runs	38

Part Count	Std. Count
2,884	1,997

Scrap
0

Runtime	Downtime
1,993.35	412.833





Filter table...

Operator Name	Begin Time	End Time	Work Order	Product Code	Std. Rate (pcs/hr)	Parts Counted	Standard Count	Performance
PHILIP FISHER	05/02/2021 22:10:42	05/02/2021 23:53:06	M02783-0020	05299200-0020	0	76	64	118.75%
PHILIP FISHER	05/02/2021 23:55:54	05/03/2021 01:16:15	M04237-0015	05110700-0015		78	59	132.20%
PHILIP FISHER	05/03/2021 02:37:50	05/03/2021 03:49:36	M02883-0020	05287800-0020		78	85	91.76%
PHILIP FISHER	05/03/2021 03:52:44	05/03/2021 04:20:36	M04033-0020	05296200-0020		38	17	223.53%
SARAH REZNICHEK	05/03/2021 04:34:29	05/03/2021 05:38:59	M04033-0020	05296200-0020		50	24	208.33%
SARAH REZNICHEK	05/03/2021 07:57:30	05/03/2021 09:05:35	M02382-0015	04819400-0015		77	52	148.08%
SARAH REZNICHEK	05/03/2021 09:08:05	05/03/2021 10:41:47	M02783-0020	05299200-0020		58	36	161.11%
TAMMY KARNES	05/03/2021 18:44:39	05/03/2021 19:22:41	M03116-0030	05299400-0030		90	54	166.67%

25 rows

1 2

ARIENS | CO

Overviews

OEE

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Scope

Plant 1

Cutting

Forming

Welding

Machining

Paint

Assembly

All Assets

Time Frame

Day

Week

Custom

V010127

Plant 1

Week of 05/03

MY Dashboard

Edit | New | Export

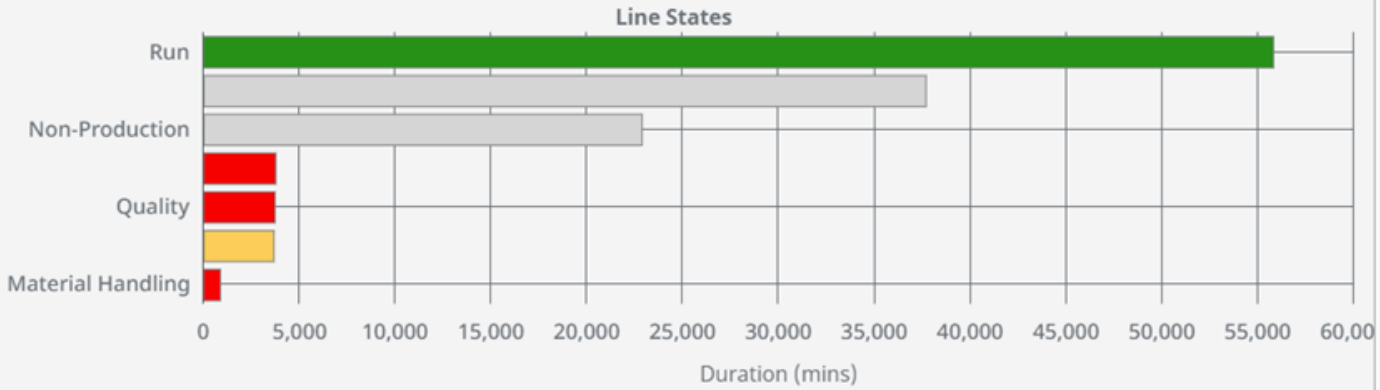
Plant 1
Line Mode

Production 1.1%
Maintenance 0.0%
Idle 98.9%

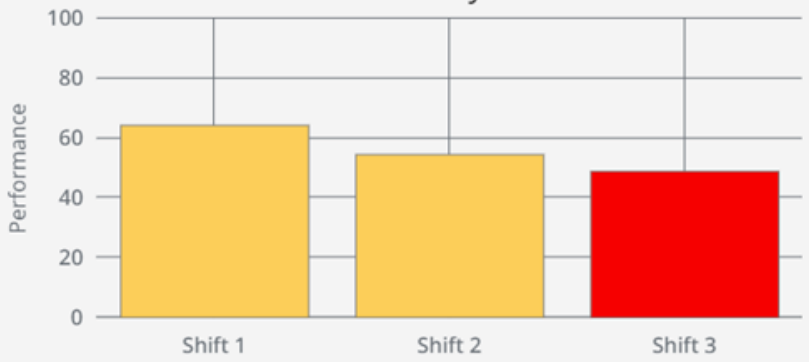
Plant 1
Line State

Uptime 82.9%
Planned Downtime 5.5%
Unplanned Downtime 11.6%

Plant 1



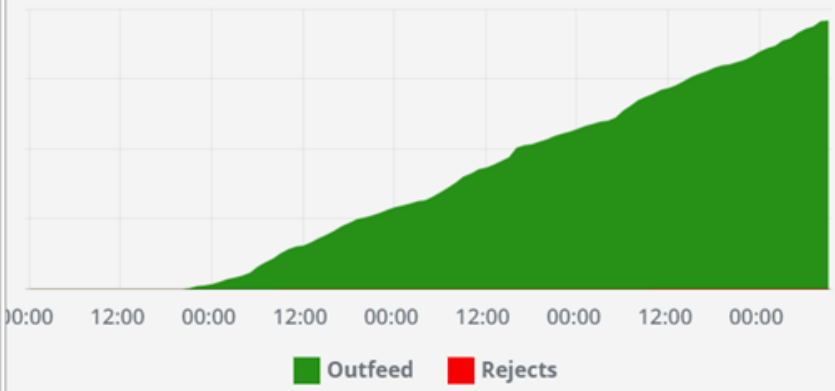
Plant 1
Performance by Shift



Plant 1
Counts

Outfeed 24,126
Scrap 30

Plant 1



ARIENS | CO

Plant 1 - OEE

Start Date: Apr 1, 2021 12:00 AM *End Date:* May 6, 2021 9:12 AM

OEE | Availability | Performance | Quality

Overviews

- **OEE**
- Dashboards
- Reports

Scope

- **Plant 1**
- Cutting
- Forming
- Welding
- Machining
- Paint
- Assembly

All Assets

Time Frame

- Day
- Week
- Custom

V010127

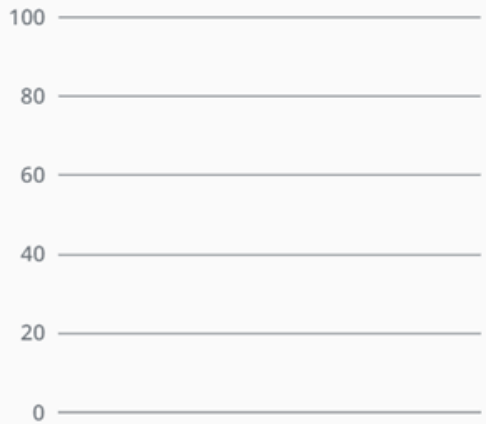
Plant 1

OEE	Availability	Performance	Quality	Parts Counted	Standard Count
61.64%	84.9 %	72.6 %	100 %	86,846	119,696

Cutting

OEE

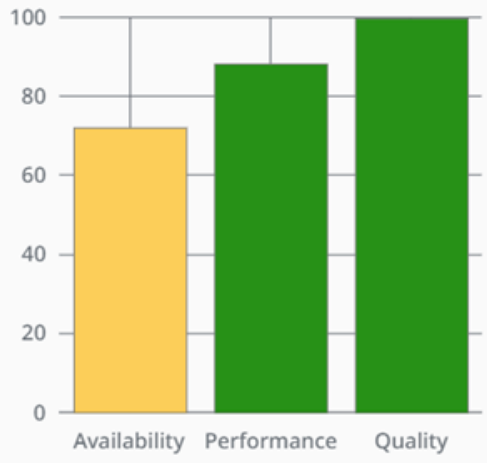
-1.0%



Forming

OEE

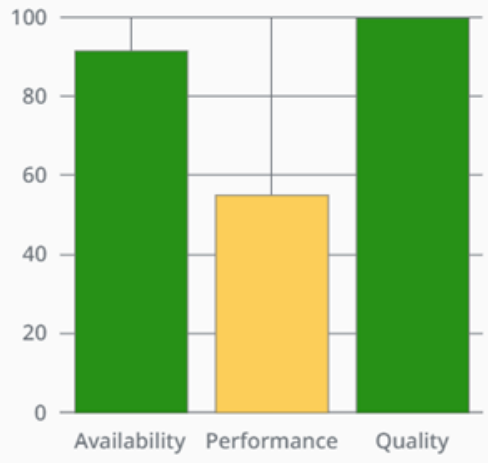
63.67%



Welding

OEE

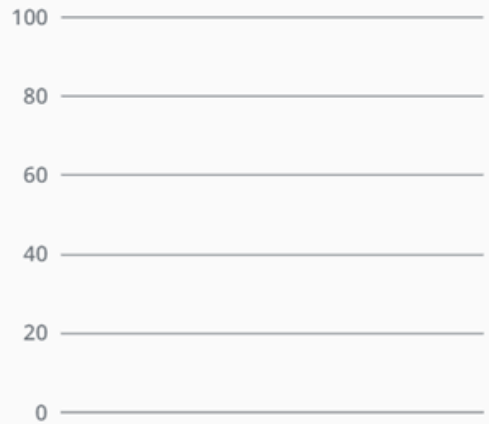
50.48%

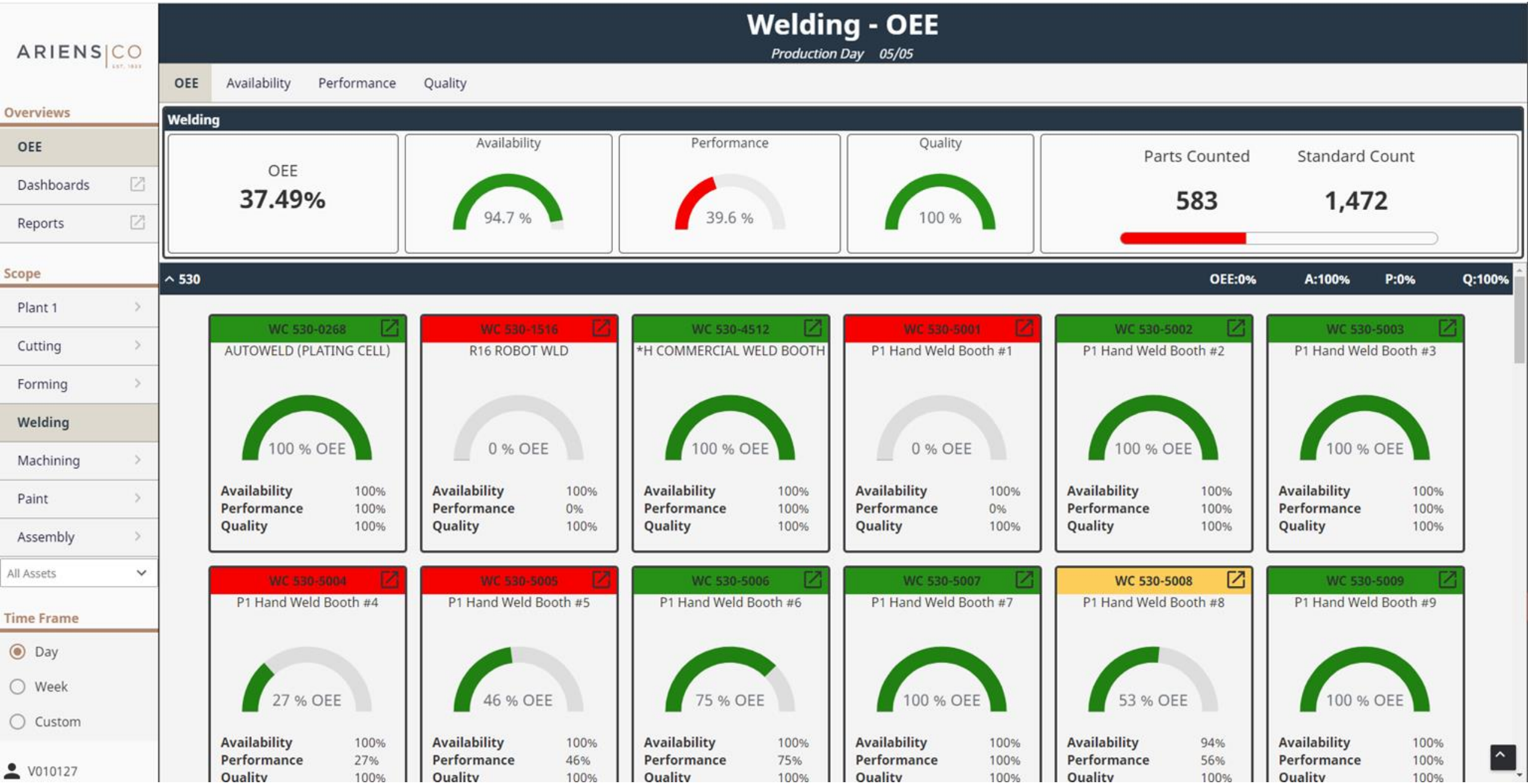


Machining

OEE

-1.0%




ARIENS|CO
Overviews
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V010127
Welding - OEE
Production Day 05/05
OEE
Availability
Performance
Quality
Welding
OEE
37.49%
Availability
94.7 %
Performance
39.6 %
Quality
100 %
Parts Counted
583
Standard Count
1,472
530
OEE:0%
A:100%
P:0%
Q:100%
WC 530-0268
AUTOWELD (PLATING CELL)
100 % OEE
Availability 100%
Performance 100%
Quality 100%
WC 530-1516
R16 ROBOT WLD
0 % OEE
Availability 100%
Performance 0%
Quality 100%
WC 530-4512
*H COMMERCIAL WELD BOOTH
100 % OEE
Availability 100%
Performance 100%
Quality 100%
WC 530-5001
P1 Hand Weld Booth #1
0 % OEE
Availability 100%
Performance 0%
Quality 100%
WC 530-5002
P1 Hand Weld Booth #2
100 % OEE
Availability 100%
Performance 100%
Quality 100%
WC 530-5003
P1 Hand Weld Booth #3
100 % OEE
Availability 100%
Performance 100%
Quality 100%
WC 530-5004
P1 Hand Weld Booth #4
27 % OEE
Availability 100%
Performance 27%
Quality 100%
WC 530-5005
P1 Hand Weld Booth #5
46 % OEE
Availability 100%
Performance 46%
Quality 100%
WC 530-5006
P1 Hand Weld Booth #6
75 % OEE
Availability 100%
Performance 75%
Quality 100%
WC 530-5007
P1 Hand Weld Booth #7
100 % OEE
Availability 100%
Performance 100%
Quality 100%
WC 530-5008
P1 Hand Weld Booth #8
53 % OEE
Availability 94%
Performance 56%
Quality 100%
WC 530-5009
P1 Hand Weld Booth #9
100 % OEE
Availability 100%
Performance 100%
Quality 100%

Corso Systems

Result:

- The project is taking a company from pen and pad to on-the-fly, real-time understanding of what is happening on the plant floor.
- The ability to see high-level overviews and drill into each line, work center, and employee enables management to take action for the good of the company at a much higher rate.
- Throughout the process, both the Ariens and Corso teams had opportunities to reflect, adjust procedures, and grow as companies and individuals.

Wrap-up: Learn More About Perspective

- **Inductive University offers Credential Courses and Elective Studies about Perspective**
- **Extensive documentation in the Ignition Online User Manual**
- **Paid training courses also available**
- **Free resources for Perspective on the Ignition Exchange**
- **Download Ignition and the Perspective Module for free at inductiveautomation.com**

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