



# AVEVA –Product Portfolio

Control & Monitoring



1 **Aveva & Schneider Merger**

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**AVEVA**

**Schneider**  
Electric

# AVEVA GROUP

A leader in Engineering, Design and Information Management



**LISTED ON THE LONDON STOCK  
EXCHANGE SINCE 1996**



**BRITAIN'S MOST ADMIRABLE  
SOFTWARE COMPANY 2017**

This marks the third time since 2014



**50 YEARS OF INNOVATION, 15% P.A.  
INVESTED IN RESEARCH & DEVELOPMENT**

With unique technology leadership and a history of many ground breaking moments:

- ▲ World's first Plant Design Management System
- ▲ World's first Plant Design System for concurrent global project execution
- ▲ Ground-breaking decision support solution



**TRUSTED BY INDUSTRY LEADERS**

Proud to be serving some of the world's leading Owner Operators, EPCs, shipbuilders and industrial conglomerates



**A GLOBAL NETWORK  
OF SOME OF THE WORLD'S LEADING TECHNOLOGY  
PARTNERS**

And global network of 1700+ colleagues, across 50 offices in 30 countries offering customers with local sales and support in all of the world's major economies



# AVEVA is TRUSTED BY 4000+

of the World's Leading Companies



**FAST, ACCURATE AND ACCESSIBLE**

## **45% TIMES FASTER**

project delivery (INITEC Energia)

## **60% reduction**

in engineering man hours for drawings production (TekFen Engineering)

## **40% TIME REDUCTION**

to create structural deliverables (Atkins)



**SUBSTANTIAL EFFICIENCY SAVINGS**

## **\$1BN SAVINGS**

in procurement in 3 years (IOC)

## **10,000 MAN-DAYS SAVED**

per year on information discovery (Petroleum Development Oman)

## **80% REDUCTION**

in design time (Burgasnefteproekt)



**TRUSTED BY INDUSTRY LEADERS**

**16 OUT OF 20 GLOBAL OWNER OPERATORS<sup>1</sup>**

**+90% TOP 20 EPCs<sup>2</sup>**

**9 OUT OF 10 SHIPYARDS<sup>3</sup>**  
worldwide are AVEVA customers

1-2. ENR Top 500, 2016

3. Clarkson, Top 16 Shipyards by order book in CGT, Feb 2016

# SCHNEIDER ELECTRIC'S INDUSTRIAL SOFTWARE BUSINESS

TRUSTED BY 16,000+ of the World's Leading Companies



TRUSTED  
ACROSS SEVERAL  
VERTICALS

19 OF THE TOP 20 PETROLEUM

22 OF THE TOP 40  
CHEMICAL

10 OF THE TOP 15  
METALS, MINING & MINERALS

23 OF THE TOP 25  
FOOD & BEVERAGE

companies are Schneider Electric's  
industrial software business customers



IMPROVING  
PROFITABILITY,  
RETURN ON CAPITAL

**FROM 7HRS DOWN TO 4MIN**

Shift to Cloud increasing the ability to accelerate  
purchasing decision (BP)

**50% REDUCTION IN  
ENERGY COST**

through optimised operations with better  
monitor and control solutions (Waterforce)

**\$12.2M IN ANNUAL SAVINGS**

with the optimisation of financial metrics and  
operating variables (Reliance)

**20% EFFICIENCY INCREASE**

Optimising end-to-end demand chain  
from pit to port. (Roy Hill)



OPERATIONAL  
EXCELLENCE AND  
EXPERTISE

**100,000**

Customer Sites Deployed

**200+**

Refineries

**600+**

Food Processing Plants

**10 Trillion**

Industrial transactions processed per day

**12,000 TB**

Storing and managing of information  
per year

# THE POWER OF TWO

## coming together as ONE

### AVEVA GROUP

The leading global provider of Engineering, Design and Information Management software

**Offerings in:**

- ▲ Integrated engineering and design
- ▲ Asset Life Cycle Information Management
- ▲ Enterprise Resource Management
- ▲ Construction Management
- ▲ Marine, Fabrication and BIM solutions
- ▲ Procurement Management

### SCHNEIDER ELECTRIC'S INDUSTRIAL SOFTWARE BUSINESS

The leading global provider of industrial software and services for operational efficiency and asset reliability

**Offerings in:**

- ▲ Engineering
- ▲ Planning & Scheduling
- ▲ Operations and Optimisation
- ▲ Asset Performance Management
- ▲ Monitoring and Control

AVEVA

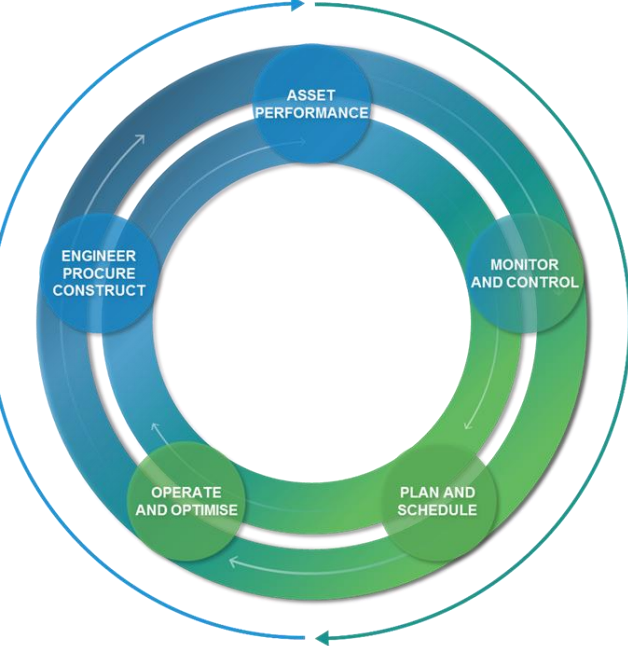
Schneider  
Electric

# Schneider Electric & Aveva Alliance

Partnerships and ecosystems are the foundation upon which we have built our business

## Asset Life Cycle

Improved Return On Capital

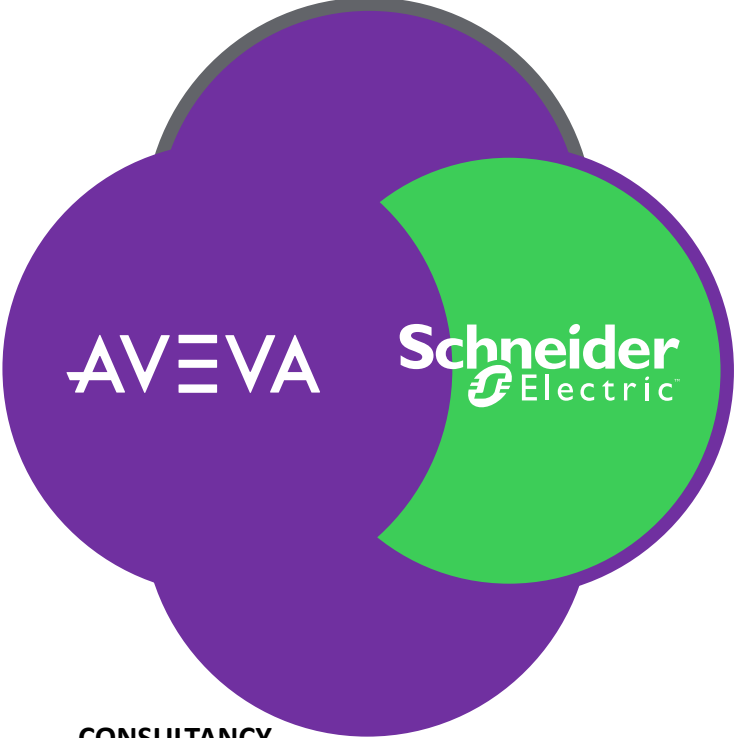


## Operations Life Cycle

Improve Profitability

**SALES** Enablement of existing sales

**DELIVERY**  
Delivers turn key solutions and ongoing support to end users



**TECHNOLOGY**  
Co-development of hardware and/or software with AVEVA technology

**CONSULTANCY**  
Advise customers on industrial solutions that include AVEVA offering



# EcoStruxure Plant IIoT with AVEVA SW in the Apps Layer

EcoStruxure Plant: Our IIoT architecture that maximizes the value of data

EcoStruxure Plant is our **IIoT-enabled open and interoperable system architecture** that optimizes the entire **performance** of an industrial enterprise. Across three levels (connected products, edge control, and apps, analytics, & services) and with access to the cloud and end-to-end cybersecurity, it is a complete solution that covers the breadth and depth of industrial markets



**TAKE ACTION**  
Drive action through real-time information and business logic

**ANALYZE**  
Convert data into meaningful insights through analytics

**COLLECT**  
Capture critical data at every level, from sensor to cloud

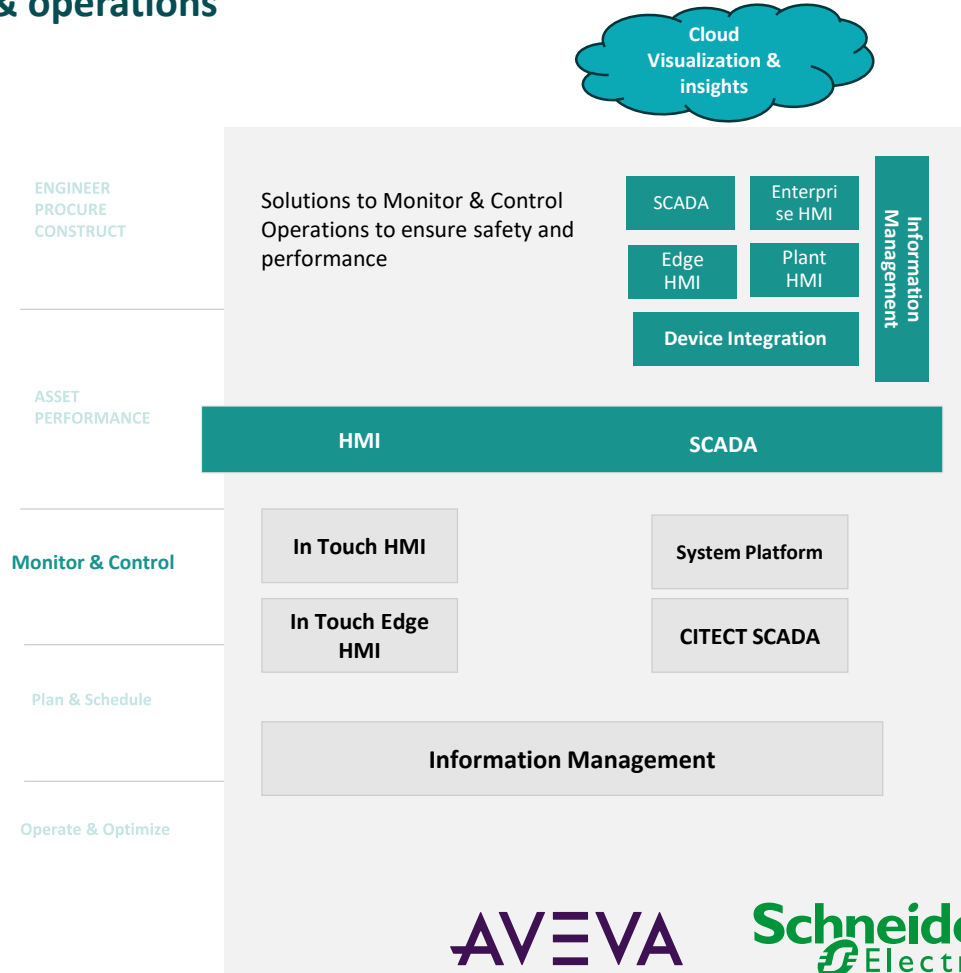
**CONNECT**  
everything from shop floor to top floor



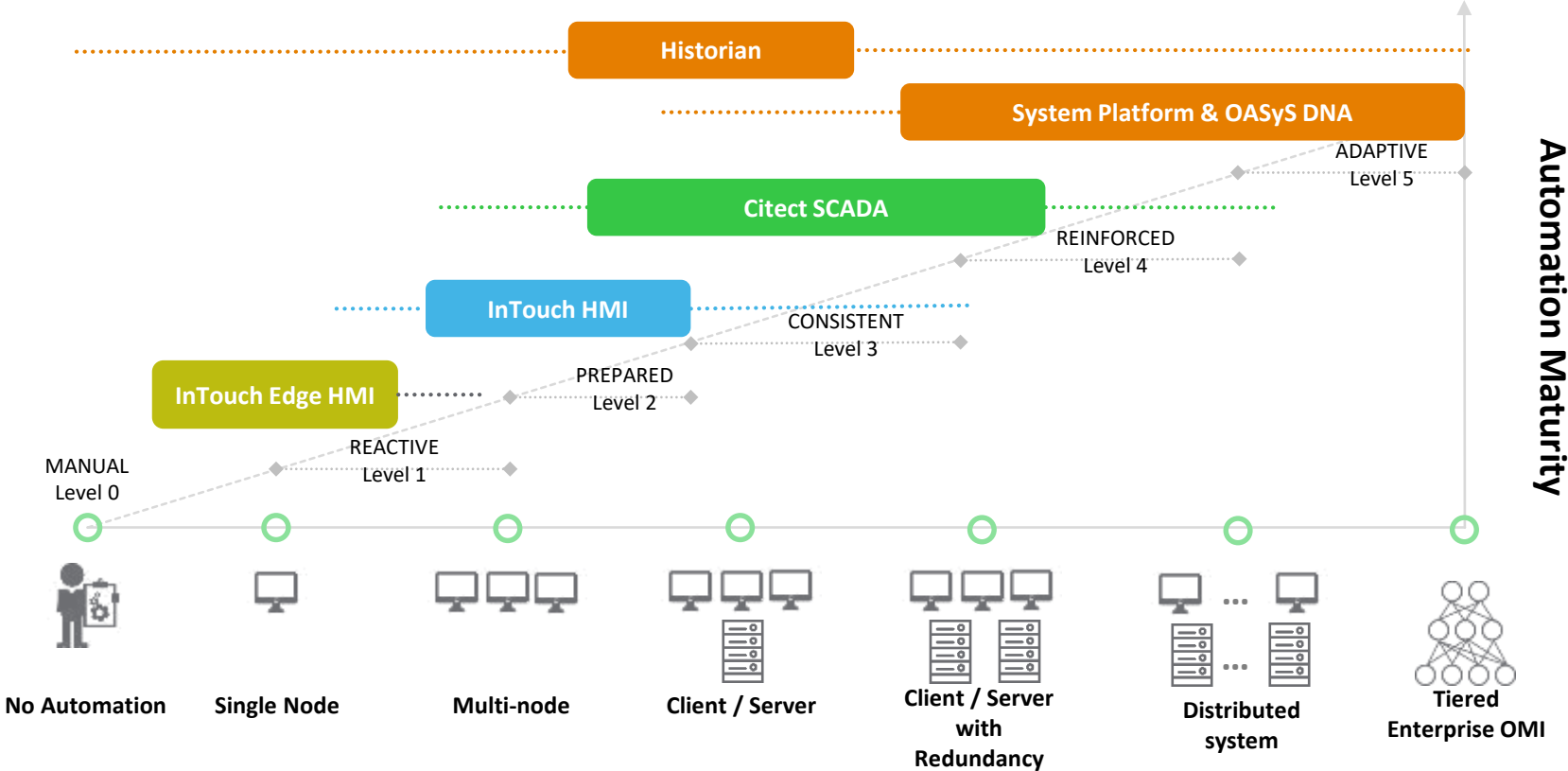


# Monitor & Control –Portfolio Overview

Monitor & Control operations to ensure safety & operations



# AVEVA HMI SCADA Portfolio Positioning



# Monitor & Control (HMI SCADA OMI )

Current Positioning-Scope of the project, Functionality & Scale

Software License ONLY	HMI SCADA OMI	Scope	Functionality	Scale
		A list of specific project goals, deliverables & tasks, where cost & timeframes are variables	A set of functions or capabilities required by the customer	System capacity (tags/points)
	System Platform	Standards-driven, object-oriented implementations, where distributed scalability, advanced applications (MES, Batch, Workflow, etc.), graphics & visualization are required	<ul style="list-style-type: none"> <li>• Medium to large enterprise operations, with multi-site level control environments, including common control rooms</li> <li>• Complex network architectures &amp;</li> <li>• Operational standards-driven</li> <li>• Advanced graphics &amp; visualization capabilities</li> </ul>	500 – 2,000,000+
	Citect SCADA	Flexible & scalable SCADA for bespoke implementations where out of the box redundancy required	<ul style="list-style-type: none"> <li>• Site &amp; multi-site level control environments</li> <li>• Distributed architectures, with scalability through clustering</li> <li>• Complex scripting for ultimate flexibility</li> <li>• Bump-less n-level device redundancy</li> </ul>	75 – 500,000+
	InTouch HMI	Single to 5-node HMI with legendary ease-of-use	<ul style="list-style-type: none"> <li>• Small &amp; medium size facilities/plants</li> <li>• Site level control environments</li> </ul>	100 – 60,000
	In Touch Edge HMI	Off –the- shelf, branded HMI for Machine Builders & flexible applications	<ul style="list-style-type: none"> <li>• Embedded Panels (pump stations ,network operations ,machines )</li> <li>• Ideal for Machine Builder</li> <li>* Best fit for 100-3000 Tags application</li> </ul>	100 – 60,000





The background features a complex, abstract pattern of thin, flowing lines in shades of purple and blue. These lines curve and swirl across the frame, creating a sense of motion and depth. Interspersed among the lines are numerous small, bright particles or dots, some of which appear to be glowing or sparkling. The overall effect is reminiscent of a digital or data visualization, possibly representing a network or a dynamic system. The colors transition from a deep purple on the left to a lighter, more ethereal blue on the right.

# InTouch Edge HMI

# The Vision



*An open-standard based architecture, designed from the ground up with security in mind.*

# Mobility



## Studio Mobile Access (SMA) Thin Clients

Platforms: Agnostic

Host: Web Browser agnostic or app

Technology: HTML5



## Secure Viewer Thin Clients

Platforms: Windows

Host: Secure Viewer (executable)

Technology: ActiveX



## Web Thin Clients

Platforms: Windows

Host: Web Browser (Internet Explorer)

Technology: ActiveX



# Easy Migration

Rockwell®  
FactoryTalk™ ME/SE



Rockwell®  
PanelBuilder32



EATON®  
PanelMate



Wonderware  
InTouch Edge HMI



Cost-effective method to modernize leveraging past engineering investments





# Investment Protection and ROI

100% Compatibility with applications designed in previous versions

Evolve protecting your investment!

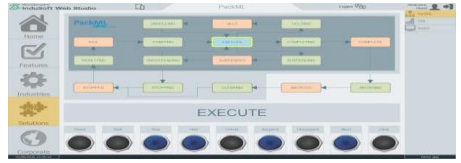
**1997**  
**InTouch Edge HMI**  
 Windows NT  
 Windows 95  
 Windows CE



**2019**  
**InTouch Edge HMI v8.1**  
 Windows 10 / 8 / 7  
 Windows Server 2016 / 2012 Windows 10 IoT Enterprise  
 Windows Embedded Standard 7 / 8  
 Windows Embedded Compact 7 / 6 / 5 Linux

## Templates

**PackML**



“PackML, which stands for Packaging Machine Language, defines a common approach, or machine language, for automated machines. The primary goals are to encourage a common "look and feel" across a plant floor and to enable and encourage industry innovation.”

**OEE**



“Overall equipment effectiveness (OEE) is a concept utilized in a lean manufacturing implementation. OEE is becoming a commonly utilized maintenance metric within lean organizations. The high-level formula for the lean manufacturing OEE is:

$$OEE = Availability \times Productivity \times Quality.”$$

**ANDON**



“Andon is a manufacturing term referring to a system to notify management, maintenance, and other workers of a quality or process problem. The center piece is a signboard incorporating signal lights to indicate which workstation has the problem.”



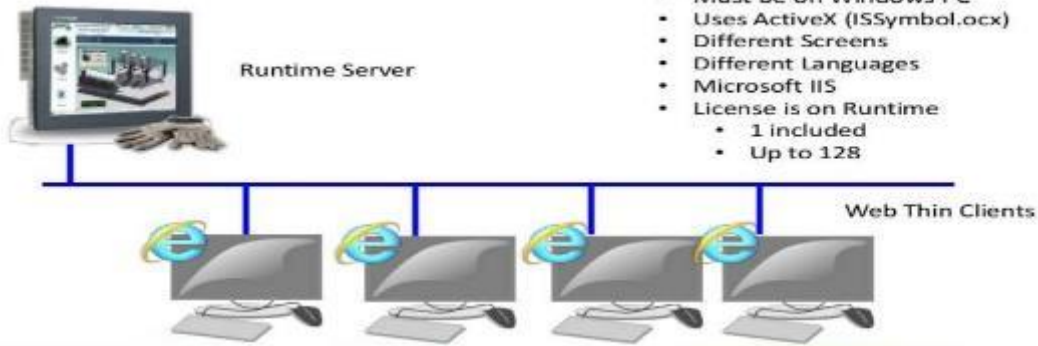
-Wikipedia



# Web Thin Clients / Secure Viewer

A thin client is a lightweight computer that has been optimized for establishing a remote connection with a server-based computing environment. The server does most of the work, which can include launching software programs, performing calculations, and storing data

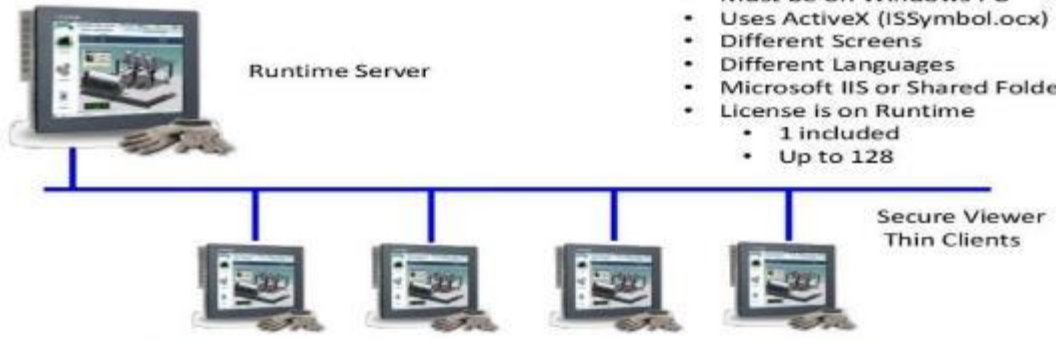
## Web Thin Client



- No Software to install
- Uses Internet Explorer ONLY
- Must be on Windows PC
- Uses ActiveX (ISSymbol.ocx)
- Different Screens
- Different Languages
- Microsoft IIS
- License is on Runtime
  - 1 included
  - Up to 128

- Office Environment
- Remote
- No Need or want to install Software

## Secure Viewer



- Small Software to install
- ~~Uses Internet Explorer ONLY~~
- Must be on Windows PC
- Uses ActiveX (ISSymbol.ocx)
- Different Screens
- Different Languages
- Microsoft IIS or Shared Folder
- License is on Runtime
  - 1 included
  - Up to 128

- Large/Long Machine or Process
- Behaves as another HMI
- As ANDON or production Monitor



# Typical Architectures

Bottom-up Approach

Cloud-Based



- Scalable : From edge to the cloud
- Portable : Access different platforms
- Mobile : Context based information on any device
- Secure : Built from the ground up with security principles
- Productive : Seamless Integration
- Sustainable : Template driven configuration
- Interoperable : Open architecture & standards
- Extensible : APIs and Partner –driven Ecosystems
- Reliable : Modern Design with mature architecture



On Premise  
Enterprise Level

On  
Premise  
Asset  
Level



...



# Licensing

**The Power of Choice:** Support for all features in any product type always meets your needs.

Different product types to fit your budget.



IDE and/or  
FULL RUNTIME



## License Levels

InTouch Edge HMI UNLIMITED

InTouch Edge HMI 60K tags

InTouch Edge HMI 3K tags

InTouch Edge HMI 1K tags

InTouch Edge HMI 500 tags



EmbeddedView, CEView, or  
IoTView



## License Levels

InTouch Edge HMI 3K tags

InTouch Edge HMI 2K tags

InTouch Edge HMI 1K tags

InTouch Edge HMI 500 tags

InTouch Edge HMI 100 tags



The background features a complex, abstract pattern of thin, flowing lines in shades of purple and blue. These lines curve and swirl across the frame, creating a sense of motion and depth. Interspersed among the lines are numerous small, bright particles or dots, some of which appear to have a starburst or lens flare effect, adding a dynamic and futuristic feel to the overall composition.

# **AVEVA InTouch HMI**

# AVEVA InTouch HMI (formerly Wonderware)

## Product Introduction

InTouch is an easy to use scalable human **machine** interface packed with features that enable you to quickly create standardized, reusable visualization applications and then deploy them across your entire enterprise without having to leave your office.

## When it is Used

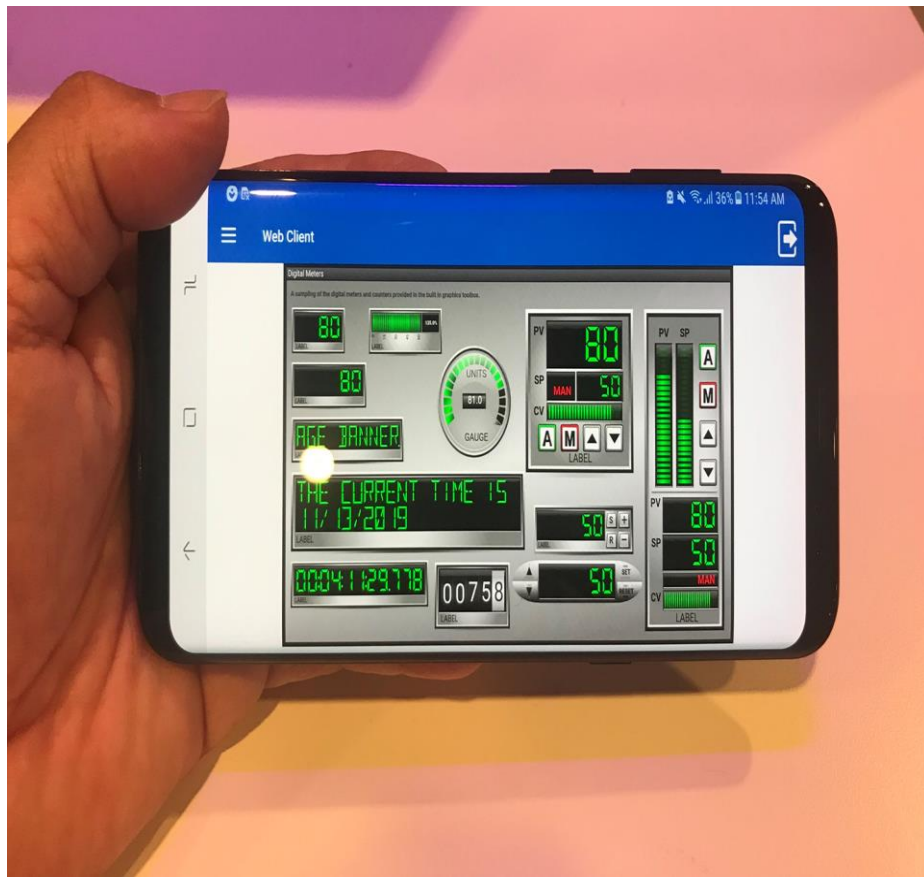
- Industrial companies uses it to visualize & control their production processes
- Production Line Supervision - Need to make better decisions from real-time production process data.
- Enables engineers to build compelling, intuitive, secure, reliable and maintainable HMI applications while reducing application development costs

## How it is Used

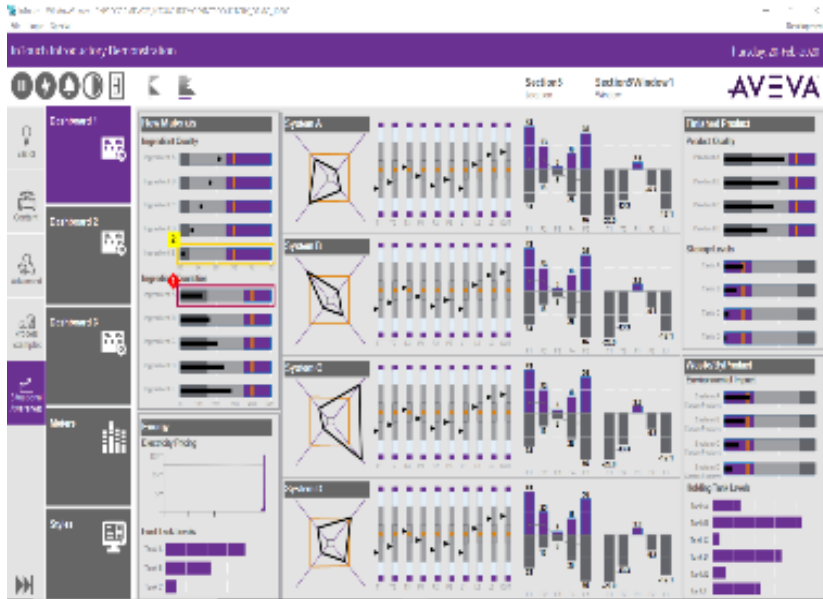
- Presents a visual representation of a process
- Enables operations personnel to be alerted to abnormal situations
- Records changes in the process
- Shows how the process has changed over time

## Results Achieved

- Make better decisions and maximize Situational Awareness
- Capture expert knowledge and drive for maximum performance
- Faster Operator response times
- Lower costs
- Reduce risk and stay secure
- Securely access systems from any smart device, any time, anywhere



# AVEVA InTouch HMI Key Features



Integrated Product Portfolio & Legendary Ease Of use



HTML5 HMI enabled web-browser support for remote or mobile staff with identical experience as local Operators .



Powerful Industrial Graphics: focus on the presentation of real time information and inherently handle data, quality, security and status.



Out of box library, HMI content with Situational Awareness Library - graphical symbols, wizards, templates, elements providing rich user experience

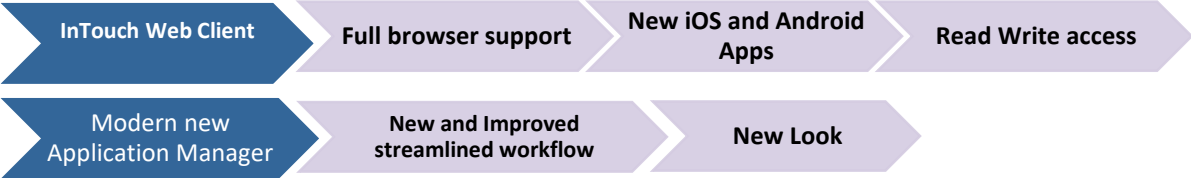
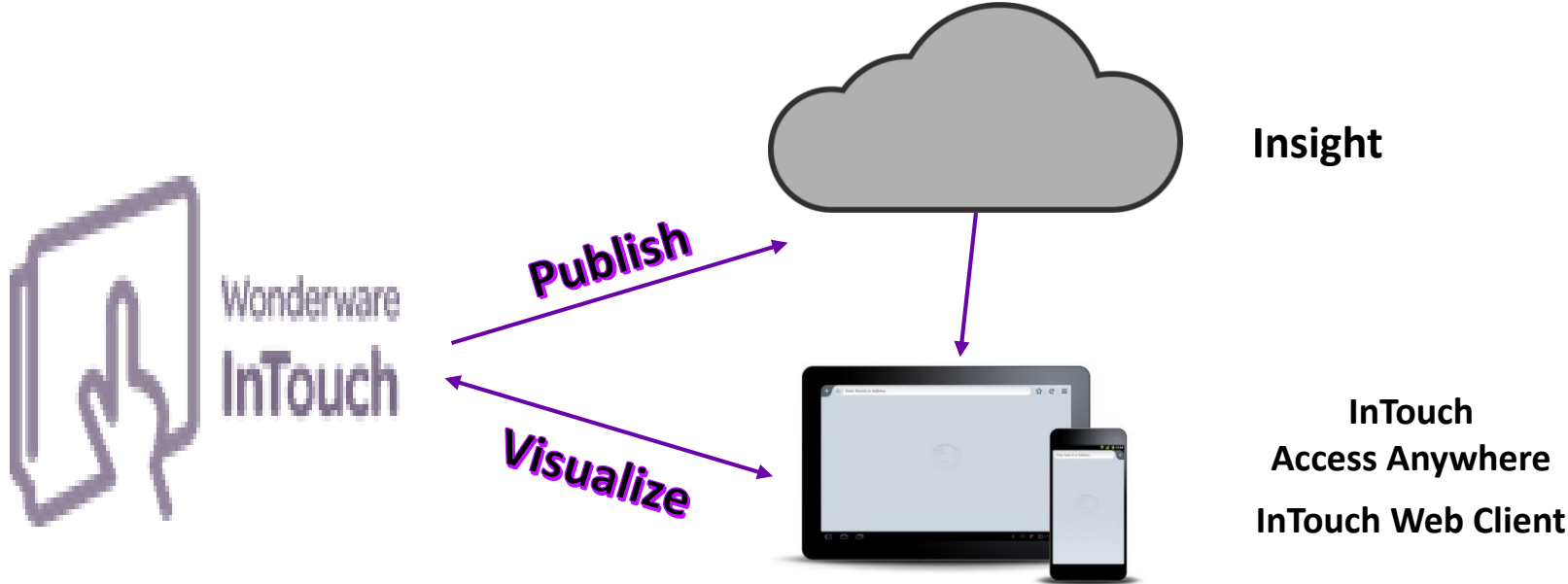


Connect to Anything with unparalleled openness



Connect to Anything with unparalleled openness

# Extending the Reach – Web & Cloud




The background features a complex, abstract pattern of thin, wavy lines in shades of purple and blue. These lines flow across the frame, creating a sense of motion and depth. Interspersed among the lines are numerous small, bright, glowing particles that resemble stars or data points, adding a dynamic and futuristic feel to the overall composition.

**Citect SCADA**


# CITECT SCADA


A world leading industrial automation software specialist for over 30 years

 **1985-87** Citect for DOS


 **1990-92** Citect for Windows


 **1994-97** True Colour support. International market expansion (Europe, US & China).  
Company publicly listed on Australian Stock Exchange.

 **2001-05** Process Analyst making it easier for operators to analyse disturbances. Further market expansion (Germany, UK, Africa, France, SE Asia, Japan, Korea, Sth America, India & Middle East)

 **2006** Web Client to access data from anywhere. Clustering for unparalleled scalability. Windows integrated security to protect your assets.

Acquisition by Schneider Electric

 **2010-13** Online changes for uninterrupted availability. Scheduler to optimize your process for energy costs. Equipment objects to standardize your plant design and reduce engineering costs.

 **2015-18** Provided blistering performance and unlock more operational value via Wonderware portfolio connectivity. Brand consolidation to Citect SCADA; revolutionized engineering with Citect Studio, Centralised Deployment and Topology. Modernized operations with Workspace, Situational Awareness library and native Alarm Management capabilities. Merger of Schneider Electric Software Business into AVEVA!







# Why Citect SCADA

Renowned for its reliability & flexibility, and used in a wide range of industries, **Citect SCADA** enables you to increase your return on assets by delivering highly scalable control & monitoring systems to reduce operating costs, improve productivity and product quality.



## Flexibility

Flexible architecture...



## Scalability

Scalable architecture...



## Reliability

Reliable architecture, with multi-level redundancy baked in...

The **Citect SCADA** family of partners are key to the success of our customers. Our network of Distributors & System Integrators can help with your project needs, and with the backing of **Schneider Electric**, we can assist you with software, services, and of course, PLCs & other automation hardware requirements.



## Certified Partners

Certified partners, System Integrators, Distributors, and more...



## Worldwide Network

Global network of distributors & partners....

**AVEVA**

**Schneider**  
Electric

# WHY CITECT SCADA

30 Years Young, 30,000 HAPPY Customers and 1 Million + Licenses world wide

**Citect SCADA** is one of the World's leading industrial automation software platforms, with over 30 years of industrial automation expertise & more than 30,000 happy customers across all market segments.



## 30 Years Young

Proud 30-year history...



## 30,000 Happy Customers (and counting)

30,000+ happy customers are using Citect SCADA across various industries

Flexibility & scalability have always been at the heart of the **Citect SCADA** platform, which has led to **Citect SCADA** being used in a wide range of industries.

### Infrastructure

From airports, transportation & tunnels, to water & waste water plants, electrical substations, or data centers!

### Building & Facility Mgmt

From small buildings to large facilities, with integrated scheduling for hassle-free building management!

### Plant Operations

Whether a small HMI or a fully distributed SCADA application, Citect SCADA has your plant needs covered!

### Mining, Metals & Minerals

Most of the World's top 10 mining organizations trust Citect SCADA!

### Power & Utilities

From Solar or Wind applications through to full Substation Automation!

# CITECT SCADA Features

## Extensive Scalability

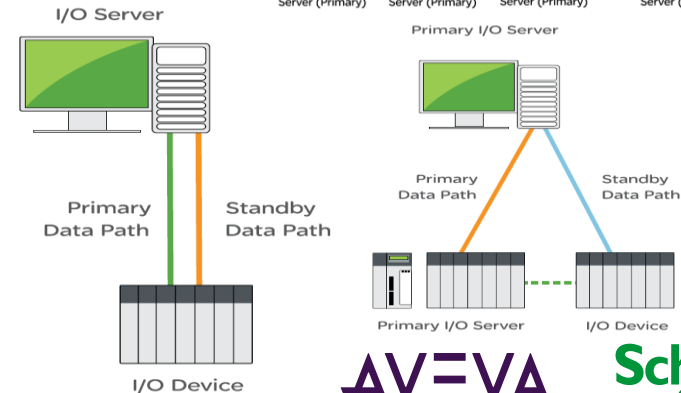
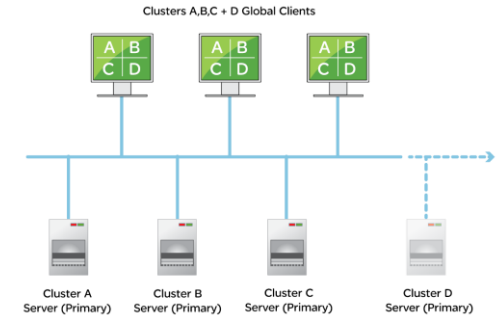
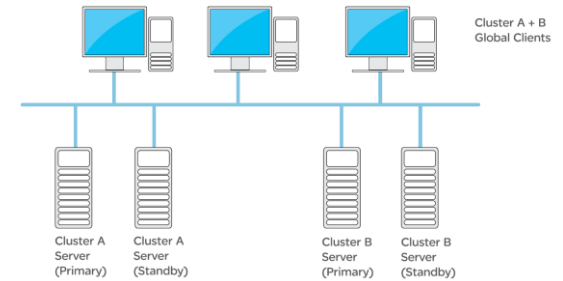
- Small (75 I/O) to Large (500,000+ I/O)
- Centralised or distributed system processing
- Individual local site view, and “enterprise” global clients
- Unify any number of control systems into a single “clustered” system

- True client-server architecture
- Global Clients for central access :Control Clients ,View-only Clients
- Floating Client Licenses

## Robust Reliability

- Redundancy provides fault tolerance throughout the system
  - I/O device redundancy with hot standby configuration
  - Multiple communication paths for each I/O device
  - I/O device data path redundancy
  - Redundant LAN using multiple networks
  - File server redundancy
  - Task redundancy across multiple computers

Clustering provides multiple redundant architectures



# CITECT SCADA Features

## Comprehensive Connectivity

More than **150 native drivers**

Wide range of PLC/PAC/RTU vendors, and Industry Standard protocols

SE, Rockwell, GE, Siemens

OPC-UA, BACNET, IEC61850, MODBUS, DNP3, IEC60870, SNMP...

### Open Connectivity

OPC Client and Server

OLE-DB

ODBC Client and Server

Citect API

ActiveX

## Online Change Management

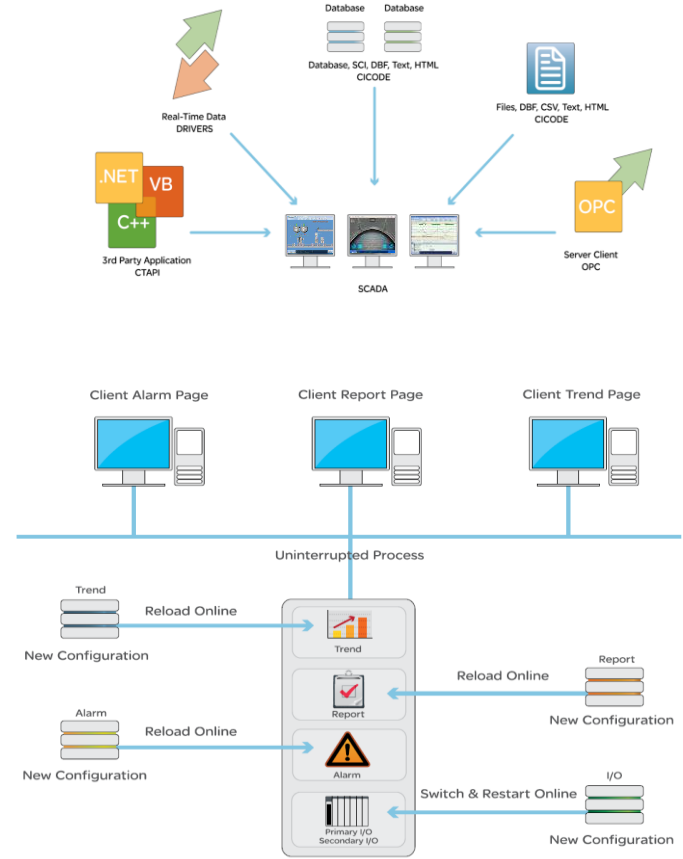
Make changes without interrupting operations or data gathering

From single PC to redundant system

Add/remove tags without taking servers offline

Reload new server configurations on demand

Add new servers online too!



# CITECT SCADA Features

## Remote Access Capabilities

Citect Anywhere is an extension that provides access to Citect SCADA via HTML5 compliant web browsers.

Citect Anywhere provides secure access to your process anywhere, anytime, from any device with full functionality!



## Central Project Configuration

### Enhanced project management

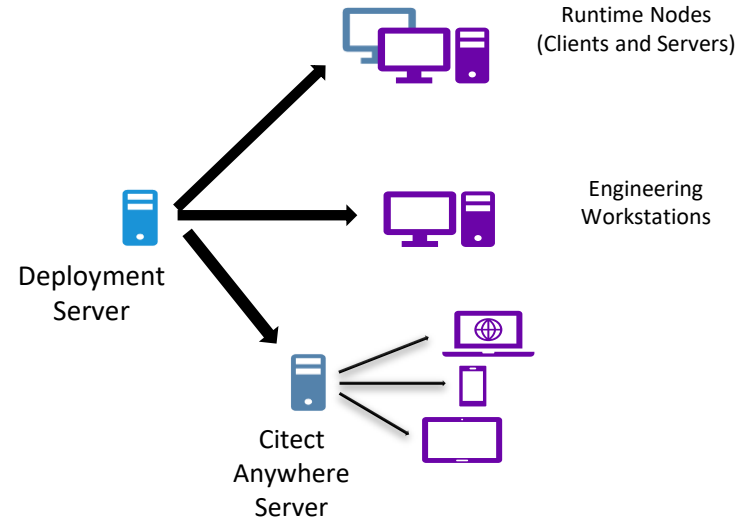
- Controlled transfer of project changes to servers & clients
- Native version-control with local & remote rollback
- Delta-only transfer (great for WAN communications!)

### Security built-in

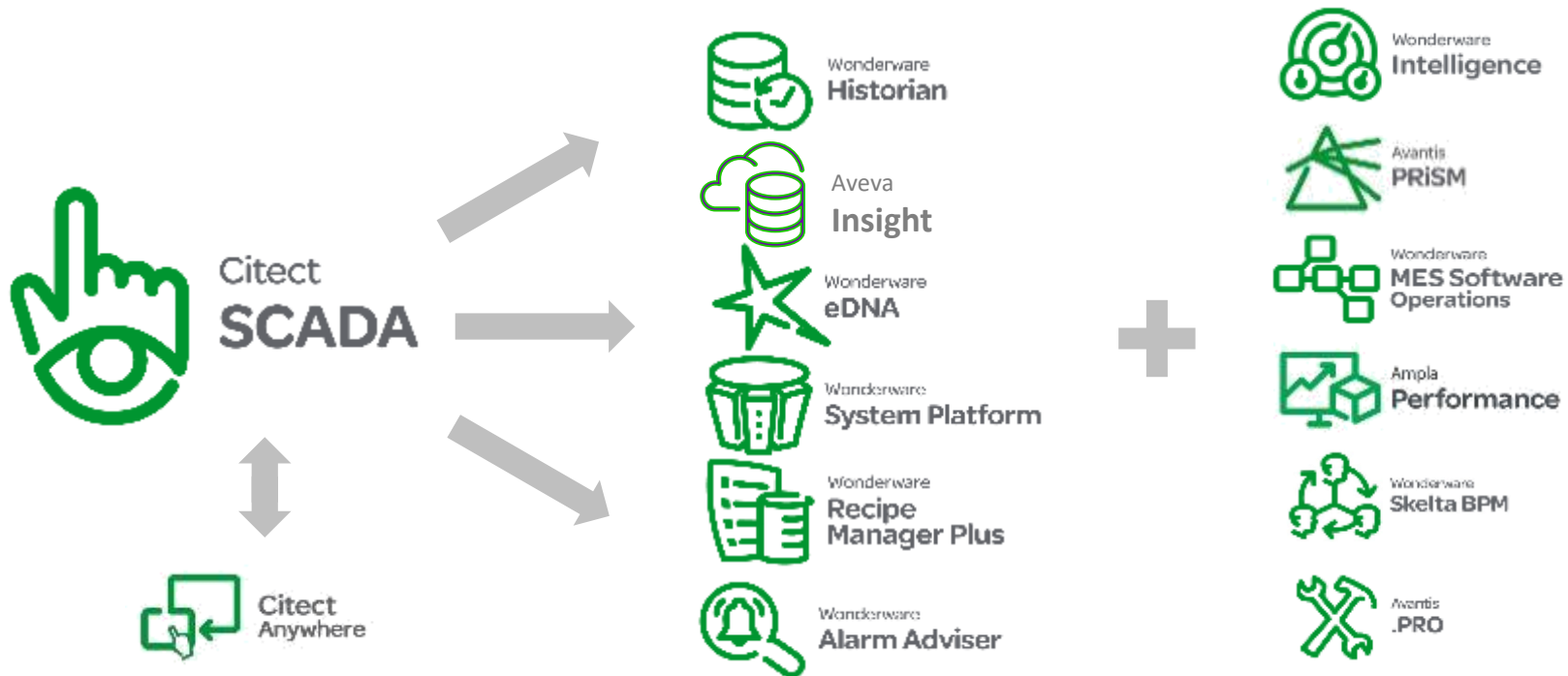
- Using HTTPS between Citect SCADA nodes & Deployment server
- Role based: Admin, Deploy, Upload, Read-Only

### User-friendly notification for operators

- Force, Prompt & Notify



# Integration with the broadest Industrial Software Portfolio



AVEVA

Schneider  
Electric



# CITECT SCADA Licenses

## Hardware & Software keys

Part Reference	Description
CT109923	CT Box with USB key
CT109924	CT Software key

## Lite License (CT3111XX) No Networking, No connectivity

Part Reference	Description
CT311156	Citect Lite, 100 Points
CT311111	Citect Lite, 150 Points
CT311127	Citect Lite, 300 Points
CT311159	Citect Lite, 600 Points
CT311150	Citect Lite, 1200 Points

## Server License (CT1011XX)

75 Points , 150 Points ,500 Points ,1500 Points,5000 Points ,15000 Points ,50000 Points , Unlimited Points

## Control Clients /WEB Clients (CT1020XX)

75 Points , 150 Points ,500 Points ,1500 Points,5000 Points ,15000 Points ,50000 Points , Unlimited Points , Citect Control Client Redundant , Citect Anywhere 5Users

## View Only Clients (CT1030XX)

View-only Client, Unlimited points , View-only Client Redundant , View-only Clients, 250 simultaneous connection ,View-only Clients Redundant, 250 simultaneous

## Point Count Expansion

Full Server Point Expansion , Lite Point Expansion , Lite Server to Full Server , Control/Web Control Client

## License Transfer Reprogramming

## Version Upgrade & Customer First



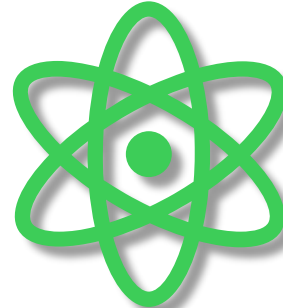
## Cost of Engineering



Reduce engineering costs by 50+%

Lower customers' overall system costs

## Real-time Insights



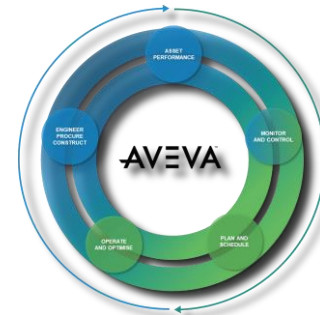
Provide insights and decision support to operators to assist with real-time system management

## Tailored Experiences



Tailor operator experiences to allow operators to do what they need to from wherever they are, on a device of their choice

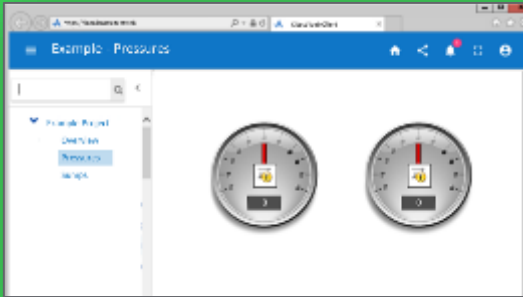
## Portfolio Compatibility



Align with AVEVA's Industrial Software Platform to provide additional customer value and ensure customer continuity

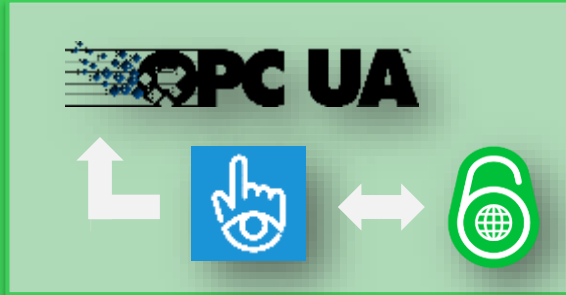
# Citect SCADA 2020

Coming soon...



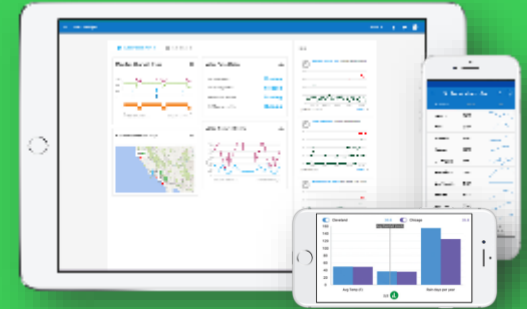
## Native HTML5 Graphics for Web/Mobile

- Extend your system access with support for web/mobility through native HTML5 graphics
- Targeted graphics for mobile users, leveraging the comprehensive library of symbols out of the box



## IPv6, OPC-UA Server

- Seamlessly extend your system
- OPC-UA Server capability to make your data accessible to 3<sup>rd</sup> party systems
- Communicate with IPv6 network devices
- Comply with latest network standards



## Process Anomaly Notifications

- Further benefit from the increasing analytics capabilities of AVEVA Insight, by getting notifications of potential anomalies within your Citect SCADA displays
- Receive alarm notifications from potential process anomalies within Citect SCADA

# Citect SCADA – Key Competitors

Company Name	Product(s)
Siemens	<ul style="list-style-type: none"> <li>• WinCC (TIA Portal) – for configuring SIMATIC operator devices</li> <li>• WinCC – for “high complexity” SCADA applications</li> <li>• WinCC-OA (Open Architecture) – addresses high customer specific adaptation requirements and specialised functions</li> </ul>
Rockwell Automation	<ul style="list-style-type: none"> <li>• FactoryTalk View Site Edition – Next Gen HMI</li> <li>• FactoryTalk View Machine Edition – Machine version of the above</li> <li>• FactoryTalk ViewPoint – web client solution for FactoryTalk SE &amp; ME</li> <li>• RSVIEW32 – Legacy HMI software</li> </ul>
Inductive Automation	<ul style="list-style-type: none"> <li>• Ignition</li> </ul>
ICONICS	<ul style="list-style-type: none"> <li>• GENESIS64</li> </ul>
General Electric (GE)	<ul style="list-style-type: none"> <li>• CIMPLICITY – client-server based visualization and control, “real-time visibility for smart operators”</li> <li>• iFIX – applications ranging from common HMI, as simple as manual data entry and validation, to complex SCADA</li> </ul>



\* Positioning against competitor



The background features a dark, gradient purple and blue color scheme. It is filled with intricate, glowing patterns of thin, curved lines and small, bright particles that create a sense of motion and depth, resembling a digital or data-driven environment.

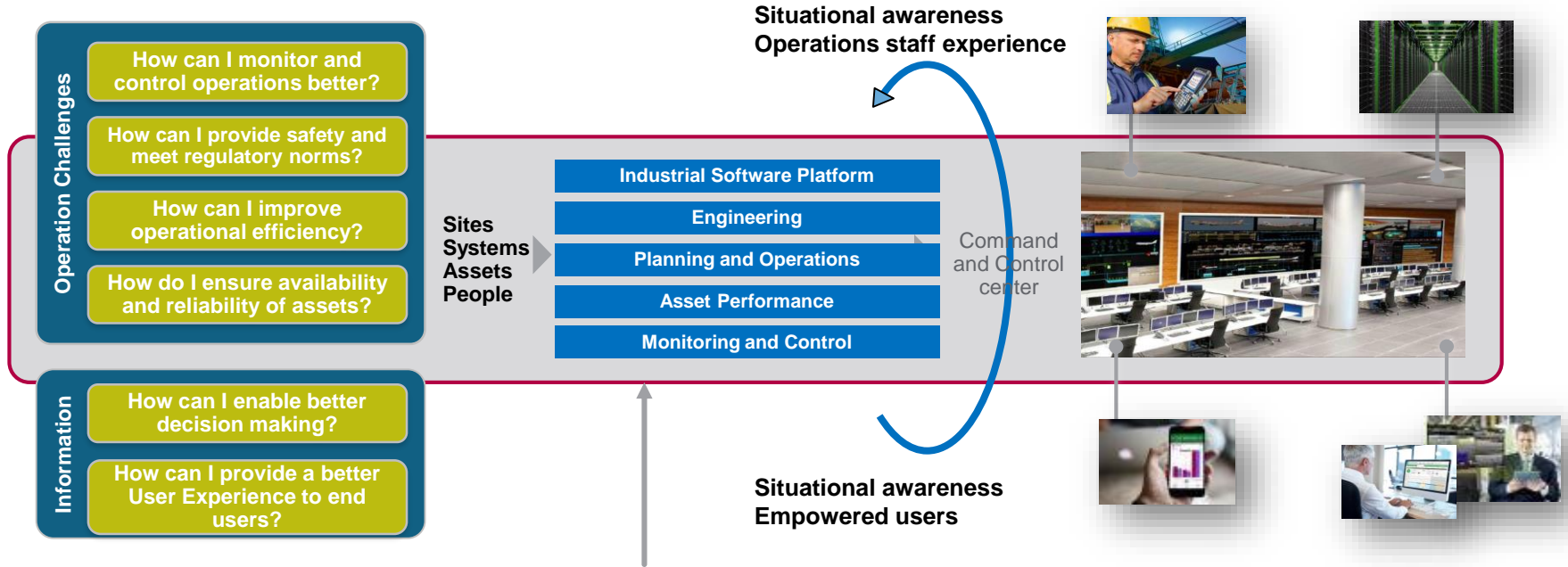
# **AVEVA Wonderware System Platform**





# Typical solution map

## Integrated Operations center: Digitizing the operational and users experience



Includes next generation capabilities: Enterprise level integration, HTML 5 support, workflow and designed for IT/OT convergence, and data driven display generation with plug-and-play applications

# AVEVA's Platform approach for Connected Operations

**Profitability** of organisation by reducing waste and energy consumed

**Efficiency** of operations; visibility of operations activities anywhere

**Asset Integrity** and time I spend during inspection rounds

**Accurate update access to Engineering P&ID, equipment data**

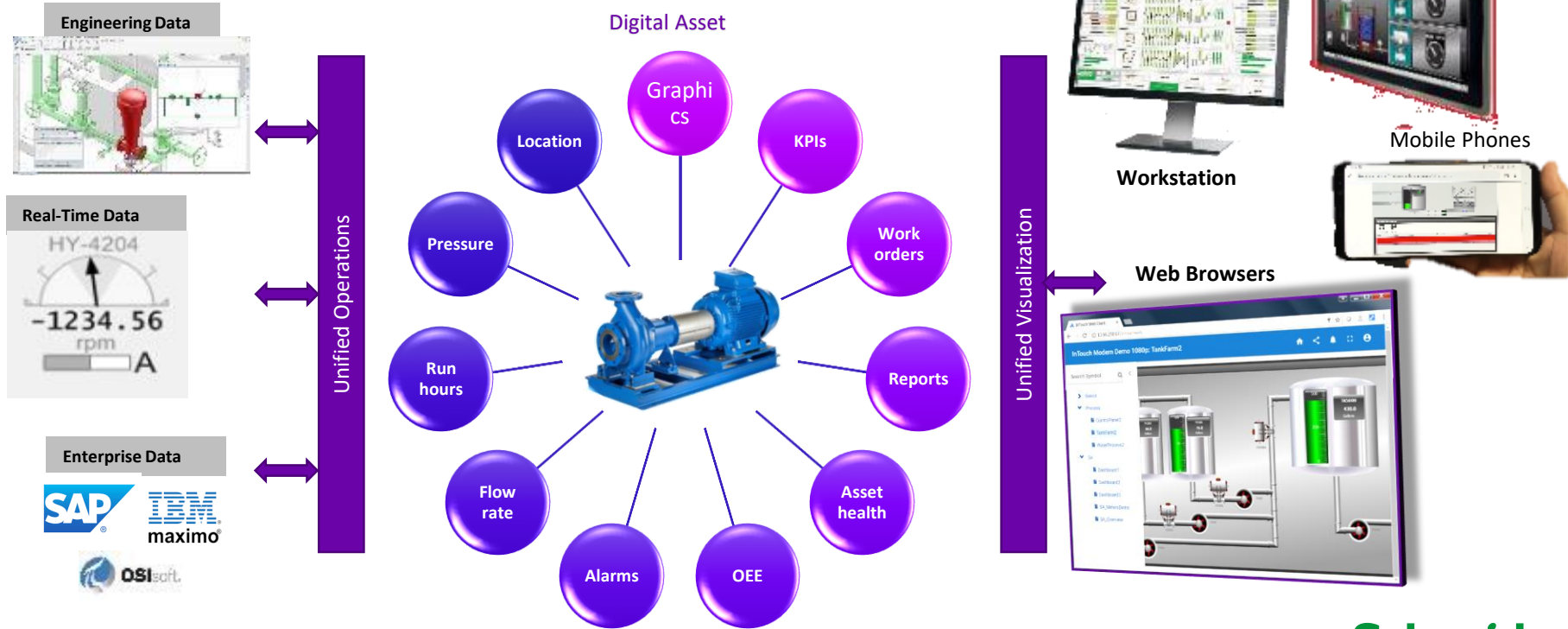
**Environment & Regulatory compliance with digital audit trail**

**Coordination across Maintenance at plant turnarounds and upgrades**



# Unified Operations & Unified Visualization

Connecting people, information, and operations



AVEVA

Schneider Electric

# System Platform 2017

## Product Introduction

Real-time control platform for Supervisory, SCADA, MES and IIoT application development. Manufactures and Industrials are able to unify people, information and processes with the flexibility to adapt without re-engineering.

## When it is Used

- Need for standardization across multi-site, remote operations
- Real-time Performance and Operations Management
- Need for common Infrastructure across multi-functional departments
- Centralized management and centralized information
- Scalable platform – efficiently grow from one plant to many

## How it is Used

- Incrementally deploy modular, plug-in apps
- Rapid change management for continuous process initiatives
- Model based approach integrates process with Enterprise systems

## Results Achieved

- Lowest TCO due to standardization and lifecycle maintenance
- Deliver operational efficiency and agility
- Faster decision-making with situational awareness, smart analytics

Enterprise

SAP

Oracle

Infor

Microsoft

Epicor

Etc.

System Platform



Create models for enterprise wide standards



Identify events correlations via context



Mine for Historical Insights



Monitor KPI performance

Plant Floor



...ANY PROTOCOL, ANY SENSOR, PLC, DCS or RTU

AVEVA

Schneider Electric

# AVEVA System Platform - Top 10 Key Differentiators



- 1 Situational Awareness
- 2 Standards Driven requires Zero Scripting
- 3 Modular Plug and Play Advanced Apps
- 4 Delivers 80% of Application Out of Box Automation Library
- 5 Limitless Scalability
- 6 Unique Deployment Approach without any system downtime
- 7 High Performance Historian; cloud-enabled with automatic anomaly detection
- 8 Remote Access – Zero Installation & Unlimited Clients
- 9 Hardware & Vendor Agnostic works with any PLC, RTU, PAC
- 10 Modular Plug and Play Advanced Apps

# VISUALIZATION:

## A new standard in operations

### Empowering New Age Worker with 1<sup>st</sup> Operations Management Interface (OMI)

- ▲ Responsive, modern UI UX
- ▲ Multi-Touch Gestures
- ▲ Multi-form factor device support



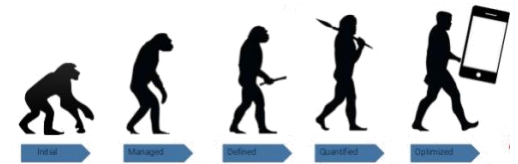
### Accessibility for all size Organizations & Users

- ▲ Visual Build simplifies tasks for Tech
- ▲ Out of Box standards/navigation
- ▲ Ready to Use KPI dashboards automated anomaly reporting



### Powering a Digital Transformation

- ▲ Plug & Play context-driven Apps
- ▲ Perpetual & Subscription licensing with Unlimited Clients
- ▲ Industrial IoT platform for hybrid delivery model- cloud & on-prem



AVEVA

Schneider  
Electric



# SYSTEM PLATFORM

One platform, many experiences

## Easy to Build



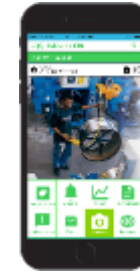
- ▲ World's first responsive interface is script free, works on any platform
- ▲ Have your HMI ready in minutes using out-of-box library content

## Easy to Use



- ▲ Faster identification and response of abnormal situations
- ▲ Plug and play apps for single windows into operations

## Easy to Own



- ▲ 100% reusability of initial engineering investment
- ▲ Deployed incrementally without any system downtime

# System Platform 2017- Access and Visualize your operations Anywhere

## Historical Playback, Real-time Visualization and Remote Access Functionalities

### Historical Playback

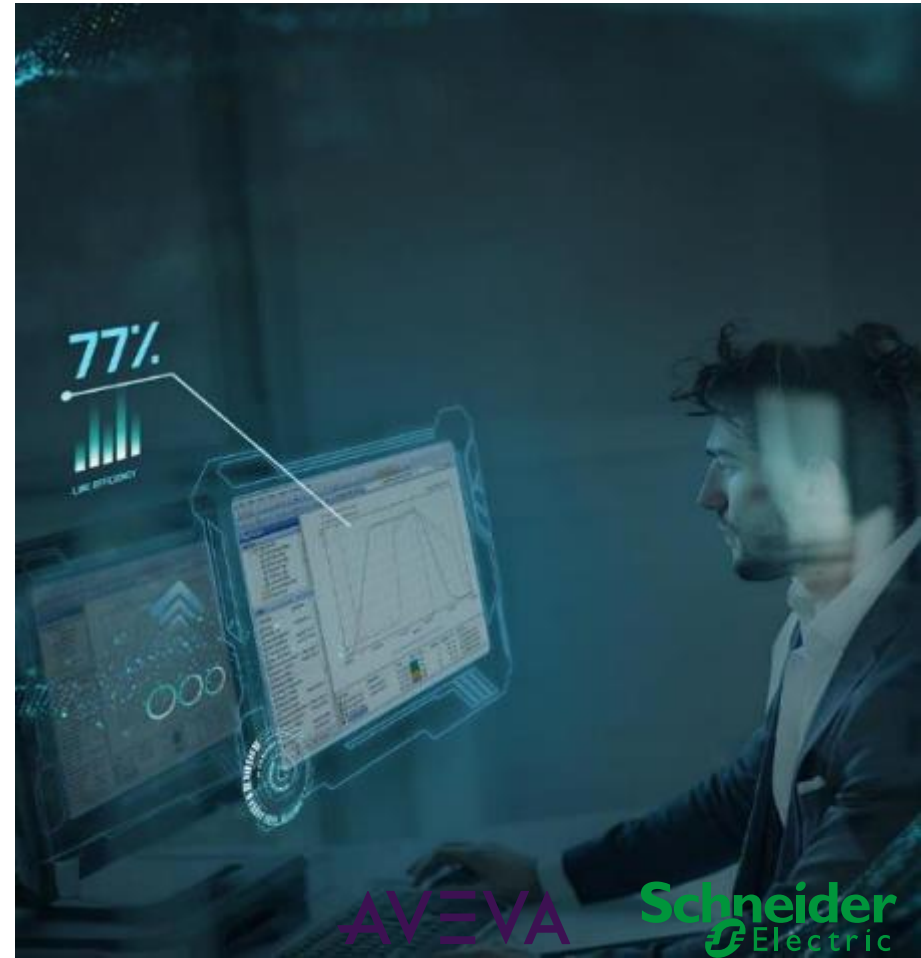
- + Combine real time & historical data
- + Provide greater insight
- + Enable proactive operations
- + Improve decision making

### Online Insight

- + Pinpoint reasons for downtime
- + Perfect for technical and casual users
- + Reduce time and cost of operator training
- + Access information from the Cloud

### Intouch Access Anywhere

- + Get remote and mobile access to InTouch apps anytime, anywhere through your device
- + Integrate SmartGlance for real-time historical and events dashboards, and KPI analysis



# System Platform 2017- Responsive Design makes form factors easy

Forget re-engineering HMI graphics. Configure applications once. Deploy anywhere, on any device.

Tablet UI – Portrait



Tablet UI – Landscape



Desktop UI



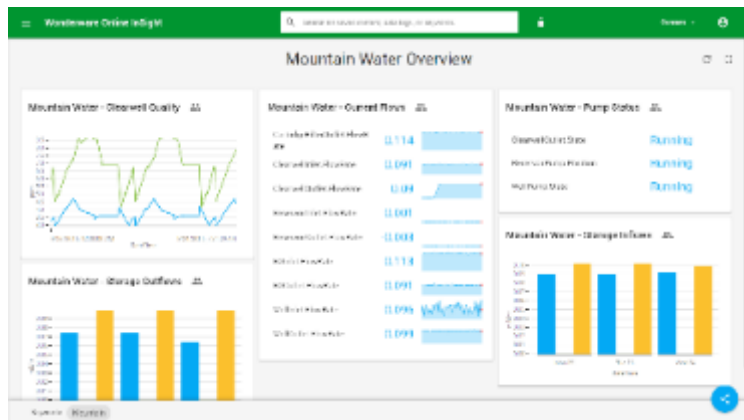
Mobile UI



More importantly, none of the content changed for any of these examples

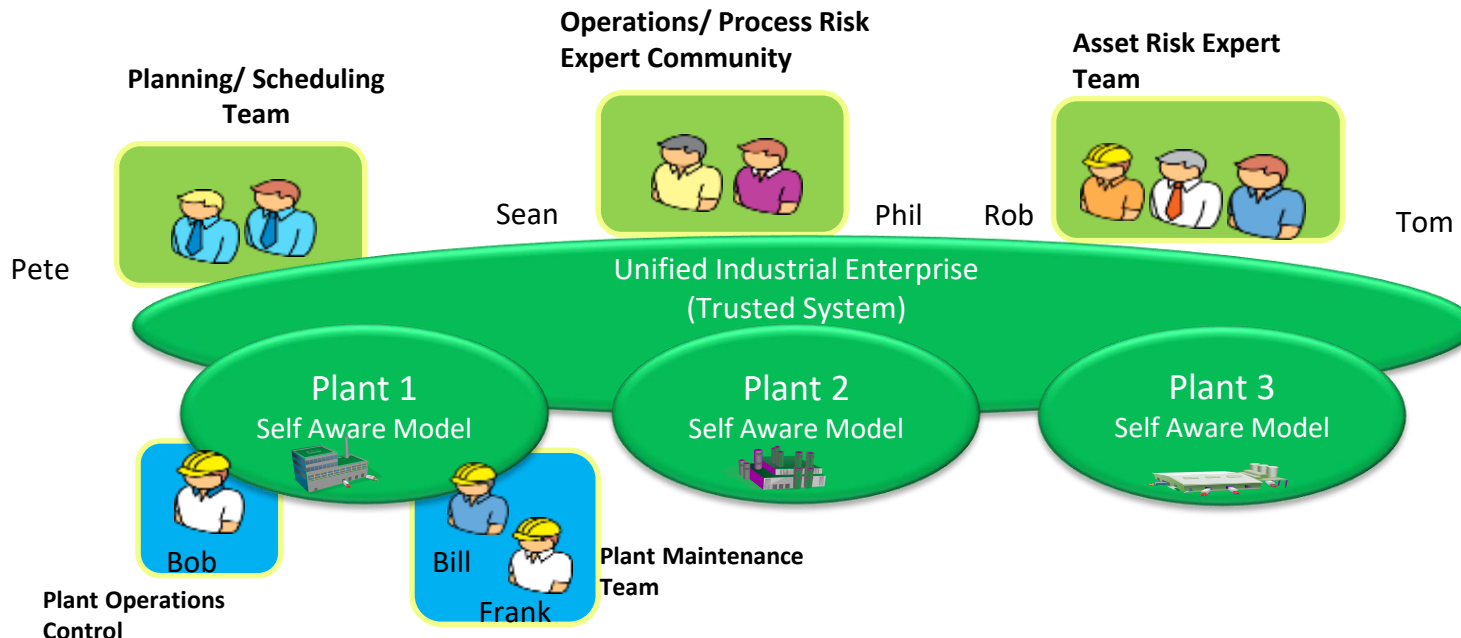
# System Platform 2017- Plug and Play Apps

Rich, modern applications simplify the flow of data that connects plant assets with control and business systems.



- + Alarms
- + InSight
- + Map
- + Win 911
- + GIS
- + Navigation
- + Navigation
- + J5

# Access to Experience - Virtual Expert Teams Collaborating with Local Teams



The System unifies distributed assets and makes everyone situational aware of the planned, current and past conditions of the refineries.

Virtual Team could be local or long distance remote

Local Workers who are moving within the refinery but could be roaming

# System Platform Value

Outstanding scalability from a single HMI to a multi-site automation system.



## Machine

- Ease of Use
- Visualization
- Alarming
- Basic History
- Connectivity



## Process

- Larger Tag
- Standards
- Extensible
- Reporting
- Management
- Remote Control & Monitoring



## Plant

- Server
- Equipment Model
- Thin Client
- Central Historian
- Fault Tolerance
- Situational Awareness



## Site

- HMI/Common Control Room
- Advanced Alarm Mgmt.
- Concurrent Engineering
- Common Standards
- Distributed Historians



## Enterprise

- Operational Centers
- Information Mgmt.
- Distributed Sites/ Multi-site
- Corporate Engineering

Increasing Functional Capabilities



# Competition Strength & Weakness



SIEMENS

## Strengths

- Broad automation portfolio: Single supplier with “totally integrated solution” (HW + SW)
- Strong identity as a global diversified controls company
- Native I/O communication with their PLCs
- WinCC licenses are totally cheaper for larger applications (more than 3-4 nodes) as it has much cheaper WinCC clients.
- Growing presence in process automation • Significant and growing presence in India and China

## Weaknesses

- 3rd party integration is often not easy or encouraged, works best if bundled with their own hardware/software



Rockwell

## Strengths

- Tight integration between Logix and FactoryTalk applications
- One-stop shop (HMI/PLC) and configuration integration – discounts on software side when buying across portfolio
- Development of View Point and VantagePoint for remote visualization and business analysis
- Unique scalability between EOI and HMI

## Weaknesses

- Expanding beyond traditional scalability options
- Evolving from traditional fixed-location solutions to mobility solutions for cost savings and convenience



ICONICS\_GENESIS

## Strengths

- Tight integration with Microsoft operating systems and additional Microsoft applications and technologies • Offer both 32-bit and 64-bit options to optimize hardware speed and performance

## Weaknesses

- Adoption rate of 64-bit HW & SW in automation is slow
- Increased competition with single source suppliers

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Schneider  
Electric



# Competition Strength & Weakness



## Strengths

- Broad product range with ability to provide a single platform for multi-disciplined controllers that allow end users to run process, discrete and motion applications in the same controller simultaneously
  - Strong brand identity and established name
  - Worldwide sales network
  - Established implementation and support channels
  - Global and diverse customer base
- Weaknesses**
- Supporting a multitude of HMI/SCADA product families



## Strengths

- A simpler/less complex product selection process ,provides unlimited licensing per individual site
- OPC Connections feature - manages subscriptions nicely + ability to turn on/off - with InTouch would need DA Server (Object Viewer capability)
- Supports multiple operating systems (via Java foundation)
- Development tools are included for end user purchases at no additional charge
- Streamlined browser based GUIs for Config, Security, Database Alarm, Tag/Device, OPC and Mobile connections and/or set-ups
- Global Tags (think overall Galaxy usage) and Application Tags (think specific to an InTouch app), their way of managing tag access to reduce redundant polling on PLCs.
- Ignition database choices are widely flexible down to MySQL and other lighter DBs, primarily for pricing issues. Wonderware exclusively uses full Microsoft SQL.
- Easier to connect to SQL with Ignition, vs InTouch (System Platform is better than InTouch though)
- Ignition SQL Bridge feature = OPC-to-SQL data logger (read & write), transaction manager + SQL Tags Historian vs InTouch History

## Weaknesses

- Extremely low market share in the HMI/SCADA space
- Limited staff and resources for larger enterprises that would need 24/7 support for their implemented solutions
- Heavily vested in JAVA making HMI/SCADA solutions , Java updates (which are frequent) require a complete shutdown of the Ignition App to complete
- Heavily dependent upon scripting, providing very little documentation assistance or



# AVEVA™ Historian

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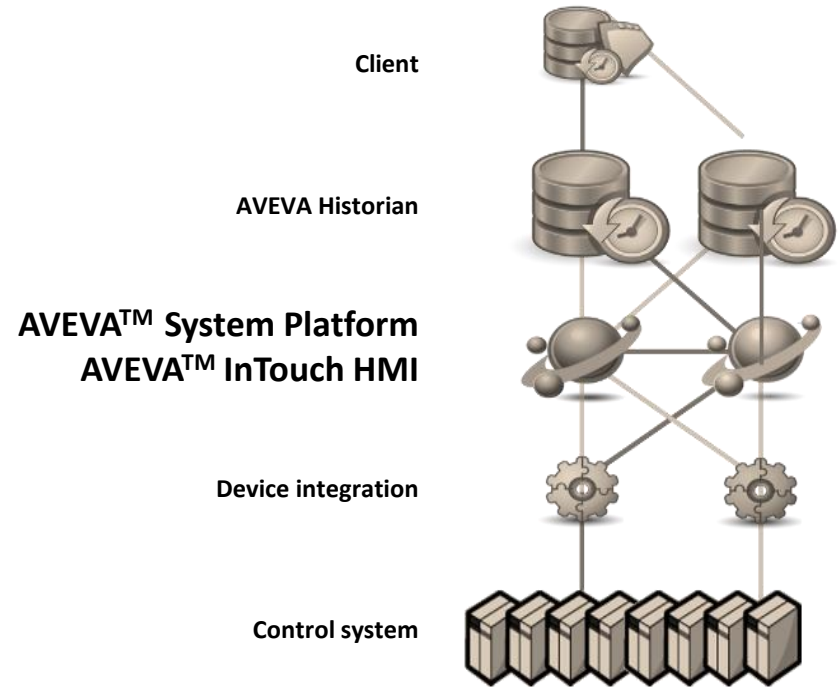
# AVEVA™ Historian

- Capture and store high-fidelity data
- Easily retrieve and securely deliver to desktop or mobile
- Enable process analysis anywhere, at any time



# Flexibility for a wide range of industrial uses

- Integrated alarms & events
- Integrated with SQL Server
- Ease of installation/setup
- Rich HMI capabilities with AVEVA™ InTouch HMI
- Extensive internationalization
- Integrated with AVEVA™ System Platform
- Leverages AVEVA™ System Platform for:
  - Calculations
  - Redundancy
  - Metadata object models
  - Data interfaces



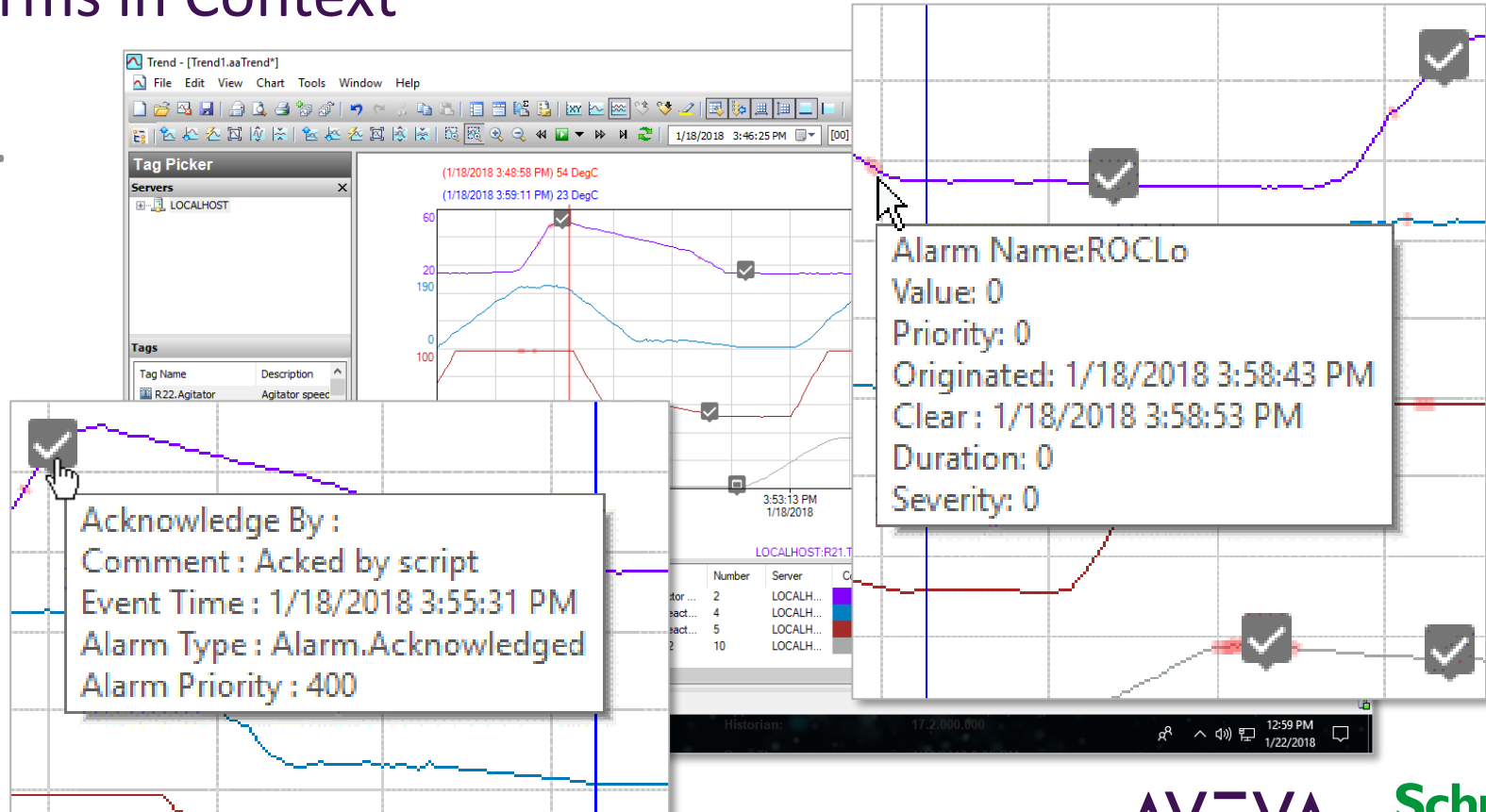




## Highly scalable and flexible

- Collect and store all of your vital data
  - Process
  - Alarm
  - Event
- 2M+ tags
- Capture complete data records
  - Even from slow or intermittent networks
- Monitor a single site, or an entire facility

# Alarms in Context





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# Proven in Industry

**80,000 +**

Licensed systems

**12 Petabytes**

New data added each year

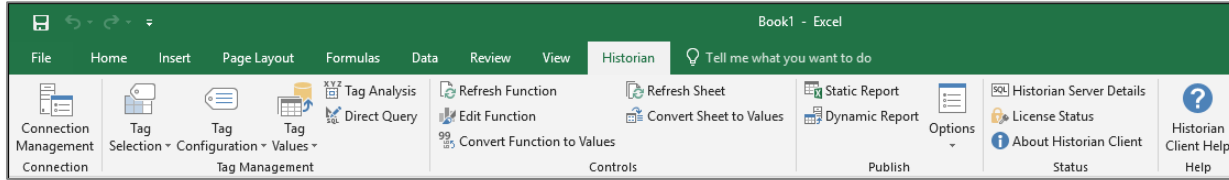
**Only 2%**

Storage space x relational databases



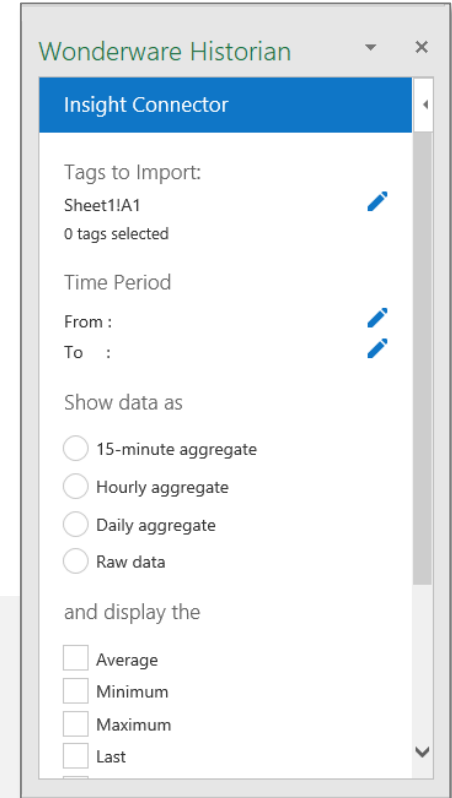
# Excel add-ins

## AVEVA Historian Client



- Ribbon bar
- Broad, mature features (12)
- Add-in functions
- 32-bit Excel

- Task pane
- Raw data, summary statistics
- Import (no functions)
- 64/32-bit “ClickOnce” Excel



AVEVA Historian Client Web 2017 U3

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# AVEVA Insight & AVEVA Historian Client Web

Browser Support



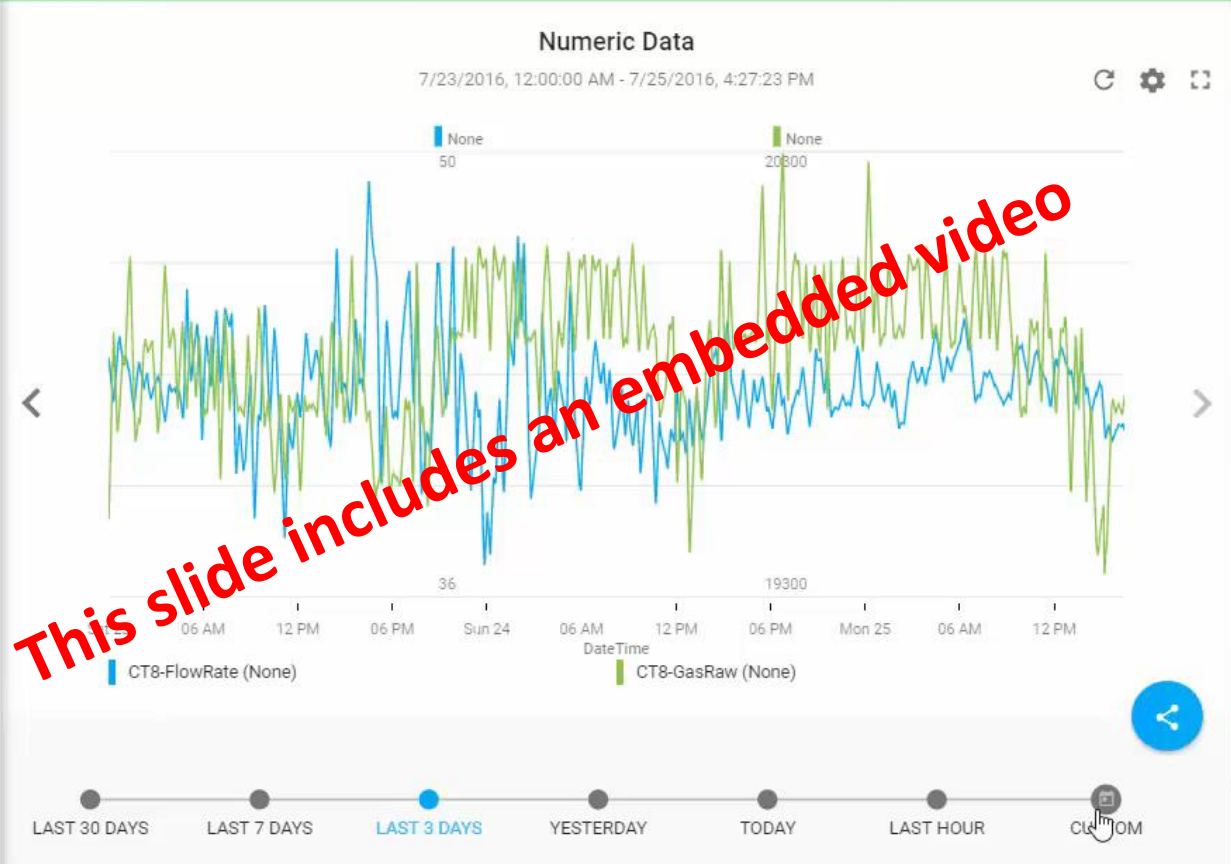
Search Results  
3 matches

3 TAGS units  
**None**

Numeric data

3 TAGS All Numeric

Numeric data



Data

- CT8-Eights
- CT8-GasRaw
- CT8-FlowRate

2 of 3 tags selected  
Clear Selected Tags

**This slide includes an embedded video**

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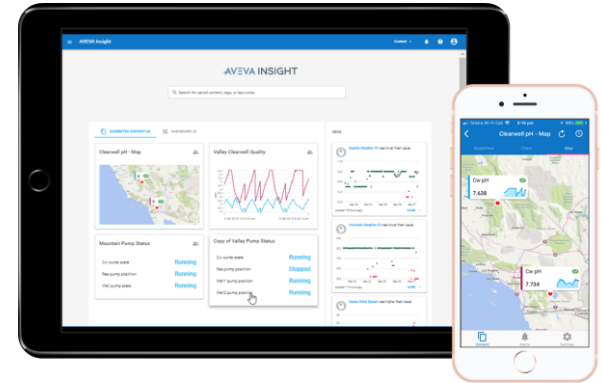
# AVEVA Insight

# What is AVEVA Insight?

- AVEVA Insight is a core component of AVEVA Connect

<https://connect.aveva.com/insight>

- Insight is the “doing platform” for operations
- It helps drive efficiency and performance improvements through better visibility of process activities by surfacing information from multiple sources for better, faster, smarter operational decisions



Make operational data accessible and empower your workforce with Insight – anywhere, anytime, any device



# What is AVEVA Insight?

## More than 'just' a historian

- Insight is a cloud-based industrial solution for operations
  - Collection, storage and visualisation plus cloud-based MES functionality, condition management, advanced analytics, machine learning, mobile reporting and more...
- Insight enables users to:
  - Connect with critical production data – anywhere, anytime, on any device
  - Unlock plant performance and efficiency KPIs such as OEE and asset utilisation
  - Compare across assets, plants or fleets
  - Understand the performance and state of production process in visual context
  - Create personalised content, dashboards and alerts
  - Share and collaborate – across and between teams





ANYWHERE, ANYTIME  
ON ANY DEVICE

AVEVA

Schneider  
Electric



AVEVA Insight

# People. Operations. Connected.

It is that simple.

LEARN MORE

TRY IT FREE

SIGN IN

NEED AN ACCOUNT? SIGN UP NOW

NEED TO PUBLISH YOUR DATA TO  
INSIGHT? GET TOOLS HERE

# AVEVA Insight

## People. Operations. Connected.

It is that simple.

**Sign up**

- LEARN MORE
- TRY IT FREE**
- SIGN IN

NEED AN ACCOUNT? SIGN UP NOW

**Free demo**

**LIVE DEMO**

<https://connect.aveva.com/insight>



# AVEVA INSIGHT

Search for saved content, tags, or keywords.

### Saved Content

keywords includes

Data [ADD ALL](#)

name includes (20)

CartridgeFilterOutlet.FlowRate (2)

CartridgeFilterOutlet.PressureKPA (2)

CartridgeFilterOutlet.TemperatureC (2)

sourced from (557)

Weather (416)

ValleyWaterTreatment (82)

MountainWaterTreatment (59)

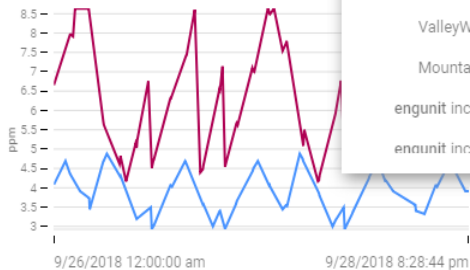
engunit includes (171)

enaunit includes % (70)

# Intelligent search

### SUGGESTED CONTENT (4)

#### Valley Clearwell Quality



#### Clearwell pH - Map

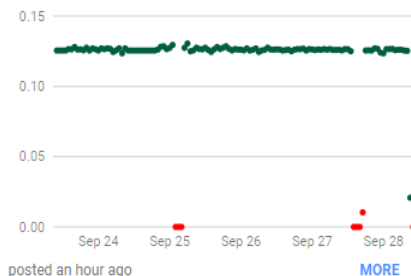


Running

Running

Running

#### Well2 outlet flow was lower than usual



posted an hour ago

[MORE](#)

#### Well2 pump motor power was lower than usual



Search Results  
27 matches

27 TAGS

All Tags

Mixed data

23 TAGS

°F

Numeric data

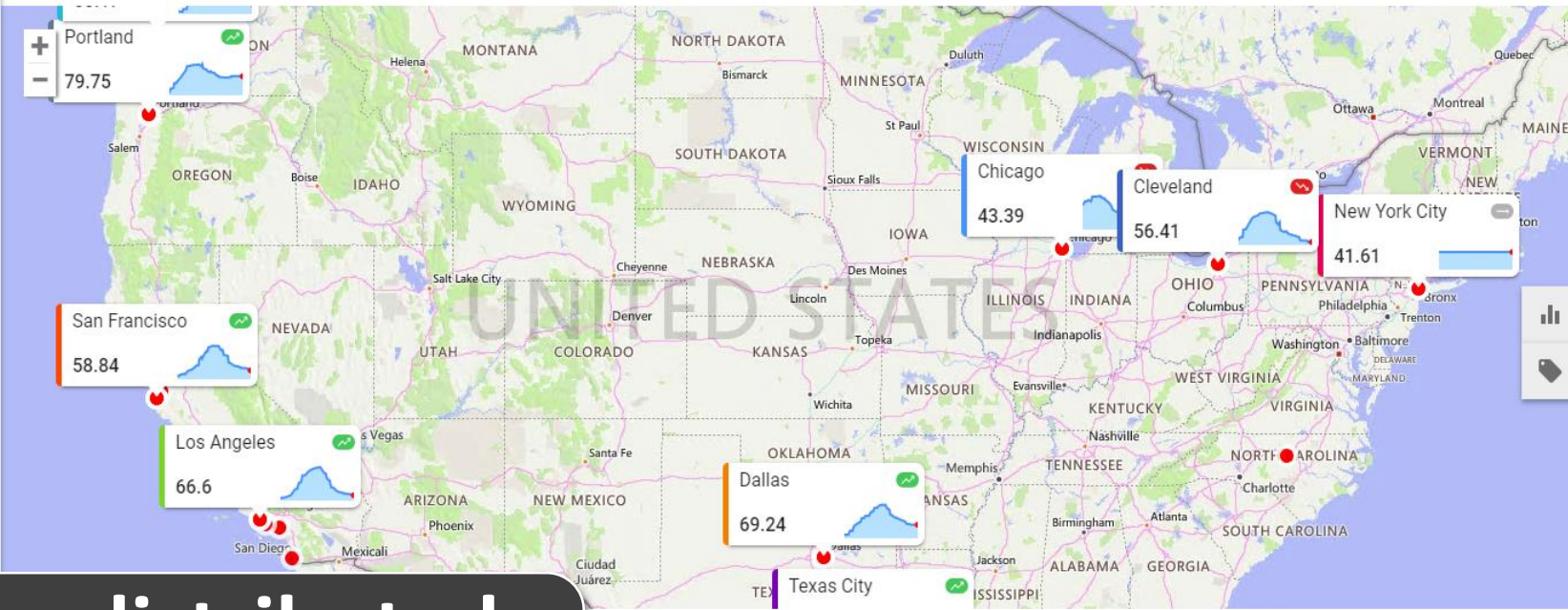
4 TAGS

°C

Numeric data

### Temps in Major Centers

9/29/2018 12:00:00 am - 9/29/2018 5:55:27 pm



View distributed assets on a map

Search Results  
59 matches

59 TAGS  
All Tags

Mixed data

9 TAGS  
m3/hr  
Numeric data

1 TAGS  
NTU  
Numeric data

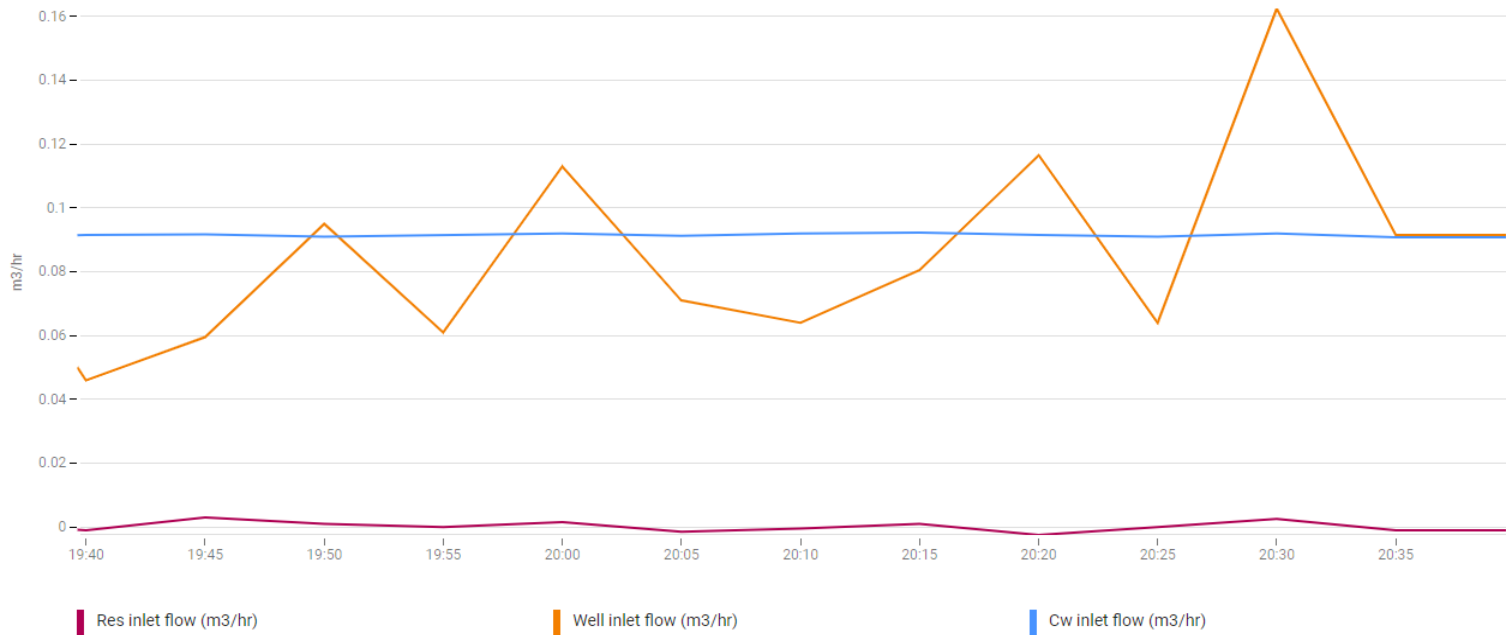
11 TAGS  
DegC  
Numeric data

11 TAGS  
DegF

### Mountain Storage Inflows

9/28/2018 7:39:37 pm - 9/28/2018 8:39:37 pm

[refresh] [share] [settings] [full screen]



Keywords: Storage Water Mountain Flow

LAST 30 DAYS LAST 7 DAYS LAST 3 DAYS YESTERDAY TODAY LAST HOUR



Search Results  
59 matches

59 TAGS

All Tags

Mixed data

9 TAGS

m3/hr

Numeric data

1 TAGS

NTU

Numeric data

11 TAGS

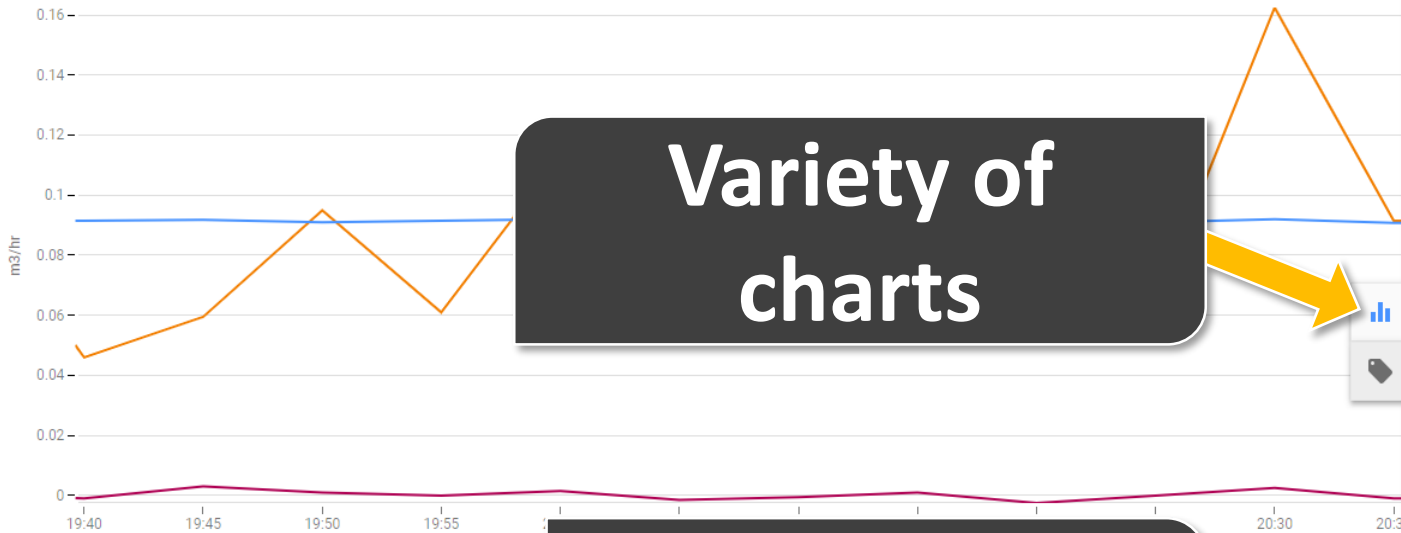
DegC

Numeric data

11 TAGS

### Mountain Storage Inflows

9/28/2018 7:39:37 pm - 9/28/2018 8:39:37 pm



Configurable keywords

Keywords: Storage Water Mountain

LAST 30 DAYS

LAST 7 DAYS

LAST 3 DAYS

YESTERDAY

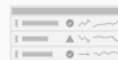
TODAY

NEXT HOUR

Gallery X



Summary Chart



Status Board



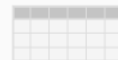
Line Chart



Column Chart



Map



Summary Grid



Questions & Answers

**AVEVA**

**Schneider**  
Electric

# Thank You

AVEVA

Schneider  
Electric

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