system point

System, Asset and Data Management

About System Point

System Point is a server-based software platform to bring unified systems and data management across the utility infrastructure, enabling end-users to manage their assets effortlessly, while remaining focused on grid and grid asset operation.

Developed specifically for the substation, system management software from Efacec integrates operational data management and system management while providing a vendor-neutral solution based on utility standards such as IEC 61850 and IEC 62351.

Integrating legacy devices is also key to modernize current infrastructure and maximize user benefits when adopting a unified system management approach. **System Point** modular platform facilitates the inclusion of already existent assets into a unified solution. Considering that utilities have different operational needs, the system management solution can be customized and extended to fit the exact needs of each customer.

Leveraging data collected from the substation automation system, **System Point** provides advanced analytics also to primary assets such as transformers and switchgear. This makes the platform your central point for all your data requirements.

System Point core platform features intuitive standards-based HTML user interface which enables users to instantly access systems status and data anywhere, anytime, through both desktop and mobile computing platforms. It can be deployed in multiple configurations either in standalone station management servers, in **UC 500E** embedded station servers as well as in hierarchical systems with dedicated central servers or virtualized environments. It has been developed to minimize own configuration and management efforts.

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- Server based platform with intuitive multi-platform web and mobile user interface
- Vendor independency through full support of standards, such as IEC 61850 Ed.1 and Ed.2, IEC 62351, FTP or Syslog
- Scalable solution with multiple deployment configurations supporting local, hierarchical or centralized architectures
- Automated on-event or polling-based data and record retrieval, cataloguing and storage
- Relays and assets version and status monitoring with integrated management of operational and security events
- Access and monitoring of protection records and settings
- Effortless configuration through web interface, Automation Studio IDE or IEC 61850-6 SCL
- Enhanced analytics with asset specific functions and algorithms

- Instant access to system and asset events and status anywhere
- Centralized management for all stations and devices in your infrastructure
- Secure remote accessibility
- Unified operational and security data management
- Unified user management
- A standards-based evolving platform for unified station operations and maintenance
- Flexibility to customize solutions with minimum configuration

Different Versions for Specialized Solutions

System Point is available in three different versions: DataNow, NextData and Chain. Each of these versions provide a specific feature set with different target functionality.

DataNow by System Point

The DataNow product version is focused on data collection, cataloguing and storage. It provides a dedicated feature set to support specific use cases for retrieving data from end devices (IEDs, network devices or others) and making it available for other systems.

NextData by System Point

The NextData product version aims at providing a complete and comprehensive solution for all your asset data collection and analytics. Supporting all data collection features available in the DataNow version, it provides an enhanced feature set that can cover advanced analytics for multiple asset types such as transformers and switchgear or distribution automation assets.

Chain by System Point

Finally, the Chain product version is only available in conjunction with another Efacec product or solutions and it provides a dedicated feature set for complementing other product offerings, enhancing their system and data management capabilities.

Platform Overview

With a web-based interface based on open standards the platform was designed to enable a unique user experience across client platforms irrespectively of employed OS or browser, from desktop computing platforms to mobile or tablet devices.

The simplified user interface enables users to correlate different events such as cybersecurity with operational data within the scope of a single device or a device set. With all data available in a single platform sharing information across teams or coming back to past events becomes hassle-free and a unified view of automation system operations becomes possible.

The solution also provides a configurable email notification engine that can forward event information to selected users, including auto-generated PDF reports of grid disturbances or faults.
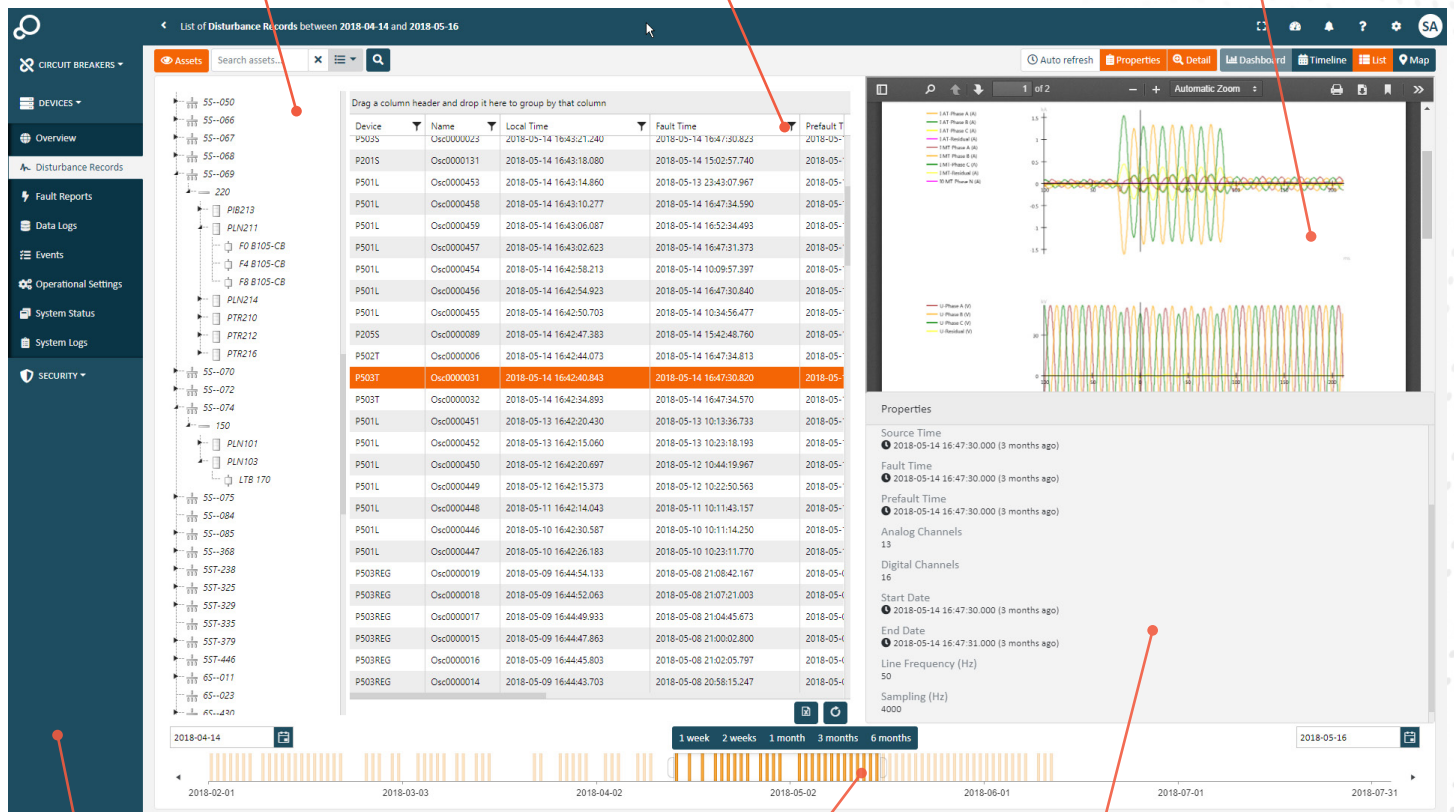
Asset Tree

Access systems and devices across the managed infrastructure within a single bay, station or area.

Display Area

View asset events and collected data in graphical timeline view, list view or geographic view in case of enterprise deployment.

Preview Area

Obtain additional detailed information related to a given event.

User interface overview

Functional Modules

Select relevant data for your analysis based on the data source.

Timeline

Get a quick overview of the events dynamic of your system and focus on specific time frames for a detailed analysis.

Properties

Check the properties and status of the select object such as device or disturbance record.

Operational Data Management

Disturbances

Seamlessly captures disturbance records on-event or through polling, automatically catalogues disturbances and generates summary reports. Also enables email notifications and provides easy access to previously captured COMTRADE files for analysis.

Data Logs

Modern IEDs generate vendor-specific operational log files that can be captured, stored and later accessed for correlating with other data.

Faults

In the same way as with disturbances, **System Point** automatically extracts and handles fault reports from Efacec devices with built-in fault report generation capabilities.

Operational Events

Any IEC 61850 event captured through RCBs, GOOSE or through polling can be stored and used for notification or analysis, implementing a true system wide SOE sub-system.
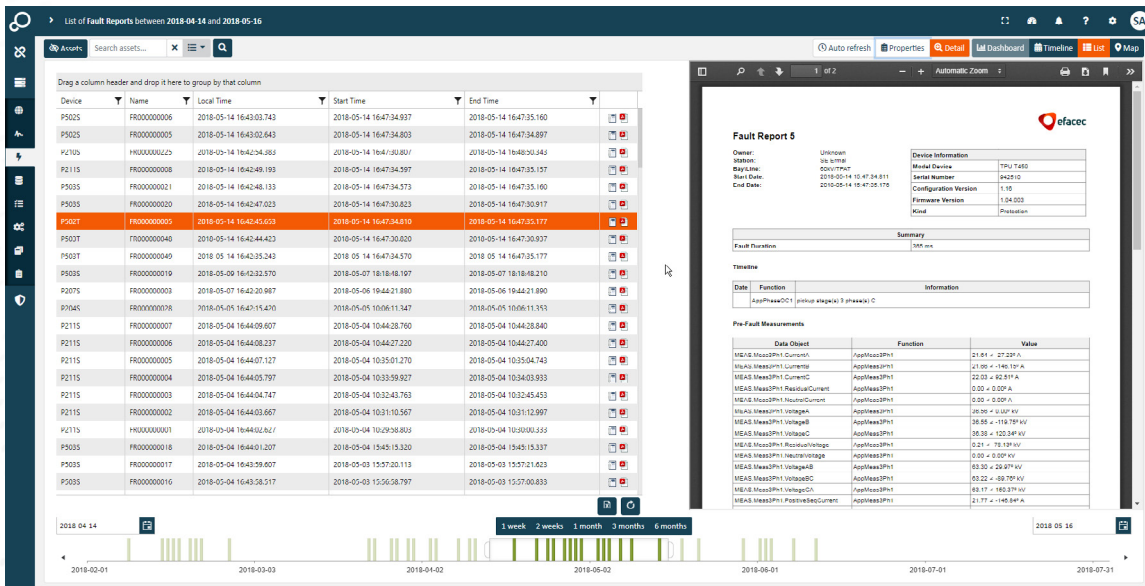
Listing and viewing of recovered fault reports

Timeline with the events that occured on the system

System Management

System Status

System Point continuously monitors the connectivity status of all managed devices, as well as the configuration versions (hardware, firmware, software and configuration) and asset nameplate information for IEC 61850 devices. This enables end-users to effortlessly track the configuration status of their systems, a fundamental cybersecurity requirement.

System Logs

Both legacy and modern devices generate standards-compliant or vendor-specific system log files that can also be captured and stored by **System Point**.

Security Events

Any security event including software failures and user actions within **System Point** or at any of the managed devices can be tracked through IEC 61850 or Syslog. This provides a security auditing platform that integrates all devices of each station (IEDs, networking equipment, servers, workstations, etc.).

User Management

System Point user account and information database is maintained seamlessly across the server hierarchy and follows modern RBAC principles. User management can be integrated with external LDAP or Active Directory (AD) servers and enables users to deploy systems with simplified user account, authorization, credential revocation, and access control based on utility policies.
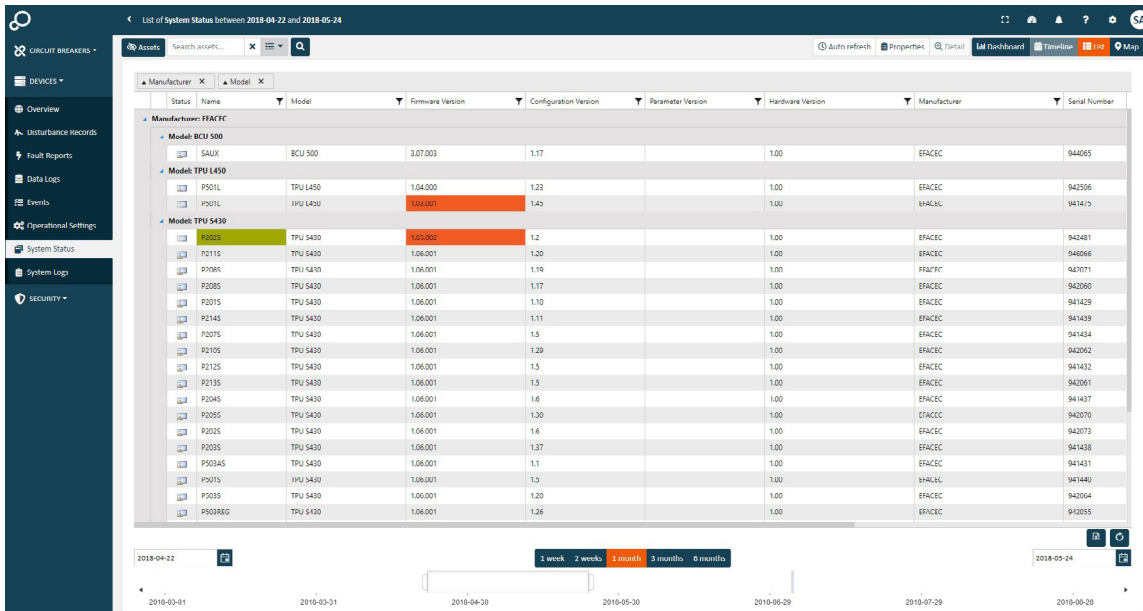
Monitor configuration versions of all managed devices to effortlessly track configuration status
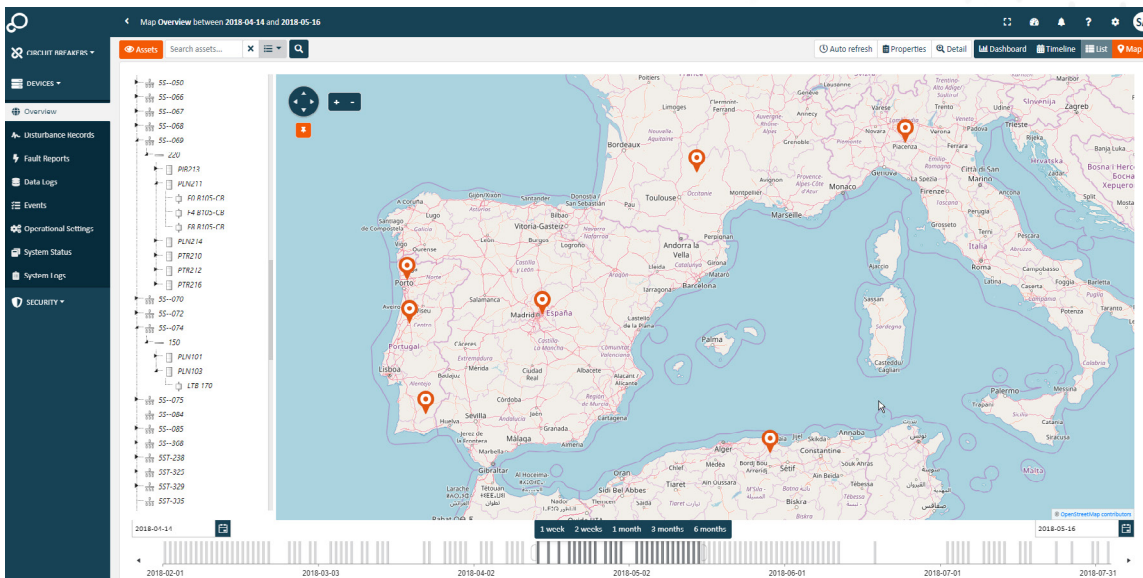
Geographic location of the events

Configuration and Information Management
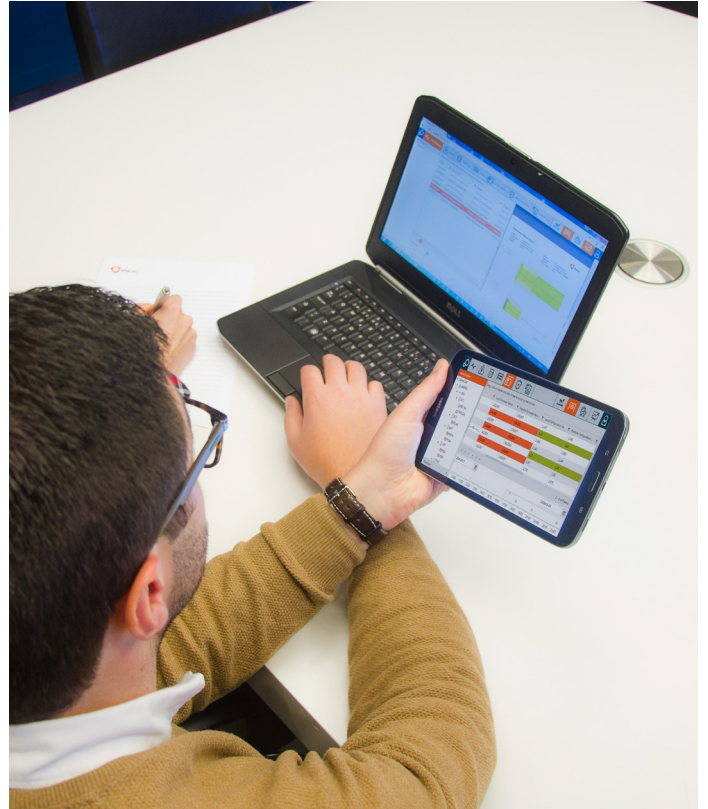
Configuration Settings

Monitor and track under a revision control system, full device configuration settings or, using standard IEC 61850, keep track of all changes made to devices without the need of 3rd party solutions.

Protection Settings

System Point continuously monitors protection settings from all IEDs. This ensure that all settings changes are recorded and makes possible for integration with Wide Area Protection Coordination solutions to ensure that relays have the adequate configuration for the current network topology.

Documentation

Integrate all required asset documentation such as user manual or test reports and make it easily available to any user.

"Real-time" protection settings monitoring to ensure adequate IED operation

Advanced Analytics

Transformers

Detailed overview of the health of a transformer asset fleet, including dedicated analytics for remaining life calculation, overload capacity or health and risk assessments.

Switchgear

System Point can provide a clear view of or switchgear operating capabilities analyzing failures, maintenances or historical operation trends and providing health and risk assessments.

Distribution Automation

System Point can also look outside the primary substations providing insight to secondary substation by monitoring key indicators such as internal arc, voltage and currents or transformer vibration and temperature.

IEDs and Network Devices

Using standard IEC 61850 data models, **System Point** can provide IEDs health assessments but also communications supervision and control services monitoring.

Security and User Management

By providing a security auditing platform, **System Point** can be extended to support advanced security log monitoring and analysis and facilitate the assessment of security standards compliance.
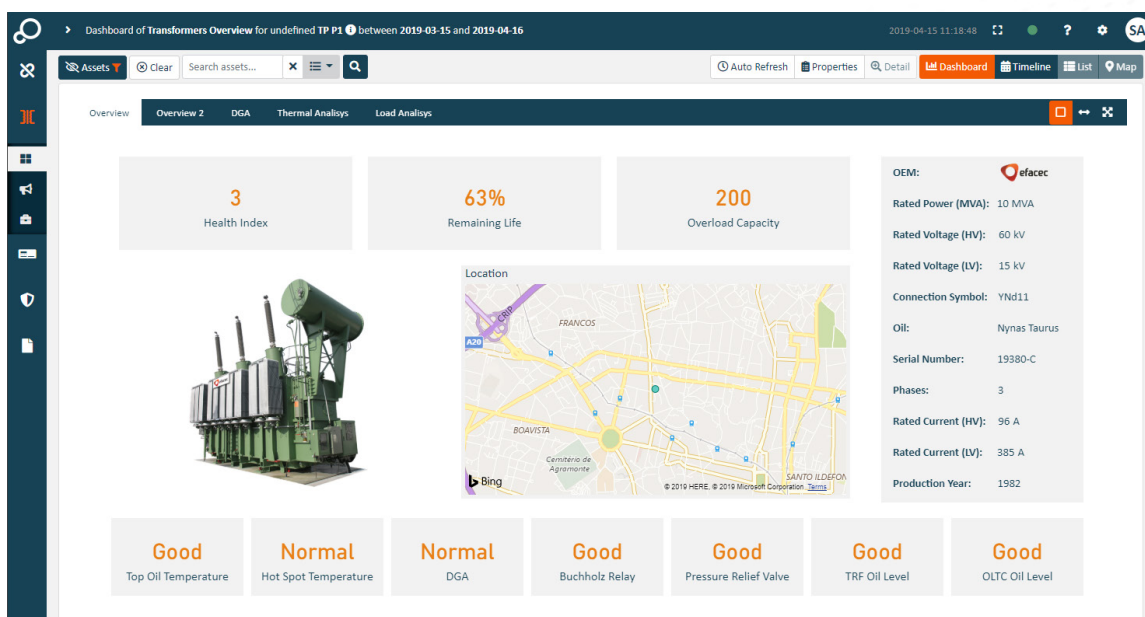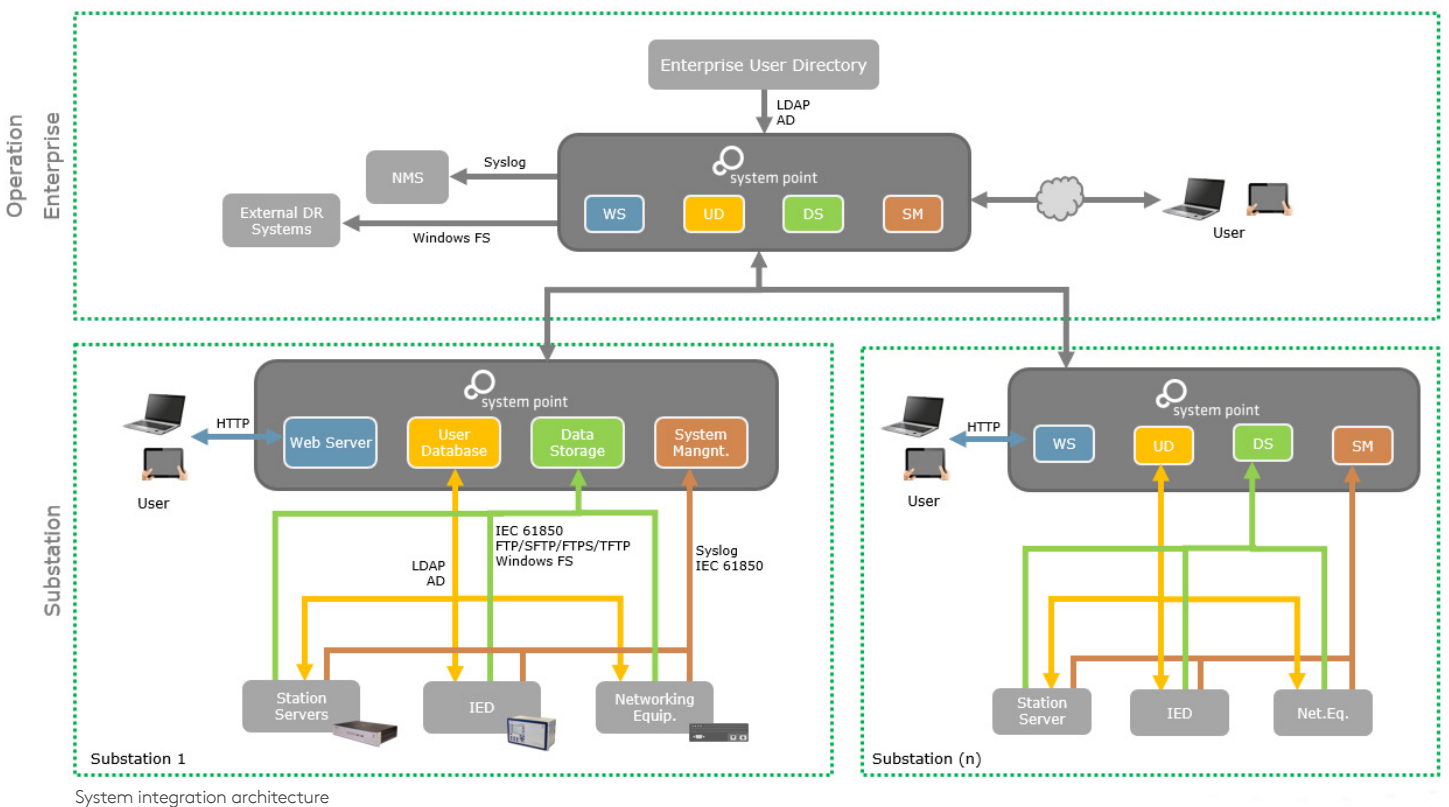

Transformer health overview

Configuration and Architecture

System Point software is modular and can be deployed as a simple local disturbance record collector or target applications featuring local station management servers together with hierarchical enterprise server aggregating all features, thus providing a single infrastructure-wide data and system management platform.

Local station server deployment options include embedded solution within **UC 500E** station servers or software deployed over any Windows OS (workstation, server or embedded computers).

Access to managed devices, user interface, upper-level **System Point** servers or external applications is performed through standard IP interfaces enabling full hardware choice flexibility depending on user requirements.

At each substation **System Point** software is typically deployed on a single machine. Enterprise server may be setup in a single server configuration or in multiple servers either with dedicated, shared or virtualized environments.

System integration architecture

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