



## Network Manager

SCATEX<sup>SCADA</sup>

SCATEX<sup>DMS</sup>

SCATEX<sup>EMS</sup>

SCATEX<sup>DMS</sup>

SCATEX<sup>ADMS</sup>

SCATEX<sup>RAIL</sup>

# Overview

**ScateX#** is the unified, yet modular Efacec ADMS, result of more than 30 years of experience in the grid automation. Designed to combine SCADA, Distribution Management System (DMS) and Outage Management System (OMS) capabilities under a single, multi-language platform with a unified user experience, enables utilities to manage the grid for high, medium and low voltage levels with maximum security and return of investment.

Grid dispatcher operators are facing new operational challenges to maintain the same levels of safety in operation while increases the penetration of renewable-based production (mainly wind and solar base) in the different voltage levels of distribution network and the integration in the grid of new distributed resources with flexibility in the control of active and reactive power, electric vehicles, energy storage and controllable loads, coupled with emerging business models (aggregators and flexible operators) that provides the necessary flexibility to the grid.

At the same time, the installation of Advanced Metering Infrastructures (AMI) systems and the increase of network distribution automation provided new strategies of monitoring and control of the distribution network.

**ScateX#** was designed having modularity as a priority. This enables flexible deploys as single SCADA, single DMS, single OMS or as a fully ADMS either for high voltage, medium voltage or low voltage, protecting the client investment for future evolution of the system.

**ScateX#** is built upon a real-time cybersecure infrastructure and includes many innovative features that provide quick and easy access to real-time information, improving situational awareness and readily providing enhanced decision support. The set of network, power and outage management applications further leads to efficient operation and network optimization.

Featuring openness, flexibility, expandability and performance, **ScateX#** can scale to meet the needs of large networks and infrastructures, enabling customers to leverage stepwise investment strategies. Moreover **ScateX#** can be tailored to meet the specific needs of each user to deliver unmatched cost/benefit solutions.

Recognizing that straightforward deployment, integration and maintenance is a fundamental requirement, **ScateX#** presents end-to-end engineering and management of the whole infrastructure from control room, through communications infrastructure and remote plant or field equipment. Moreover **ScateX#** includes a complete solution for operator training that enables you to maintain operator team readiness.



## Key Features

- Fully integrated SCADA/DMS/OMS platform
- Unified and powerful operations user interface
- Flexible realtime dashboard
- Full set of power management applications
- Full set of outage management applications
- Realtime centralized FDIR
- Realtime mobile integration
- Communication network infrastructure monitoring and management
- Electric vehicle charging infrastructure monitoring and management
- Report designer and server
- Modules to help infrastructure commissioning using test workflows engine
- Energy module to execute LV power flow using energy network configuration
- Operator training system
- System historian
- Flexible and scalable platform
- Open and modular infrastructure
- Advanced engineering system
- Seamless application and systems integration
- High availability and cyber-secure product platform









## Benefits

- Immediate situation awareness and intuitive real-time operation
- Improved system reliability and network SAIDI reduction
- Improved network operational efficiency
- Optimised crew/operator maintenance productivity
- Straightforward deployment, integration and maintenance
- Deliver real-time process and operations information throughout the organization
- Tailor-made solutions to meet the exact needs of each project

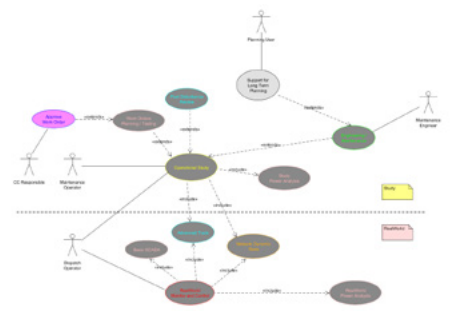


## Overview of ScateX# Standard Product Assemblies

	For electrical, oil, gas and water utilities and industries, <b>ScateX#</b> Control Center bundles all the features required for advanced network operations and infrastructure management in a highly scalable extensible SCADA platform including advanced network-aware supervision and control applications in a unified user interface for 24/7 system operation and management.
	Prepared for smart grid deployments above one million of data points in one reliable and integrated SCADA/DMS solution, <b>ScateX#</b> Distribution Management System is the single real-time system access point for distribution network operations. Ready for tomorrow's distribution grid, <b>ScateX#</b> DMS combines core SCADA features with advanced power applications to support unified operation, automation, analysis, and reporting. Recognizing the dynamic nature of MV networks, <b>ScateX#</b> supports patterns for MV substations providing minimal engineering, installation and commissioning effort through semi-automated modeling features. As the real-time backbone of utility operations and management, the openness of <b>ScateX#</b> DMS also enables straightforward integration of external systems such as workforce, asset, advanced metering or customer information systems.
	For power generation and transmission companies <b>ScateX#</b> Energy Management System provides a real-time and high performance solution that drives systems efficiently, reliably and securely while providing enterprise decision makers with online process and energy information. <b>ScateX#</b> EMS combines SCADA operations with advanced applications including conventional and renewable generation planning, automatic generation control or contingency analysis, that constitute invaluable tools for network operators. Its open platform further enables the integration of third-party components and systems such as energy market interface or asset management systems.
	Prepared for smart grid deployments above one million of data points in one reliable and integrated SCADA/OMS solution, <b>ScateX#</b> /OMS system is an open, modular and distributed system for the control and management of a power system. It targets the distribution utilities as it provides tools that enhance the control over the distribution quality of service, as well as tools that support a fast and safe service restoration to customers upon the occurrence of network outages. <b>ScateX#</b> /OMS provides a fully integrated WEB user interface for OMS functionalities, including the interface to the enterprise systems including IVR, AVL and MDM.
	<b>ScateX#</b> ADMS is the full featured SCADA/DMS/OMS platform suited for distribution utilities to deliver high reliability, improved customer service and efficient operating costs while maintaining operational safety facing the growth of distributed generation and electric vehicles and the management of an active distribution network. In addition, improved situational awareness must be provided to the operator providing wider integration with the Information Technology (IT) systems of the organization.
	<b>ScateX#</b> RAIL bundles SCADA, operations management, power applications, condition monitoring and technical supervision, and providing a framework for seamlessly integrating railway applications and systems. <b>ScateX#</b> RAIL enables network operators to efficiently manage the railway electrification system, including substations and catenaries, as well as all associated infrastructure.

# Modular System and Functional Components

**ScateX#** has been designed having flexibility in mind. A large set of functional components and services may be combined to be delivered in pre-defined and ready to be deployed packages. These pre-defined packages may be quickly configured for classical customer needs whether is increasing network automation for improved reliability, increasing network efficiency or improving personal productivity. In addition, tailored solutions may be designed to meet specific customer requirements. **ScateX#** is able to be expanded either in scale or in functionality, protecting the customer investment.





- Calculation Engine
- Diagrams Display Engine
- Historical data Engine
- Sequences of Commands Engine
- Temporary Network Elements
- Topology Processing
- Trending
- Tagging Engine
- SCADA Engine
- Hierarchical Model Browser
- Alarms/Events Correlation Engine
- Reports and notifications Engine
- Advanced Alarming
- Map visualization
- Dashboards

- Automatic feeder generation
- Commissioning Environment
- Switching Orders Management
- Crew Management
- Mobile Integration
- Topological tracing
- Topological coloring
- Distribution Power Flow
- Distribution State Estimation
- Post Disturbance Review
- DTS
- Operational Studies
- Fault Analysis
- Infrastructure Management
- Device Monitoring

- FDIR
- Fault Location
- Outage Analysis & Prediction
- Trouble Call Processing
- Load Shedding
- Storm Mode
- SAIDI Indexes
- Resource needs prediction
- Crew Management
- Short Circuits
- Protection coordination
- Peak demand reduction

- DER Management
- Load Forecasting
- Distribution Power Analysis
- Feeder Optimisation
- Load Transfer Function
- Volt-Var Control

- CIM
- Multispeak
- ICCP
- IEC 60870-5-101
- IEC 60870-5-104
- DNP 3.0
- SNMP
- OPC
- MODBUS
- WebServices
- OpenADR
- OCPP

- GIS
- Metering Management Systems
- Customer Information Systems
- Asset Management Systems
- Workforce Management
- IVR
- MDM
- NMS
- CRM

The **ScateX#** platform presents a high voltage, medium voltage, low voltage unified user interface environment for all internal and external applications, thus empowering remote operations and real-time management as well as enabling smooth integration with field and facility operations.

Multiple choices of local and remote user interface are possible, such as control room workstation, video wall, distributed operating stations or web access.



The standard user interface module includes a fully-integrated environment including a multi-screen window, menu and layout system featuring unified pick-and-drop, navigation, context menus, cross-application toolbars and shortcut interaction. The same user environment is presented for operational, planning, analysis, review or training purposes.

Standard user interface components include dashboards, data/event lists, real-time or historic trends, object model browsers, alarms management as well as interactive full vector graphics schematics or geographic displays with powerful layering, decluttering and object-oriented features. User interface screens can optionally integrate IP video feeds as well as locally available cartography and geolocation system for integration of field operations.

The powerful tagging, pinning and display engine allows integration of any **ScateX#** or external application directly into the operator user interface. Managing field controllability, system operating modes, alarm generation or getting feedback from condition monitoring, field crews or call centers directly on the display are examples of powerful user interface integration features available.

The display engine further supports synchronized diagram views that, together with the efficient navigation features, enable unprecedented system awareness for operators of large infrastructures.

The full integration of the control center with mobile devices enables switching work orders to be electronically sent to field crews. The crew can directly confirm the switching maneuvers improving the visibility of other crews, increasing safe working.

To efficiently manage planned or unplanned occurrences and field operations, **ScateX#** provides an optional user interface solution that allows users to perform side-by-side on-the-fly integration of the real-world context with simulated network environments for network operation or planning.

Operators and managers can thus interactively create, record, validate and execute switching/work orders on their user interface station. Furthermore, operational document workflow management is available for maintenance or other work orders to be executed remotely or by field crews with the assistance of the mobile web-based field crew interface.



## SCADA Processing

The **ScateX#** SCADA engine supports hot-standby redundancy, performing all data/event and control direct execution, SBO and sequencing processing in conjunction with the multiple front end communication processors.

The SCADA processor further supports data logging and sequence of events recording together with the advanced alarm engine. Multi-source alarm processing with grouping, filtering, segregation and workflow handling including acceptance, notification and logging is available.

Also included in the core are printer management, the user defined calculation and logic engine for automation purposes and the tagging system host.

The facility of an electronic wallboard is provided by the flexible tagging system at the user interface. The electronic wallboard is therefore available in all types of diagrams including schematic, geographic or geo-schematic diagrams as well as list-based components.

All **ScateX#** management applications share a single object-based hierarchical model, with geo-referencing capabilities that enables flexible description of information such as resources, assets and connectivity.

The **ScaleX#** user interface environment offers integrated network model-based components that can deliver dynamic coloring, tracing and automatically generated feeder schematics according to the network topology and current operating status.

Directly onto the user interface surface, operators may also update the network topological model according with field or management information through cuts, jumpers, temporary units or similar tagging actions.



Components and Features	ADMS	OMS	DMS	EMS	RAIL	SCADA
<b>Unified User Interface Environment (UI)</b>						
<b>Core User Interface Components</b>						
Data lists, events and alarms, tags and pins, trends, model browsers, full vector graphics diagrams with advanced navigation and windowing, video-wall interface, online help, audible, alarms, geographic and map display, reports, dashboards	●	●	●	●	●	●
<b>Network Model-based Components</b>						
Auto-generated fully functional feeder schematics, coloring, tracing, redlining and dynamic model edits	●	●	●	●	○	○
<b>Integrated Multi-context Interface</b>						
Real world, study mode and/or engineering mode	●	●	●	●	○	○
<b>Operational Management Components</b>						
Operational or switching orders interface	●	●	●	●	●	●
Management of planned and unplanned occurrences or outages	●	●	●	●	●	●
Multi-language - Up to 4 different languages	○	○	○	○	○	○
IP Video Integration	○	○	○	○	○	○
Cartography Integration and Geolocation	○	○	○	○	○	○
External Application Integration	○	○	○	○	○	○
<b>Web Access Server</b>						
Secure Multi-platform Web-access for UI	●	●	○	○	○	○
<b>Mobile User Interface</b>						
<b>Mobile applications</b>						
● - Core feature in product assembly	●	●	○	○	○	○
○ - Optional (Standard component)						
● - Optional (Component customized according to customer requirements)						

Historical Information System

**ScateX#** HIS supports deep event and data logging storage from all sources including online RTUs, remote IED data records, user actions, alarms, calculations or system diagnostics, and can be deployed over the SCADA servers or at independent database servers.

The HIS features snapshot and playback to support post-event review analysis, power application studies or operator training sessions. Historic data can be access through data lists or trend displays, can be fed to other applications such as analysis, forecasting or statistics calculations and exported to external formats

Reports and Alerts

For supervisory accounting and performance management **ScateX#** provides a reports and alerts module that can produce real-time or historic reports based on the output of specific management applications or user-defined statistics.

Report notifications may be sent through email or SMS as well as displayed in dashboards, fully integrated within operation diagrams.

Communication Processors

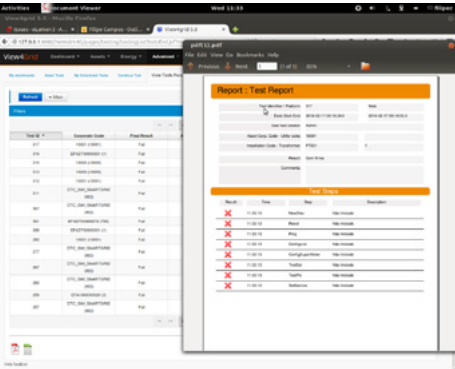
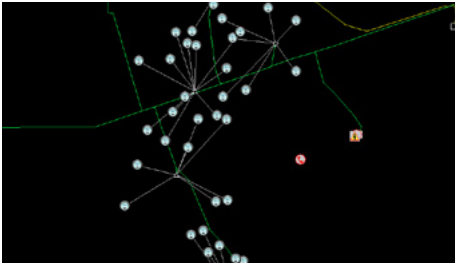
Distributed front end processors and IP communication adapters run remote communication processing and system/device service access for either operational or management purposes. For inter-control center integration **ScateX#** fully supports ICCP, either in dedicated servers or SCADA server-integrated configurations.

Each **ScateX#** high-availability front end processor node supports simultaneous operation of multiple and optionally duplicated serial or IP channels. A wide set of protocols is available, including IEC, DNP, OPC, SNMP or Modbus, to name a few. All common communication infrastructures including RF, PLC, fiber, microwave or satellite links, SONET, SDH or IP backbones, GPRS/UMTS or WiMAX are supported.

Applications for Operations Management

Components and Features	ADMS	OMS	DMS	EMS	RAIL	SCADA
SCADA Engine						
SCADA Processor Data Acquisition and Event/Control Processing, Data logging and Sequence of Events Recording, Alarm engine, User Calculations and Logics, Tagging System, Printer Management	○	○	●	●	●	●
Flexible Tagging System Temporary network elements, Safety tagging and interlock checks, Tagging lockout	●	●	●	●	●	●
Hot-standby and multi-server configurations	○	○	○	○	○	○
Network Model						
Object-oriented Dynamic Network Model and Topology Processor	●	●	●	●	○	○
Outage Monitoring (*) Including unsupplied energy and QoS index calculations according to IEEE 1366	○	○	○	○	-	○
Historical Information System (HIS)						
HIS integrated with SCADA server	○	○	○	○	○	●
Dedicated HIS server	●	●	●	●	●	○
HIS cluster	○	○	○	○	○	○
IED/RTU data file extraction and storage	○	○	○	○	○	○
Study Mode						
Side-by-side study mode for preparing operations and historical playback (sharing all core UI components) Interface identical to real world mode	●	●	●	●	○	○
PAS applications integrated in study mode	●	●	●	●	○	○
Simulation engine integrated in study mode Electrical Network, Telemetry and Telecontrol Simulation	○	○	○	○	●	●
Reports and Alerts						
Statistical calculations, reporting engine and dashboards server	○	○	○	○	○	○
SMS/email notifications	○	○	○	○	○	○

● - Core feature in product assembly  
○ - Optional (Standard component)  
● - Optional (Component customized according to customer requirements)  
(\* ) Optional feature to monitor QoS when OMS function is not included.



Advanced Applications

Power Applications

Specifically designed for electrical network management from generation through transmission and distribution, Efacec power applications enable operators to optimally manage their networks and assets according to economic, technical and performance requirements.

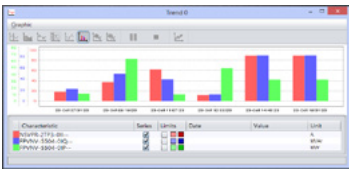
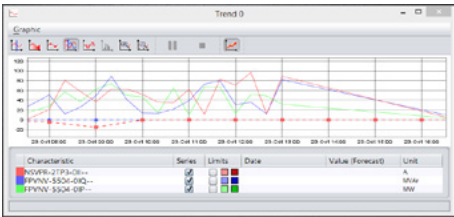
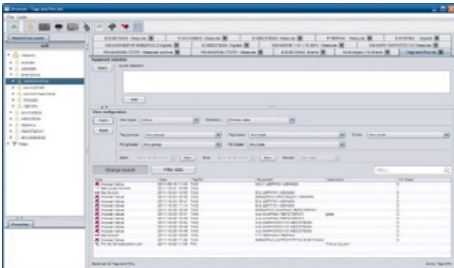
**ScateX#** Power Application Software (PAS) provides a set of field-proven power management applications for operational support, network optimization and advanced automation having safety as a priority. Algorithm performance allows applications to run in study modes as well as in real-time, either cyclically, on-event, upon user request or as part of control execution verification, instruction and confirmation (VIC) cycles. Algorithm results can be presented directly on the operation surface, in advisory mode through result tables and suggested operation lists or, in fully automatic mode, updating field setpoints or execute controls.

**ScateX#** was designed to allow fast and safe outage restauration. When an outage occurs, the centralized FDIR automatically generates and executes a switching order to isolate the faulty area maximizing the recovered network. If necessary, the operator may then request to the FDIR additional switching orders that may be electronically dispatched to the crews mobile devices for manual execution. After maneuvers completion the crew may confirm its execution directly in the system by a secure channel.

Low Voltage Power Analysis

In general, the same power analysis tools that are used at higher voltages are applied to low voltage networks. Load profile data is combined with measured values to produce more accurate results.

Power application functions may be deployed in multi-server scalable architectures. All PAS applications provide configuration, diagnostic and execution information that can be set, logged or displayed.



Advanced Management Applications

Components and Features	ADMS	OMS	DMS	EMS	RAIL	SCADA
Power Application Software (PAS)						
Operational Applications						
Power Flow	●	○	●	●	○	
State Estimator	●	○	●	●	○	
Reserve Monitoring				●		
Emissions Monitoring				○		
Others, please contact	○	○	○	○	○	○
Automation Applications						
Fault Detection, Location, Isolation and Reconfiguration (FDIR)	○	○	○			
Automatic Generation Control (AGC)				○		
Load Shedding	●	○	○	○		
Others, please contact	○	○	○	○	○	○
Analysis and Optimization Applications						
Load Profile Modeling	○	○	○	○		
Short Circuit Analysis	●	○	●	●		
Distribution Optimal Power Flow (DOPF)	●		○			
Optimal Power Flow (OPF)				●		
Voltage/Var Control (VVC)	●	○	○			
Contingency Analysis (CTA)	○	○	○	●		
Unit Commitment (UC)				○		
Economical Dispatch (ED)				○		
Interchange Transaction Scheduling (ITS)	○			○		
Voltage Stability Analysis	○			○		
Watershed Management				●		
Others, please contact	○	○	○	○	○	○
Forecast Applications						
Short-term Load Forecast	●	○	○	○		
Wind Speed/Direction Forecast	○	○		○		
Renewable Generation Forecast	○	○		○		
Others, please contact	○	○	○	○	○	○
Technical Supervision Software						
Advanced condition and performance monitoring of process and assets						
Electrical Network Components	○	○	○	○		
Wind Power Generation	○			○		
Hydropower Generation	○			○		
Photovoltaic Generation	○			○		
Communications and Telecontrol Infrastructure	○		○	○	●	
Railway Infrastructure					●	
Others, please contact	○	○	○	○	○	○

● - Core feature in product assembly  
○ - Optional feature  
● - Optional (Component customized according to customer requirements)  
(\* ) Depending on available PAS functions in the system.



Outage Management System

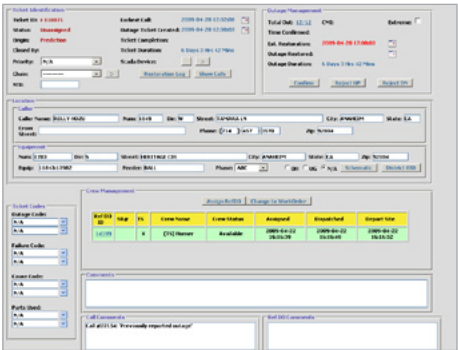
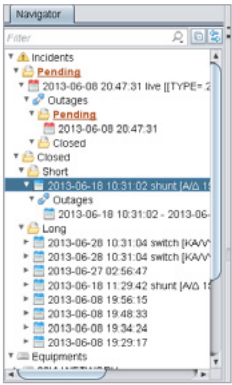
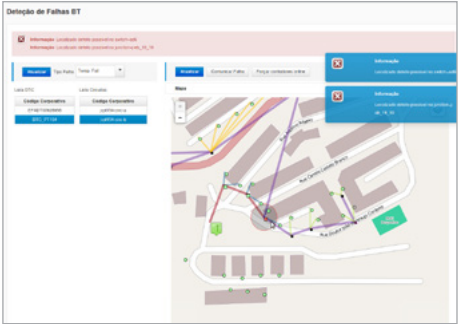
The **ScateX#** OMS system is an open, modular and distributed system for the control and management of a power system. It targets the distribution utilities as it provides tools that enhance the control over the distribution quality of service, as well as tools that support a fast and safe service restoration to customers upon the occurrence of network outages.

The workstation provides a fully integrated user interface for the operator. It includes bi-directional navigation and highlighting mechanisms between tabular applications and any kind of diagram.

**ScateX#** OMS provides a fully integrated WEB user interface for OMS functionalities, including the interface to the enterprise systems including IVR, AVL and MDM, customer call handling and management and incident calculation to crew field positioning, outage monitoring capability (with Quality of Service reporting), etc.

The **ScateX#** OMS system integrates all the outage management functions and applications through a single data model. A single data model allows information from consumers, crews (repair and Survey), and SCADA to be processed in order to locate problem areas quickly.

**ScateX#** OMS stores and track customer call information, integrates this information with network connectivity updates, and processes this information through the Trouble Call Analysis engine to provide a comprehensive tool for outage management. From managing simple customer outages and tracking routine service work, to handling severe storm situations, **ScateX#**/OMS provides the support needed to restore consumer service, all in real-time.



Manageability

A Single System for Network Management

Network management systems handle large amounts of information are increasingly dynamic systems therefore requiring advanced engineering methods and tools, not only for easy setup and deployment, but also for continuous system management and maintenance throughout the system lifecycle. Moreover the value of advanced applications relies on the availability of an up-to-date network model.

As a single system solution, **ScateX#** enables administrators to maintain a single model for all applications including the SCADA, PAS,OMS, LV and ADMS subsystems. Furthermore users interface the system through a unified UI, reducing system complexity to manageable levels.

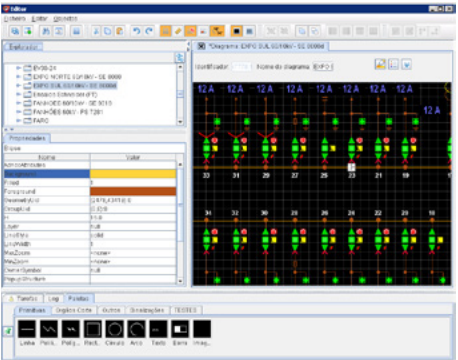
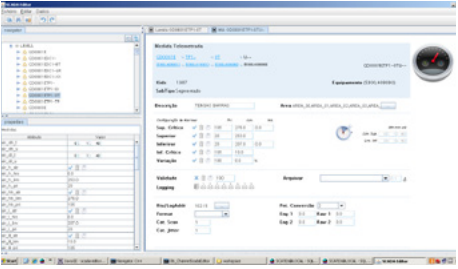
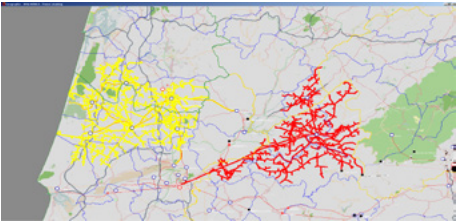
Low voltage networks can be several times larger than the higher voltage networks. The maintenance of the network model by the traditional approaches is impossible. It is therefore fundamental to be able to automatically import the network model from another source (ex: a GIS). The **ScateX#** supports incremental network model updates from external systems through CIM.

Integrated Engineering Environment

**ScateX#** supports current engineering requirements with an online integrated interactive CAD environment that includes template-based and object-oriented model editing tools, together with powerful copy/paste, import/export and model validation. The engineering environment supports database and network model design, user programming and diagram editing together with standard symbols with flexible dynamic behavior and templates for industry-specific applications, enabling engineers to customize and adjust the system instead of configuring it end-to-end. Full model version based edition is supported for diagrams, network equipments, network connectivity, SCADA model, communications model for all voltage levels of the network.

To complement the engineering toolset, **ScateX#** offers optional configuration repository server with full configuration history access and bulk/incremental updates as well as optional network simulation server for testing and dynamic validation.

Available for Efavec RTU and field equipment or for selected third-party providers, **ScateX#** can integrate RTU/IED configuration and management through the engineering system.



Outage Management Applications

Components and Features	DMS	EMS	RAIL	CC	RAIL	CC
Outage Management						
User Interface Components						
Full tagging, context, UI surface integration with SCADA operational user interface	○	●				
Switching Order Integration	○	●				
Work order workflow integration						
HIS Integration	○	●				
Archiving and reporting						
Network Model Integration	○	●				
Topology processing						
Service Operator Interface	○	●				
Secure multi-platform web-access for UI						
Field Crew Interface	○	●				
Mobile web application						
Automatic Incident Predictor	○	●				
Trouble Call Analysis (TCA) system						
QoS Analysis	○	●				
IEEE 1366 indicators or others						
External Application Integration	○	●				
CIS (Customer Information System)						
External Application Integration						
CIS (Customer Information System)						
IVR (Integrated Voice Response)	○	●				
WfMS (Workforce Management System)						
AMI (Automated Metering Infrastructure)						
AVL (Automatic Vehicle Location)						
● - Core feature in product assembly ○ - Optional (Standard component)						

Infrastructure

Components and Features	
System Infrastructure	
Distributed RT-Bus	●
Integrated RBAC, Cyber security and Responsibility Areas	●
Distributed RT Clock Synchronization	●
System Watchdog, Self-monitoring and Diagnostics	●
Disaster Recovery	○
Power Applications System	○
Outage management System	○
Low Voltage management System	○
Front End Processing	
Multi-protocol/channel Processor	●
IEC 60870-5-101/104	○
DNP 3.0	○
MODBUS	○
Others, please contact	○
Configurations	
Front-end processor integrated with SCADA server	○
Independent Front-end processor in single or hot-standby configuration	○
Multi-front-end processors in single or hot-standby configuration	○
Communication Adapters	
IP Communication Adapters	○
ICCP	○
SNMP	○
OPC	○
Others, please contact	○
Configurations	
IP Communication adapters integrated with SCADA server	○
IP Communication adapters over dedicated servers	○
Systems Integration	
SQL interface, CIM-compliant and SOA/REST Application Adapter	
Geographical Information Systems (GIS)	●
Workforce/Field-crew Management (WfMS)	
Asset Management Systems (AMS)	
Customer Information Systems (CIS)	
Metering Management Systems (AMI/MDM)	
Video- surveillance Systems	
Railway/Train Management Systems	
Wide-area Monitoring Systems	
Market Management Systems	
Call Center and Interactive Voice Response Systems	
Enterprise Resource Planning Systems	
Other Technical Systems	
Engineering System	
Integrated Engineering Environment	●
Integrated Configuration Tool, CAD Environment for Diagram/Symbol Editing, Online incremental/bulk changes, Import/Export Tools, Objects and Templates, Validation tools, etc.	
Integrated RTU/IED Configuration Management	●
Application-specific engineering packages	●
Pre-engineered catalogs, symbols, reports, dashboards and templates	
Version-managed Repository Server	○
Operator Training System	
Training Session Configuration and Management	○
Session Results, Playback and Resume	○
Operations Management Training	○
Advanced Management Applications Training*	○

- - Core feature in product assembly
- - Optional (Standard component)
- - Optional (Component customized according to customer requirements)
- \* - Depends on available PAC functions in the system



Extensibility

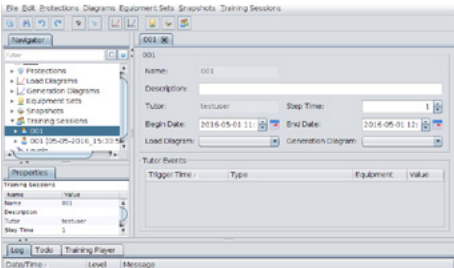
By offering standard file format import/export facilities, SQL interface, Multispeak® and CIM-compatible SOA/REST application adapters, **ScateX#** minimizes the required effort when external applications need to be integrated.

Adapters and data exchange allow users to benefit from seamless integration with external or existing systems such as geographical information, workforce/field-crew management, call center, asset management, customer information, advanced metering, video- surveillance, public information or other technical systems.

Operator Training Simulator

Designed to provide realistic training sessions for **ScateX#** power network operators the Operator Training Simulator (OTS) is a standalone system that includes the electrical network simulation engine for all voltage levels with optional protection and automation simulation engine, including telemetry and telecontrol. The OTS system may also be setup to include any set of power applications, including automation applications and the ADMS subsystem.

The training session management model allows training sessions to be created from historical or current network configurations and snapshots and executed with manual or template-based incident/fault simulation. Training sessions can be recorded for analysis with pause/resume and playback functions.



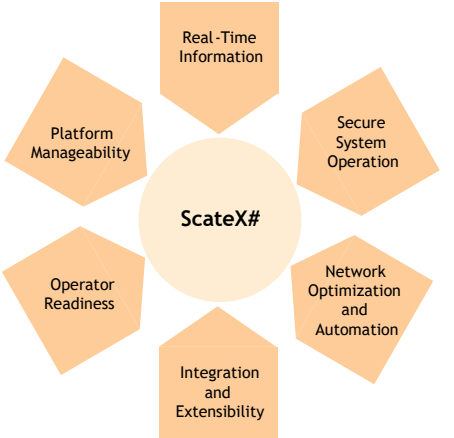
Product Availability

**ScateX#** is available in fully customizable form according to the specific requirements of each system, but is also readily available in product assemblies that target the needs of specific utility or industry application.

Applications	ADMS	OMS	DMS	EMS	RAIL	SCADA
Remote SCADA and Telecontrol Systems	●		●	●	●	●
Condition Monitoring and Infrastructure Technical Supervision	●	●	●	●	●	●
Plant Local SCADA						●
Transmission Grid Management	●			●		
Distribution Network Management	●		●			
Low Voltage Network Management	●					
Outage Management	●	●				
Renewable Generation Management	●					
Railway Electrification Management					●	

Support

The **ScateX#** flexible and open platform ensures that your system is equipped with future-proof technology and that stepwise investment strategies are not hindered. Efacec further supports users with a full range of services from training and product support, through software customization, to project management, engineering and maintenance that ensure you have the best fitting solution for your requirements considering the full system life-cycle.







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