



# Advanced Distribution Management System

## About ScateX# ADMS

**ScateX# ADMS** is the unified, modular and scalable solution by Efacec, for the ADMS segment. This solution is the result of more than 30 years of experience in grid management and 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.

**ScateX# ADMS** 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# ADMS** can scale to meet the needs of large networks and infrastructures, enabling customers to leverage stepwise investment strategies. Moreover it can be tailored to meet the specific needs of each customer to deliver unmatched cost/benefit solutions.

Recognizing that straightforward deployment, integration and maintenance is a fundamental requirement, **ScateX# ADMS** presents end-to-end engineering and management of the whole infrastructure from control room, through communications infrastructure and remote plant or field equipment. Moreover it 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 real-time dashboard
- Full set of power management applications
- Full set of outage management applications
- Real-time centralized FDIR / FLISR
- Real-time mobile integration
- Communication network infrastructure monitoring and management
- Test and commissioning environment
- Operator training system
- System historian
- Dashboards and reports
- Advanced engineering environment
- Oper API
- Seamless application and systems integration
- High availability and cyber-secure product platform

Applications	ScateX# ADMS
Remote SCADA & Telecontrol Systems	•
Condition Monitoring and Infrastructure Technical Supervision	•
Plant Local SCADA	•
Transmission Network Management	•
Distribution Network Management	•
Low Voltage Network Management	•
Outage Management	•
Workorders Management	•
Field Crews Management	•
Renewable Generation Management	•

- ### Benefits
- Immediate situation awareness and intuitive real-time operation
  - Improved system reliability and network SAIDI reduction
  - Improved network efficiency
  - Optimised crew / operator maintenance management
  - Straightforward deployment, integration and maintenance
  - Tailor-made solutions to meet the exact needs of each project

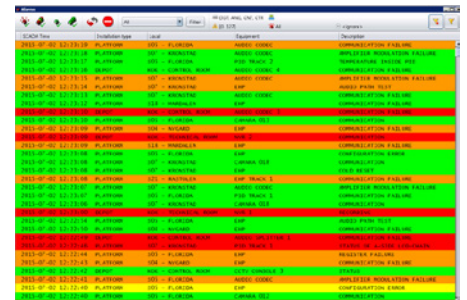
## Unified User Interface

The **ScateX# ADMS** 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.

Innovative features such as the powerful tagging engine, synchronized views, side-by-side study and real world views, on-the-fly schematics or object-oriented navigation enable unprecedented system awareness and controllability whether a conventional or operation/switching orders operation method is employed.

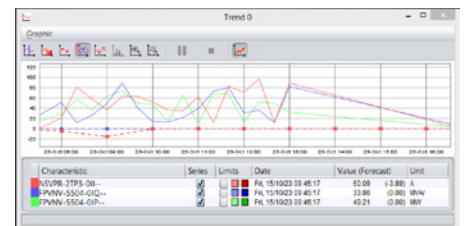
The full integration of the control centre with mobile devices enables switching work orders to be electronically sent to field crews. The crew can directly confirm the switching manoeuvres improving the visibility of other crews, increasing safe working.



## Operations Management

**ScateX# ADMS** combines the core SCADA engine, including event processing, data recording and smart alarming with topology, hierarchy and geo-referenced applications in a single object model. Features such as electronic wallboard, integration of geographic and schematic screens, tracing and topological-aware colouring and asset information are added to provide an advanced base SCADA platform for operations management.

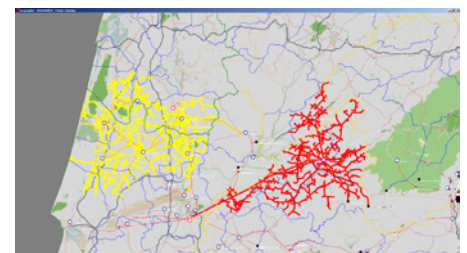
**ScateX# ADMS** also includes an historical information system (HIS) that enables long term information storage to be fed to statistical calculation engines or real-time reporting and alerts providing integrated supervisory accounting and performance management or historical data for analysis.



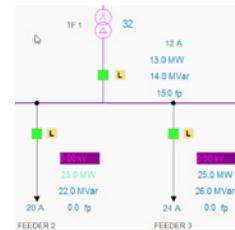
## Advanced Power Applications

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# ADMS** Power Application Software (PAS) provides a set of field-proven applications for operational support, network optimization and advanced automation. Algorithm performance allows applications to run in study mode as well as in real-time.



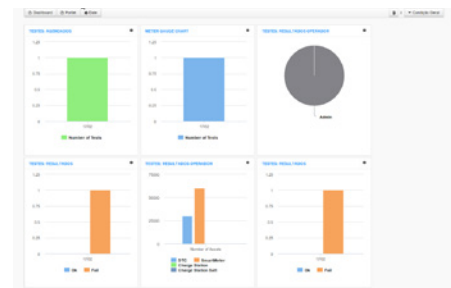
**ScateX# ADMS** was designed to allow fast and safe outage restoration. When an outage occurs, the centralized FDIR automatically generates and executes a switching order to isolate the faulty area maximizing the recovered network. If necessary, the operator may then request to the FDIR additional switching orders that may be electronically dispatched to the crews' mobile devices for manual execution. After manoeuvres 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.

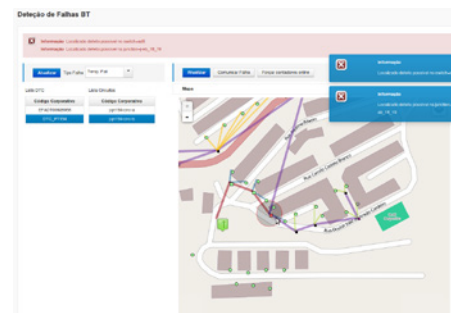
Power application functions may be deployed in multi-server scalable architectures. All PAS applications provide configuration, diagnostic and execution information that can be set, logged or displayed.



## Outage Management System

The **ScateX# ADMS** 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.

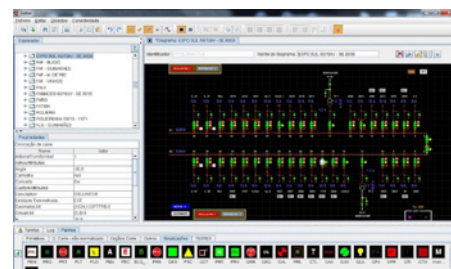
**ScateX# ADMS** provides a fully integrated WEB user interface for OMS functionalities, including the interface to the enterprise systems including IVR, AVL and MDM, customer call handling and management and incident calculation to crew field positioning, outage monitoring capability (with Quality-of-Service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



**ScateX# ADMS** stores and tracks 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# ADMS** provides the support needed to restore consumer service, all in real-time.

## Manageability

With a holistic approach, **ScateX# ADMS** 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. As network management systems handle increasing amounts of increasingly dynamic information, the value of advanced applications is 100% dependent upon the availability of an accurate up-to-date model. The **ScateX# ADMS** modelling and model management features are invaluable to help the administrator maintain system performance during the whole life-cycle.



**ScateX# ADMS** supports current engineering requirements with an online integrated interactive CAD environment that includes template-based and object-oriented model editing tools, together with powerful deep copy, 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 behaviour 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 equipment, network connectivity, SCADA model and communications model for all voltage levels of the network.



## Extensibility

By offering a REST based Open API, standard file format import/export facilities, SQL interface and CIM-compatible adapters, **ScateX# ADMS** 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 centre, asset management, customer information, advanced metering, video-surveillance, public information or other technical systems.

## Operator Training Simulator

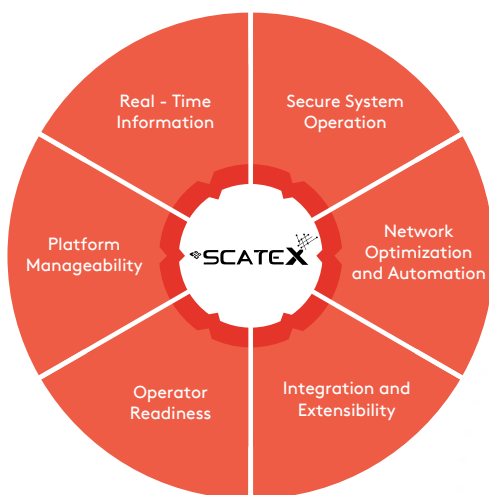
Designed to provide realistic training sessions for **ScateX# ADMS** power network operators, the Operator Training Simulator (OTS) is a standalone system that includes the electrical network simulation engine for all voltage levels with optional protection and automation simulation engine, including 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.

## Comprehensive Support

The **ScateX# ADMS** 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.



### Short Summary of Available Features

#### Unified User Interface Environment

Full vector graphics for schematics and geographic screens, lists and model browsers, advanced navigation and windowing, flexible tagging system; reports; dashboards

Advanced alarms system

Auto-generated fully functional schematics, colouring, tracing, redlining and pattern/model-driven diagrams

Side-by-side real world, study mode and engineering mode

Operational or switching orders interface; Management of planned and unplanned occurrences or outages

Multi-language

IP video integration

#### Secure Web Access and Mobile applications

#### SCADA Engine and Multi-protocol Front-ends

#### Cartography and GIS Integration

#### Historical Information System

#### Statistics, Reports and Alerts

#### Power Application System (PAS)

Operational Applications

State Estimator, Load allocation and Power Flow

Monitoring of outages

Automation Applications

Fault Detection, Location, Isolation and Reconfiguration (FDIR)

Load Shedding

Analysis and Optimization Applications

Load Profile Modelling

Short Circuit Analysis

Distribution Optimal Power Flow (DOPF)

Contingency Analysis (CTA)

Forecast Applications

Short-term Load Forecast

#### Outage Management Applications

#### Condition Monitoring and Technical Supervision Software

Communications and Telecontrol Infrastructure

#### Inter Control Centre Integration

#### Integrated Engineering System (with versioning support)

#### Distributed Real-time Bus, Scalability & Redundancy Options

#### CIM-compatible Adapters for External Application and Systems Integration

#### Operator Training Simulator

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