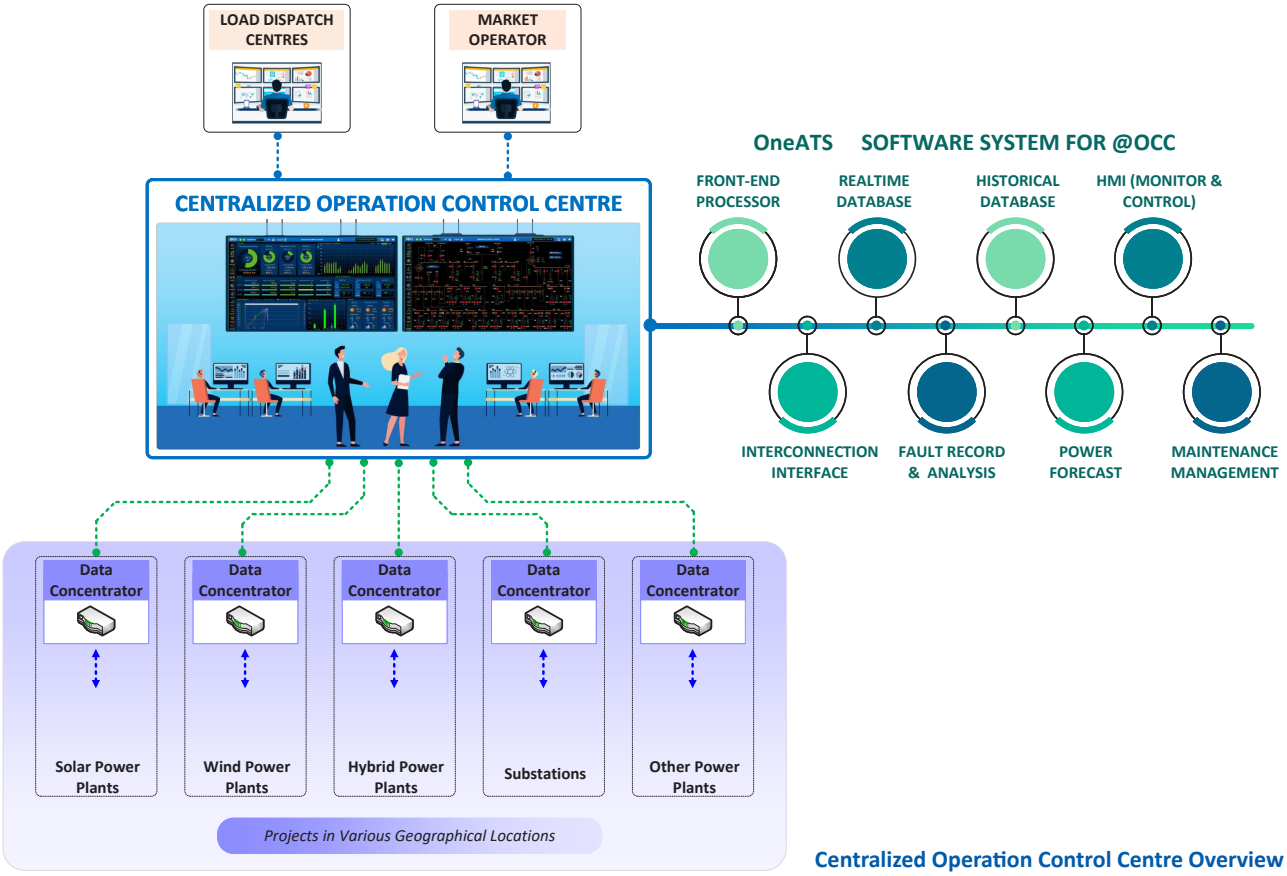
@OCC™

Centralized Operation Control Centre

@OCC™ is an advanced solution developed by ATS to establish a Centralized Operation Control Centre, enabling real-time Supervision, Control, and Management of Power Systems. Specifically tailored for operating power systems across multiple regions, groups of power plants, and manufacturing facilities, @OCC™ streamlines the management of vast amounts of real-time data with high efficiency.

Harnessing the OneATS software platform, @OCC™ integrates powerful software and a robust communication network to deliver comprehensive real-time insights, supporting rapid and informed decision-making for complex operational procedures. Built on the Smart Grid Architecture Model (SGAM), @OCC™ provides a scalable and flexible framework to support smart grid infrastructure and adapt to future demands.



Centralized Operation Control Centre Overview

System Architecture:

- **Centralized Operation Control Centre:**
  - OneATS™ Software System
  - Hardware System (Servers and Computers)
  - OT Infrastructure
  - IT Infrastructure and Cyber Security System.
- **On-Site:**
  - Data Concentrator (Server)
  - Monitoring and Control System (Existing SCADA/DCS/RTU/IEDs, etc.)

Why Choose Our @OCC™ Solution:

- **Regulatory Compliance:** Compliances with grid codes and standards.
- **Centralized Monitoring and Control with a Comprehensive SCADA:** Enables comprehensive monitoring and operation of all projects with a full suite of SCADA features specifically designed for OCC. Utilizes advanced technology in the OneATS™ software platform to automate processes and boost operational efficiency.
- **Cost Efficiency:** Lowers OPEX and CAPEX by improving planning for operations, maintenance, upgrades, and investments.
- **Optimized Staffing:** Reduces on-site staff requirements, allowing for better resource allocation and increased productivity.
- **Effective Maintenance and Management:** Ensures effective management, electricity production, and maintenance for power systems.
- **Enhanced Power Reliability:** Increases power reliability, improves quality, reduces losses, and optimizes generation efficiency.
- **Supports Multiple Standard Protocols:** ICCP/Tase2/IEC 60870-6, IEC 60870-5-101/104, DNP3, IEC 61850, IEEE C37.118, OPC UA/DA, Modbus, API, etc.
- **CIM Based:** IEC-61970/IEC-61968 (CIM) model ready for advanced applications
- **Multi Vendor Compatible:** A highly flexible platform, adaptable to various types of power system and compatible with multiple monitoring and control systems at the project site.
- **Open Architecture:** Modular design with scalable expansion capabilities in future.

Real-Time Data Management

- **Real-Time Data Acquisition:** collect both the operational data and non-operational data from various Power projects and control & monitoring systems.
- **Real-Time Data Processing:** Standardizes and processes large data sets according to CIM standards, compiling them into a unified real-time database for the owner.



Centralized Monitoring

- Specifically designed for optimal, user-friendly operation on large screens and desktop monitors.
- Integrated Monitoring:
  - Dashboard
  - Overall of all projects
  - Each project site monitoring
  - Single-line diagram
  - Asset and equipment monitoring
  - Auxiliary subsystem monitoring
  - Communication monitoring, etc.
- Alarm & Event Management
- Trending
- Tagging Management
- Support Web-based Monitoring.



Supervisory Control

- Integrated Power Control
- Equipment Control
- Supports coordination and control delegation.

Gateway and Integration Capable

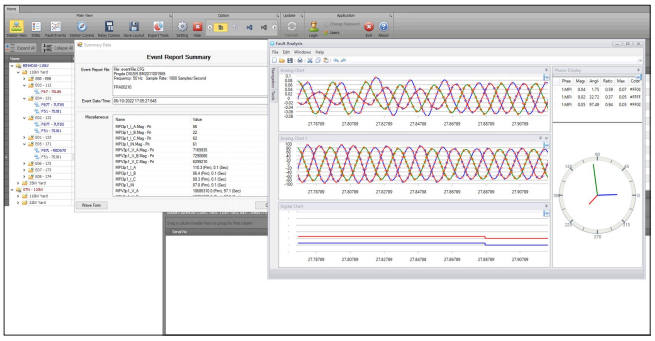
- Interface and Exchange monitor & control data with the Load Dispatch Centre/Grid Operator/Market Operator, etc.
- Interface and Exchange information & data with the Enterprise Management/ Office, etc.

Historical Data Management

- Integrated Time-series Historical Information System (HIS) for long-term storage and retrieval of operational data, enabling in-depth reporting and analysis.
- Non-SQL database structure supports high-capacity storage while maintaining fast query responses.

Analysis Applications

- Operational Report
- Plant Performance Visualization and Analysis
- Transformer Monitoring Analysis
- Play-back
- Power Curve and Chart Tool
- Historical Data Retrieval, etc.



Fault Record and Analysis

- Collect, Archive, Display and Analyze the Fault Record file (SOE, Fault Recording- FR, Dynamic Disturbance Recording- DDR)
- Independent manufacturers: SEL, ABB, Siemens, Micom, Schneider, Toshiba, GE, Ingeteam, Nari, etc.
- Support latest version of COMTRADE file format.
- Compatible protocols: IEC61850-8-1 File Services, FTP, Telnet, etc.

Renewable Power Forecast

- Power Forecast (Intra-day, Day-Ahead, Week/Month-Ahead)
- Flexible Visualization on Dashboard, Chart, Report. And Data exchange for integration.

Maintenance Management

- Asset Management
- Work Order and Request
- Inventories Management, etc.

ATS Leading of Integration

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