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| Brochure
Transmission
Management Systems

Overview

Transmission owners and operators today face new challenges due to stringent regulatory mandates to improve transmission line ratings, system security concerns due to increasing demand and the integration of renewables which is putting a strain on existing transmission systems. Additionally, recent advancements in power transmission technology have been incorporated to increase reliability and reduce costs. As a result, the need for practical, effective and reliable tools to help manage these important assets in real-time has never been stronger.

Effective management of assets involves efficient and holistic monitoring of the complex transmission network; intelligent and reliable security analysis tools for developing effective strategies to avert, mitigate and cope with system emergencies; and well-rehearsed scenarios and well-trained operators to deal with localized or system-wide emergencies, blackouts, voltage collapses, loss of critical equipment, etc.

AspenTech® Digital Grid Management (DGM) has been at the forefront of developing the next generation of energy management system (EMS) applications since the mid-1990s and is widely used by many companies across the globe to monitor, control and optimize the high-power transmission grid.

AspenTech OSI Energy Management System™ applications were developed from the ground up for effective real-time use, as opposed to the industry's practice of adopting off-line system planning tools. Efficient algorithms, effective on-line maintenance tools, intuitive graphics and user interface design provide for a powerful security monitoring and analysis environment for transmission owners and operators.

AspenTech DGM's transmission management and AspenTech OSI EMS applications have been helping many transmission owners and operators of various size and grid complexity worldwide.

From China's fast-growing and challenging transmission systems to overly burdened transmission systems in Australia, Europe or the Americas, AspenTech OSI EMS applications have been the reliable nucleus of many companies' real-time security analysis strategy.

The AspenTech OSI EMS operator training simulator is the friendliest simulation platform for effective training of system operators. Using detailed dynamic modeling of the power system and an exact replica of the control center environment, system operators can rehearse a full spectrum of system events, emergencies and restoration techniques in the most realistic settings.

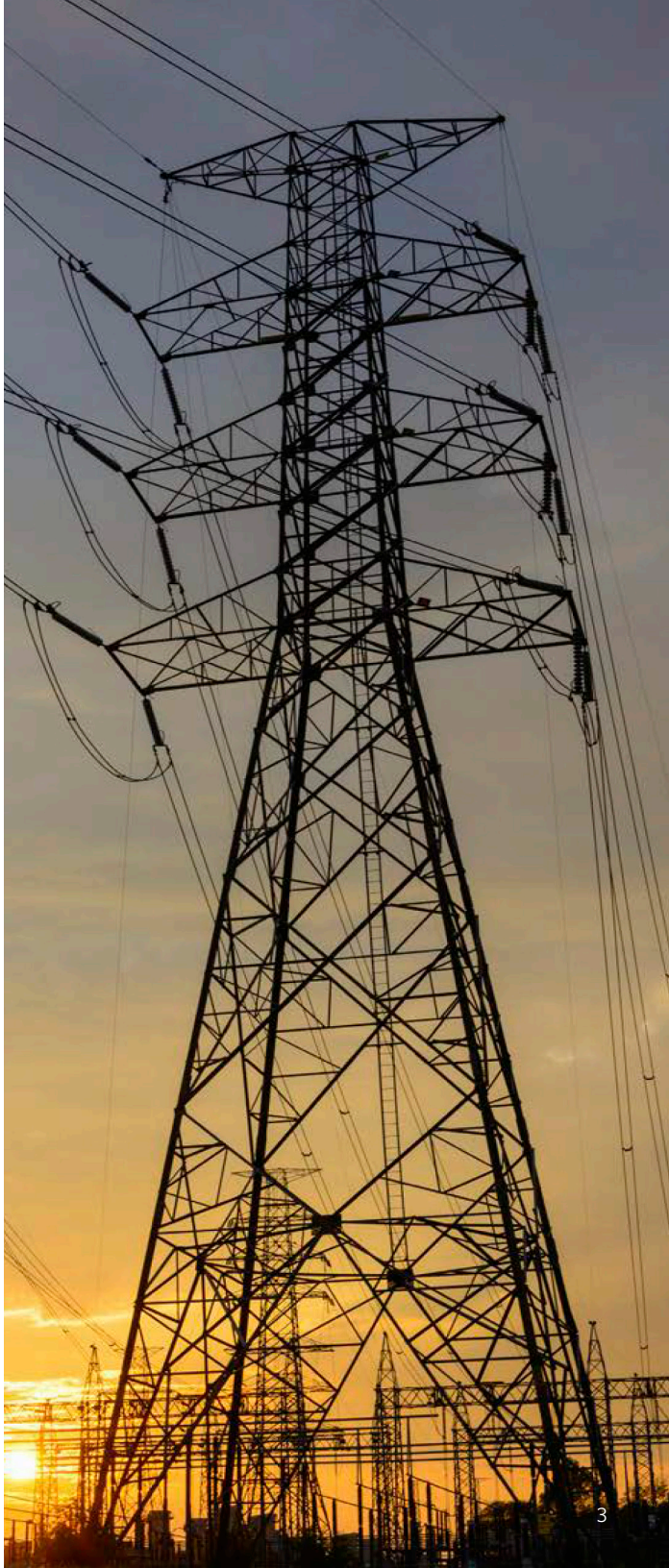
Modules

AspenTech OSI EMS - Base

The base version of **AspenTech OSI EMS** contains the transmission network analysis **(OpenNet)**—a high-performance, network security analysis system that is ideal for online security analysis, situational support, operations planning and offline engineering studies. It includes the following features: state estimation, contingency analysis, power flow, optimal power flow, short circuit analysis and available transfer capability, among others. Additionally, the base version of AspenTech OSI EMS includes a platform for the bi-directional transfer of data between monarch systems and CIM-compliant databases or applications using XML data file exchange.

AspenTech OSI EMS Operator Training Simulator

AspenTech OSI EMS Operator Training Simulator (OpenOTS) helps you regain control by giving operators firsthand experience with events ranging from system blackouts and component losses to normal and secure operations. **OpenOTS** provides simulated real-time system responses to events that let the operators practice and script their actions without risking the operational integrity of the actual power system.



AspenTech OSI CIM Studio

AspenTech OSI CIM Studio (CIM Studio) is a Common Information Model (CIM) based graphical model management tool providing user, workspace, project and model versioning support. It also helps export and import model parts in either full or incremental CIM formats. Zero additional effort is required to integrate **AspenTech OSI EMS** products with existing applications that support CIM standards.

AspenTech OSI Transient Stability Analysis

AspenTech OSI Transient Stability Analysis (OpenTSA) is AspenTech OSI EMS's real-time transient stability analysis product specifically designed to provide users with accurate and up-to-date transient stability analysis results using detailed time domain simulation based on real-time system conditions and featuring full integration with AspenTech OSI EMS's various transmission network management applications.

AspenTech OSI Voltage Stabiity Analysis

AspenTech OSI Voltage Stability Analysis (Open VSA) is AspenTech OSI EMS's real-time voltage stability analysis product specifically designed to provide users with accurate and up-to-date distance to voltage instability for the base case and credible contingency cases based on real-time system conditions, featuring full integration with AspenTech OSI EMS's various transmission network management applications.

AspenTech OSI Dynamic Ratings

AspenTech OSI Dynamic Ratings (including **Ambient Adjusted Ratings - OpenAAR** product and **Thermal Limits** product) supports ambient-adjusted ratings for transmission lines for FERC Order 881 compliance. It calculates dynamic line ratings for transmission equipment using the look-up table-based approach (OpenAAR) and user configurable mathematical model-based approach (Thermal Limits). Dynamic Ratings can work standalone and integrated with **AspenTech OSI monarch SCADA™** and **AspenTech OSI EMS**.

AspenTech OSI Small-Signal Stability Analysis

AspenTech OSI Small-Signal Stability Analysis product **(OpenSSA)** provides a real-time, continuous monitoring solution using signal processing technology based on Prony's method to identify critical system modes in the power system based on real-time Phasor Measurement Unit (PMU) data. **OpenSSA** meets many of the requirements underpinning a Wide Area Monitoring System (WAMS) and helps operators understand and manage the power system, while helping to prevent blackouts.

AspenTech OSI Forecast

AspenTech OSI Forecast (Forecast) provides web-based, short-term Load and Renewable Generation Forecasting. It is a simple and reliable short-term forecasting tool that relies on Machine Learning (ML) techniques like Neural-Network (NN) to predict load, renewable generation and rooftop solar generations with high accuracy. Forecast supports forecasting at a configurable hierarchy like multiple load areas, renewable sites or feeders and has the capability to forecast for flexible interval granularity for up to 35 days into the future. Based on AspenTech OSI Web-platform, a feature-rich user interface is supported, consisting of both tabular and graphical representations.

AspenTech OSI Outage Planning and Coordination OutPlan

AspenTech OSI Outage Planning and Coordination OutPlan (OutPlan) provides an advanced, flexible environment to define, plan and analyze power system equipment outages at transmission, generation and distribution levels. **AspenTech OSI OutPlan** was designed with recognition that industry regulatory changes have created the need for the establishment of strict guidelines for interdepartmental communications; formal processes for outage submittal, validation, approval and scheduling; and proactive customer communication for planned service interruptions.

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About Aspen Technology

Aspen Technology, Inc. (NASDAQ: AZPN) is a global software leader helping industries at the forefront of the world's dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation and maintenance life-cycle. Through our unique combination of deep domain expertise and innovation, customers in asset-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence.

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