e-terra platform 3.0
The Power to Adapt
Adaptable System for a Dynamically Changing Industry


By any measure, the changes that occurred in the electric utility industry in the last 20 years are anything but simple. They introduced incredibly complex problems to solve, a lot more players and technology than ever before. Yet, in this world of drastic changes, one constant remains: the utilities’ mandate of providing a secure and reliable system operated efficiently.

The new generation e-terra platform 3.0 was specifically developed to quickly adapt to this dynamic environment our customers operate in. Designed as a suite of modular and consistent applications, e-terra platform 3.0 has a flexible architecture that maps your business processes. Whether you are using standard applications or have multiple custom-built ones, e-terra platform 3.0 can be easily configured to meet your specific needs and maintain existing customizations.

The SCADA, network security analysis, simulator, and generation management subsystems accommodate your current and future needs for:

- Renewable energy resources integration;
- Distributed energy resources;
- Model and PMU-based on-line stability applications;
- Generation fleet optimization;
- Enterprise message bus integration, CIM-based modeling, and many more.

Providing real-time, study, and simulated environments, e-terra platform 3.0 is the ideal solution for real-time monitoring, control, and operation planning as well as historical and post-mortem analysis. All these functions are available for both network security analysis and generation dispatch, integrated via a highly available technology, as demonstrated by decades of experience and hundreds of systems deployed across all continents.

Improved Electric Power Grid Reliability and Security

Improving the grid’s security and reliability is a combination of long-term infrastructure investment, advanced analysis applications, and continuous operational improvement. With e-terra platform 3.0, you can make intelligent use of modern communication and control technologies to predict and anticipate abnormalities that may lead to costly events within the power grid.

By anticipating problems and preparing in advance for asset failure, accidental faults, weather storms, volatile power trades, transmission congestions, or unexpected variation of the renewable power production, operators can mitigate losses and damages.

In today’s highly interconnected power system environment, you need advanced network security applications that are fully integrated with your real-time SCADA database and can manage the most complex network models.

Only e-terra platform 3.0 is capable to perform advanced network analysis in real-time for the largest interconnected network models, covering steady state network analysis, dynamic stability analysis, and synchrophasor-based (PMU) applications.

e-terra platform 3.0 - The Power to Adapt

The new e-terra3.0 is the most advanced, fully integrated, smart grid-ready suite of products for the 21st Century Grid. e-terra3.0 is developed by the world’s leader of energy management and electricity market systems and THE only player in the industry who offers a full solution from market-to-meter for the new grid. Your Grid. Reinvented.
Real-Time Data Across the Enterprise

e-terra platform 3.0 includes and integrated corporate information system that relies on relational databases from leading providers. Continuous recording of SCADA measurements has an integrated SCADA journal that helps analyze disturbances and reconstructs important events.

Desktop applications can be easily linked to the real-time data through open access API’s to the e-terra platform 3.0 database.

e-terra platform 3.0’s new and powerful graphical user interface (UI) displays data that is relevant to the operators, analysts, and supervisors. The web-based UI optimizes the data and visualizes it in easy-to-use manner.

Through a set of power tools, such as Asset Management SOA adapter or the CIM-based modeling environment, you can provide access to any data across the enterprise.

Deployment of Renewable and Distributed Energy Resources

e-terra platform 3.0 can model, monitor, and control renewable and distributed energy resources (DER) to respond to power balance changes. This function is possible by using the Renewable Operation Portal. e-terra platform 3.0 can anticipate potential problems and provide recommendations for remedial actions.

Using this function, operators get more information about the DER generation, better forecast, reduced uncertainty, optimized generation dispatch and control, and overall improved grid security.

Optimized Generation Fleet

The new generation e-terra platform 3.0 includes and integrates advanced and flexible optimization engines. They consider a very large number of input data and constraints: all your generation and storage resources of various types, multiple types of constraints, and multiple market environments. The engine also looks at combining the various types of resources you have - traditional (hydro, thermal, combined cycle) with more distributed, less predictable sources (solar, wind, demand response) to give you the most optimal schedule for various time horizons (yearly, short-term, or look-ahead).

Robust Core Technology

e-terra platform 3.0’s robust core technology provides your control room with a solid foundation for high availability and performance.

- e-terra source is the CIM-based modeling tool, which supplies information to all systems that use a power system model;
- e-terra habitat provides the real-time data and process management services, including the centralized alarm management;
- e-terra browser provides all the graphical user interface services, including intelligent viewers for advanced visualization of the grid’s behavior;
- e-terra trust is the cyber security environment for all your real-time systems in use in your control center;
- e-terra archive is the enterprise’s historical information system and data analysis environment.

Optimized Generation Fleet

The new generation e-terra platform 3.0 includes a suite of highly advanced subsystems, which address your functional needs:

- e-terra scada for data acquisition, processing, and control;
- e-terra transmission for network security analysis;
- e-terra generation for generation dispatching;
- e-terra loadforecast for prediction of the demand;
- e-terra simulator for power system simulation and training;
- e-terra vision is the wide area management tool for situational awareness. It provides grid security dashboards and an innovative task-oriented user interface;
- e-terra disgen and e-terra renewableplan manage the Renewable & Distributed Energy Resources (DER); and
- e-terra phasorpoint for PMU monitoring and advanced on-line stability applications.

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e-terraplatform 3.0 - Lower Costs of Operation and Maintenance

e-terraplatform 3.0 is designed to provide high performance and availability while lowering operation and maintenance costs.

To achieve the lowers costs of IT assets, e-terraplatform 3.0’s core technology includes portable software services and eliminates costly proprietary operating systems. e-terraplatform 3.0 is certified across multivendor enterprise servers using standard operating systems like Linux® and Microsoft® Windows®.

e-terraplatform 3.0 is a breakthrough in the control center computing arena with its full use of 64-bit technology on Intel® platforms, both at the server and operator workstation levels. To further reduce your costs, e-terraplatform 3.0 supports Virtual Machine environment, thus taking advantage of the optimized and highly available computing resources.

We reduce your costs even further by using open standards, such as Common Information Model (CIM). The CIM standard is fundamentally changing the business process that are shared across interconnected utilities. Alstom Grid is one of the original members and a leader that helped shaped the CIM standards through various standards organizations, such as IEC and ENTSO-E.

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We are also one of the pioneering enterprises that supported and promoted the use of standards for communication protocols. We contributed to the standardization and convergence of the Substation Automation, Market Management, and Control Center systems around industry standards such as CIM and IEC 61850. These standards make the acquisition of data from the field a lot more efficient and affordable.

We have an undisputed record of upward compatibility between product releases and we guarantee to preserve your investment over the years through our Upgrade program.

e-terraplatform 3.0 - A key Asset for Your Operations IT

e-terraplatform 3.0 is the single environment operators and analysis can rely on to perform all functions required in today’s control rooms:

- Supervisory control and wide area network security monitoring
- Power balance monitoring and control
- Management of renewable and distributed energy resources
- Preparation and scheduling for next hours/days/weeks operations
- Disturbance analysis
- Prediction of events and simulation of alternative operations procedures
- Asset management and equipment maintenance prioritization
- Reporting for regulatory compliance

Alstom Grid’s e-terra suite expands beyond the grid’s control room and can be used to build a consistent architecture for Operation IT systems including:

- Substation systems for acquisition, automation, protection, and control;
- Distribution management system for distribution companies;
- Market management systems for independent operators;
- Asset Management and Condition Monitoring systems;
- Generation fleet management systems for market participants; and
- Telecom system infrastructure designed for power companies.

Customer Benefits

- The most advanced and most reliable solution from the industry’s leader
- Lowers your operational and maintenance costs
- Integrates cyber security and protects your IT assets
- Adapts and matches your operation requirements and business processes
- Smart Grid – ready
- Improves your grid’s reliability and security
- Provides access to real-time Grid data across the enterprise