

Space-Time Energy Composite for the End-to-End Smart Grid

Space-Time Energy Composite for the End-to-End Smart Grid: Delivers profitable demand response, energy reliability, and sustainability by simplifying management of smart assets, distributed resources and optimal resource balancing.

Features:

Alerting for Wide Area Management to improve system reliability by spotting and islanding disturbances in the grid

Grid Visualization with Analytics and Process Workflow to minimize business disruption and improved method to determine root cause of an event

Guided Demand Response Procedures for Meter Provisioning

Demand Response features for evaluating DR contribution of assets and efficiency

Enablers for Management of Distributed Energy Resources

Condition Based Maintenance enabling features for prioritized and optimized maintenance of wind turbines

Asset Information Access for Optimal Resource balancing of renewables

Optimized Asset Selection for Load Drop Curtailment

Automated Reporting for Compliance with Regulatory Guidelines

Identification of Self-Healing Assets in the grid ecosystem

Benefits:

Energy Sustainability & Reliability

Optimized Demand Response Programs

Reduced Errors and Defects

Automated Regulatory Compliance

Improve Customer Satisfaction

Space-Time Energy Composite delivers one unified geospatial-temporal analytics and remediation system for managing the end-to-end Smart Grid, helping cross-functional teams at utilities achieve their Smart Grid vision. Generation, transmission planning and operations teams use the Space-Time Energy Composite solution for visual situational awareness enabling fast action for power system control and risk mitigation. The solution is used to manage and analyze demand response and load curtailment, enable condition based maintenance for renewable energy assets such as wind turbines, and deliver Wide Area Management (WAM) alerts through visual layering of information. Distribution operations and control center operators use Space-Time Energy Composite to enable smart operation and management of distributed energy resources (DERs), profitable demand response economics, and optimal resource balancing. Space-Time Energy Composite for the end-to-end Smart Grid helps utilities reduce customer service interruptions.

The old saying, “use it, or lose it” applies here. Smart grid management means smartly matching energy supply and demand in real time, to make the best use of the energy you have, when you have it. This requires fully informed space-time decisions – how much is delivered where, from what source, when and under what operational, financial and social conditions and consequences. This is a complex balancing act – not unlike juggling knives while standing on a tight rope. The consequences of failure can be costly.

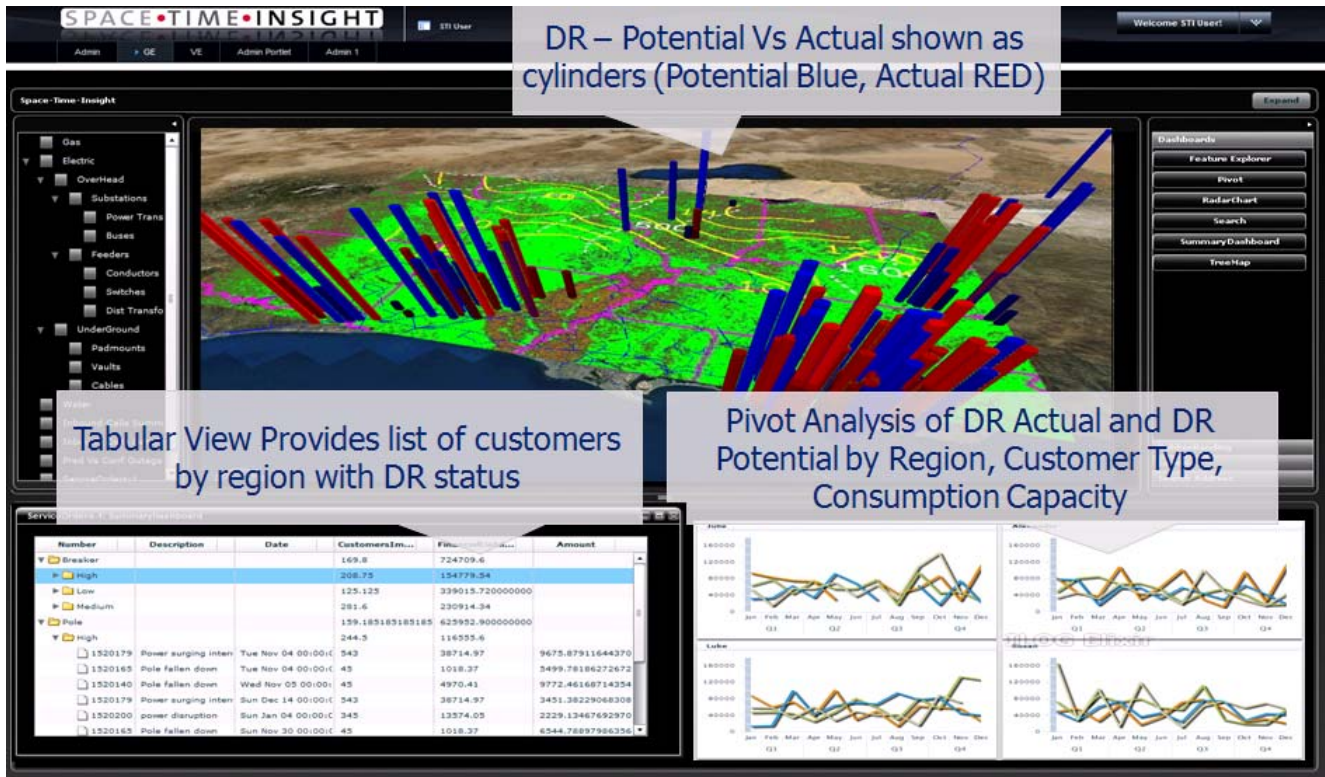
HALFWAY SOLUTIONS ARE HALFWAY SMART

Sure, you've got data. You have analytics. You've got maps. You have access to demand and supply information. You've got processes to shed load or source additional energy during peak demand periods and markets where you can sell excess production. You can integrate renewable energy sources. Perhaps, there are even industrial and consumer smart meters giving you their status in real-time.

Unfortunately, all these key bits and pieces, if they exist, are in separate systems. They lack sufficient integration and a common interface for taking fast action. You wouldn't drive your car by watching the map on your GPS navigator instead of looking through the windshield. Why make demand response decisions based on two-dimensional, partial abstractions of reality? Even fruit bats with brains the size of marbles use sonar to capture a real-time, physical view of where they are going.

Space-Time Energy Composite will broaden your perspective with visual reality and improve demand / response effectiveness.

Space-Time Energy Composite provides true situational awareness for the end-to-end Smart Grid ecosystem ensuring timely, reliable, cost-effective and sustainable execution of the energy delivery value-chain spanning from generation to transmission, distribution to Home Area Networking and back to generation. Tight integration into backend systems ensures continuity of the energy value chain into the meter-to-cash lifecycle. Real-time identification of the best participants for load drop is enhanced by visual analytics for minimizing the business disruption of load shedding and balancing it with a utility's financial, operational and regulatory concerns. Interactive displays of supply and demand backed by pop-up, online action scripts are overlaid on satellite images and linked directly to workflow to deliver fast, intuitive demand / response.



Space-Time Energy Composite for the End-to-End Smart Grid Features & Benefits

- **Alerting for Wide Area Management** to improve system reliability by providing situational awareness of disturbances and enabling rapid response
- **Demand Response Procedures** for load curtailment requests, including load saving simulations
- **Demand Response Management** features to evaluate DR contribution of assets, pricing strategies and SLA compliance
- **Enablers for Management of Distributed Energy Resources** of renewable resources such as wind assets by monitoring operating parameters, and wind forecast data
- **Optimized Asset Selection for Load Drop Curtailment**
- **Grid Visualization with Analytics and Process Workflow** to minimize business disruption, and providing a visual tool to help determine the root cause of an event
- **Condition Based Maintenance** features for prioritizing and optimizing maintenance of wind turbines based on user defined guidelines
- **Automated Reporting for Compliance** with Regulatory Guidelines