



OT/IoE Integration

What does this mean?

The convergence of Operations Technology (OT) and IoT is well underway. The astronomical challenge facing grid planners and utilities is connecting the ancient grid to modern complex systems. **Resulting in the growing need to create a bridge between the operations in the physical world and the advanced digital sensors being deployed across the network.** Integrating these two essential utility facets is key to smoothly transitioning to a smart-grid.

When speaking about the OT/IoT convergence within the power sector, a more pertinent term, IoE (Internet of Energy) encompasses many of the challenges facing grid operators. It involves using the grid-connected devices to optimize and manage energy distribution more effectively. But before the billions of these devices emerge within the network and begin altering the flow of energy, it is imperative that grid operators can view and understand grid dynamics through the sensors which monitor this flow.

This entails linking existing Operation Technologies (OT) with thousands of sensors active in the network.

A lack of visibility

Utilities today certainly do not lack data. Many have data silos in various databases and platforms, spread across departments and have no way of accessing it on demand. As a result, a huge amount of value is being left on the table for teams depending on data. Without a one-stop-shop for all their data resources, it is virtually impossible to use in related reports, dashboards and forecasting models. Accuracy is generally the casualty.

Unleashing a Utility's Data

Understanding today's trends should be sufficient for utilities to begin the digitization of their grid. Data is a utility's new crude oil, however crude oil is a finite resource, whereas data, conversely, is ever-growing, ever-generating.

Forward thinking utilities are beginning to understand the importance of building a digital representation, or 'digital twin', of their physical assets. This takes the form of documenting and aggregating existing data from all resources at their disposal (operational historians, SCADA, AMI/AMR records, GIS, third-party devices, generation and billing data, etc.) and powering the operations team with a tool for holistic grid visualization.

For grid operators to gain clear insight into the real-time dynamics of the grid, and to maximize accuracy, all measurement data must be accessible from one location. With the ability to manage and maintain an understanding of this diverse energy flow, all areas of the grid can be effectively monitored and analyzed. And as we progress further into a renewable world, greater forecasting capabilities and real-time insights will become crucial to maintaining reliability and resilience.

Convergence of grid operations and IoE

If utilities are to harness the true value of all their data and prepare for a smart-grid future, a tool which allows holistic visualization of all sensors in the grid is essential. A tool which extracts information from all data lakes across the entire organization and which enables analytics and operations teams to visualize the grid's real-time dynamics.

As the grid becomes more dynamic, so must the sensors which monitor it. SCADA devices, smart-metres and reclosers provide valuable insights, however do not provide the adaptability and flexibility to changes which are increasingly important in today's grid. Analytics teams must leverage dynamic and static sensors with a flexible tool to manage them all.

Continuous Improvement and Preparation for the Future

Awesense's True Grid Intelligence (TGI) platform allows utilities to visualize and understand the

"The rapid adoption of IoT-enabled complex machines — and their use with OT platforms — will enable the use of "digital twins" to manage, monitor and maintain machines."

- Kristian Steenstrup, Gartner

dynamics of their network holistically. TGI integrates time-series data with existing utility geospatial data, and sets up a flow of information from every sensor in the grid. Moreover, Awesense's easily deployable, cost-effective Raptor sensors can quickly supplement data sparse areas, and shift location when required. In this way, grid operators can unleash an entirely new way to interact with and manage their analytics.

The grid of tomorrow requires accurate data, and Awesense's expertly designed technology is built to provide exactly that.

Book a demo at [awesense.com](https://www.awesense.com) to learn more.



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