



Utilities Application Brief

As electricity demand increases and current generation, transmission and distribution infrastructure ages, electric utility companies are facing a number of new challenges to manage business and better serve customers. Companies must expand and support operations to remote substations; improve and strengthen communications and network security; invest in smart grid initiatives to support energy conservation; and ensure businesses operate through any threat or disaster.

For these reason, it is more challenging than ever for utilities to monitor, control and integrate operations using legacy communications network infrastructure.

With the explosion of the Internet and IP-based technologies and applications, utility companies have been upgrading core communications infrastructure at primary facilities, but in many cases this has not yet translated to the wider network and remote sites. New security requirements, improved monitoring and control applications, and Voice- or Video-over-IP technologies have utility companies looking to increase capabilities at remote sites.

Satellite Benefits

- ◆ Expand network reach
- ◆ Enhance network security
- ◆ Support smart grid initiatives
- ◆ Ensure business continuity

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One technology having a positive impact helping utilities reach remote locations, overcome bandwidth challenges and advance operations is IP-based broadband satellite communications. Advancements in satellite communications now enable two-way, real-time communications to overcome many challenges of legacy satellite networks. One company enabling IP connectivity to the most remote locations and helping utility companies overcome new business challenges is iDirect.

iDirect – The Industry Standard for Reliable, Remote Connectivity

A significant number of utility substations are found in distant, remote locations. For this reason any network solution must be both far reaching and extremely reliable. Satellite technology enables remote location connectivity to run new broadband applications reliably and efficiently while also managing legacy SCADA (Supervisory Control and Data Acquisition) network performance and response times.

One advantage of an iDirect solution is that it offers real-time broadband connectivity without sacrificing the reliability needed to run SCADA communications. Data can be prioritized based on the specific needs of each application on the network. This means that networks can support business-critical SCADA applications while enabling new higher bandwidth applications like Voice- or Video-over-IP without sacrificing reliability.

An iDirect network is built using the latest in satellite communication coding technologies: DVB-S2 with Adaptive Coding and Modulation (ACM). This provides two benefits -it allows the satellite link to automatically adjust power levels to remain connected in the most adverse weather conditions, and is extremely efficient in improving network throughput performance. The result is a dependable and cost-effective solution for connecting remote sites into the core network.



iDirect's integrated IP-based platform enables utilities to have highly reliable and efficient connectivity for traditional narrowband SCADA requirements while supporting broadband applications at remote locations.

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Supporting and Extending Connectivity

Communications requirements at remote sites are rapidly increasing. The need for real-time data exchange is critical to operations providing the information, connectivity and control that management requires. Extending a high-speed network or Virtual Private Network (VPN) enables file sharing, video or similar broadband services.

As the demand grows for more advanced substation automation applications, so does the demand for greater bandwidth requirements for remote sites.

Gain reliable, 24/7 remote network access across the most expansive areas with an always-on, high-speed connectivity network enabled by iDirect technology.

Meeting Security Regulations

New stringent security standards impact utility companies around the globe. In the United States NERC-CIP (North American Energy Reliability Corp. – Critical Infrastructure Protection), standards are driving electric utilities to demonstrate auditable surveillance measures to better protect critical assets, forcing utilities to evaluate new secure communications solutions.

Utilities can meet new security requirements with broadband applications like state-of-the-art video surveillance and monitoring systems that help detect intrusions at remote sites from a central location, better protecting valuable assets.

iDirect's secure, closed network configuration is the ideal platform for monitoring critical assets in even the most remote facilities. And with AES data encryption, it is possible to encrypt all data sent over the network for increased security.

Investing Wisely in Smart Grid Initiatives

Smart grid applications come with substantial connectivity challenges. For instance, green power generation sites such as solar and wind farms take utilities into remote locations and challenging terrain, far removed from core operations and the reach of terrestrial communications networks.

Further, developing a smart grid requires more precise monitoring of energy supply and demand patterns as well as real-time fault detection in distribution lines. This means utility companies need real-time visibility

iDirect provides the highly secure platform for connecting clean and renewable energy power generation remote sites.



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into all areas of the distribution networks, no matter the location, in order to gather data and monitor status from all of the assets on the network.

With iDirect technology, investing in smart grid initiatives is a win-win for customers and utility operators. As energy and utility companies implement upgrades of legacy networks to accommodate smart grid technologies, companies also deploy smart meters and sensing devices in remote areas. The iDirect platform provides a higher bandwidth backhaul solution for remote rural meter or sensor data aggregation sites, thereby providing an always-on high-bandwidth connection regardless of location.



Ensuring Continuity of Operations

Traditional terrestrial communications infrastructures can experience outages for any number of reasons –environmental factors, human error, and even malicious intent. In every case, the ability to maintain business continuity to critical sites both during and after the event is vital.

Downtime and lost access to key information for even short periods can do irreparable damage, impacting both revenue and reputation.

iDirect provides utility companies a truly diverse communication path to maintain back-up communications in the wake of disasters and communication circuit failures through hub and link redundancy solutions, enabling high-speed business continuity over satellite, for 24/7 connectivity that's always available.

Smart, Cost-Effective Solutions for Constant Connectivity Anywhere

Expanding requirements and global industry developments are bringing new demands to utility companies and impacting how they monitor, control and integrate operations. The right network infrastructure is essential to effectively extend the reach of critical business applications and improve operations.

Whether a utility company directly manages its communications network or works with iDirect's global network of service providers, iDirect provides today's forward-thinking utilities always-on, high-speed connectivity to the most remote areas of the world, helping to streamline operations and improve business efficiency.



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