ST Engineering

IoT SOLUTIONS FOR UTILITIES

IoT Within Reach

The internet of things (IoT) is a steadily growing billion-dollar market largely driven by companies undergoing digitization for greater efficiency and transparency, as well as by 5G and emerging applications like smart cities. Satellite's inherent capabilities — such as its ability to reach remote areas, its ability to scale, to extend coverage for other providers — make it an essential part of a hybrid network needed to support an interoperable IoT system.

IoT and the Utilities Market

Demand is expected to double in the utilities market over the coming decade, and many companies are preparing for this with increased investment into smart grid infrastructure, automation, redundancy, predictive maintenance, and the modernization of the poles and wires of the grid.

However, utility companies will need to make significant changes in their business models to achieve the operational efficiencies needed to cater to these changes. For example, reducing or optimizing costs to serve customers IoT connectivity can give utility companies data and insight on operations from generation to distribution. This enhanced visibility can reduce the manpower and service visits necessary to make repairs, decreasing downtime and thereby enabling utilities to streamline operations, meet demand spikes, increase customer satisfaction, and maximize revenue.

iDIRECT

IoT Application Summary

Network monitoring - SCADA: Utilities can continuously monitor the distribution network for voltage fluctuations, outages, and peaks in service demand. This also applies to water flow and pressure.

Recloser monitoring and reconfiguration: Reclosers are high voltage electric switches on power lines. Reclosers automatically shut off power when trouble occurs and are designed to programmatically reset when a problem has been resolved. With IoT connectivity, utility companies can monitor reclosers for fluctuations, service demands, and quickly react in case of outages.

Online transformer monitoring: Power transformers are vital to power transmission and distribution systems. Periodic monitoring is often impractical, as transformers are geographically dispersed and highly dependent on manual inspections. Online monitoring enables utility companies to monitor transformer parameters like oil levels, power overloads, temperature, and transmission to a smart grid monitoring system.

Automated meter reading: Automated metering infrastructure (AMI) enables the collection and monitoring of water, gas, and electricity usage for residential and industrial customers. Satellite IoT extends the coverage of AMI and replaces the need for onsite meter readings, reducing manual inspection costs and improving reliability. This data enables utilities to monitor and optimize operations about pressure, flow, and transmission loss across their entire network.

Service fleet tracking and field force automation: Utilities have large, deskless workforces that use a number of applications and devices to communicate and provide real-time data back to their head offices. Reliable IoT connectivity enables the collection and delivery of this data regardless of the location, reducing fleet costs and increasing crew safety.

IoT Within Reach With ST Engineering iDirect

At ST Engineering iDirect, our IoT Solutions serve all of these data requirement use cases. Our Evolution, Velocity and Dialog multi-service platforms are ideal for fixed and mobility applications that range from high to very high data rates (HDR) and that require highly reliable and complex network configurations.

However, we recognize that IoT requirements also exist in the low data rate (LDR) and medium data rate (MDR) market segments. Service providers that want to build a new IoT service offering for these markets, or that are new entrants into the IoT market in general, require a highly efficient, cost-effective solution and flexible business model.

That's why ST Engineering iDirect has launched our flexible IoT Services to supplement our highly successful platforms and to ease the entry of service providers into the IoT market. This new LDR and MDR offering provides customers with a complete connectivity solution that's built on a flexible service enablement platform paired with IoT-as-a-service options. With our scalable Evolution, Velocity, and Dialog platforms and our small form-factor IoT terminal, powered by hiSky, we can support flexible business models for immediate market access of fixed and mobile IoT environments while reducing the upfront capital investments and operational complexity usually required to launch an IoT platform and service.

At ST Engineering iDirect, our IoT Services are ideal for LDR (small data bursts of 30 Kbps or 1–2 MB per month usage) and MDR (continuous, on-demand throughput of 10–500 Kbps) applications. Our solutions utilize a family of compact, lightweight IoT terminals that feature a tightly integrated satellite modem and flat-panel antenna design in Ka-band or Ku-band variants.

Need more data than that? Our iQ and MDM series modems on our Evolution, Velocity, and Dialog multi-service platforms are ideal for fixed and mobility HDR IoT applications.