

Why Do Utilities Need Communications Networks?

SUMMARY

Energy and water companies power our economy and digital lifestyles. We rely on electricity, water and natural gas for just about everything we do from the minute we wake up and even as we sleep.

In order to keep the energy and water flowing, utilities own and operate their own communications networks that enable the safe, reliable and secure delivery of these essential services. Not only do these networks help utility personnel update and maintain the wires, pipes and meters that make up our nation's utility infrastructure, they are also absolutely essential for protecting critical infrastructure and national security.

The communications networks operated and maintained by utilities include wireline and wireless systems that traverse all kinds of terrain, stretching from cities to farms, cutting across multiple states. They provide mission critical voice and data services for private internal communications. Some utilities also leverage their communications networks to support wholesale and retail commercial communications services.

UTC POSITION

As the voice of the energy and water utilities in the technology space, the Utilities Technology Council (UTC) is working with our members, vendors, equipment providers and policymakers to develop innovative policy, business and technology solutions that protect and promote the development of utilities' Information and Communications Technology (ICT) systems. UTC provides education,

networking opportunities, information and advocacy on a variety of matters related to utility telecommunications and IT, including cybersecurity and IT/OT (Information Technology/ Operational Technology) convergence.

Established after World War II, UTC has grown into an international association for all types of electric, gas and water utilities and other critical infrastructure industries in the United States and Canada, as well as South America, Europe and Africa.

BACKGROUND

Given the importance of water, gas and electricity to our lives, utility communications networks must be highly resilient, reliable and in many cases stronger than traditional commercial services. As an example, electricity linemen must be able to communicate with each other when restoring service after a storm, making routine repairs, or deploying new technologies. Any failure of these networks can have catastrophic results and could jeopardize life, safety, health, and even national security.

These networks have extended back-up power, redundant and diverse networks, and hardened/secure infrastructure and ruggedized equipment, so that communications are protected against power outages, single points of failure and threats from physical and cyber attacks.

The reliability and resiliency of these communications networks have been proven during major storms. Indeed, utility communications networks typically remain largely operational

during and after major storms, while other commercial communications systems can fail. For example, after the 2012 Derecho, these networks helped to reduce the duration of power outages significantly by automatically rerouting the flow of power to homes and businesses. Utility communications networks help to support security protocols to protect utilities from both cyber and physical attacks.

Just as important, these networks are the key to smarter, more efficient energy and water systems. Utility communications networks enable the greater use of smart grid devices and the Internet of Things (IoT). These exciting developments will transform how we use and consume energy, and they also increase demand for communications capacity and coverage.

In preparation for this change, energy and water providers are deploying fiber-optic systems deeper into their transmission and distribution infrastructure to support tools that promote utility service reliability. Utilities are also expanding their wireless communications systems beyond substations and into homes and businesses. This enables new technologies that will give consumers greater control over their energy usage and give utilities greater situational awareness about their systems. This becomes even more important with the growth of plug-in electric vehicles (PEVs) and distributed energy resources (DER), such as rooftop and community solar. Some utilities have also leveraged

their fiber networks and wireless systems to provide broadband and mobile radio services to communities across America, including homes, businesses, schools, hospitals, libraries and government institutions, particularly in unserved and underserved areas.

ABOUT UTC

The Utilities Technology Council is the global trade association dedicated to serving critical infrastructure providers. Through advocacy, education and collaboration, UTC creates a favorable business, regulatory and technological environment for companies that own, manage or utilize critical telecommunications systems in support of their core business.

UTC was founded in 1948, to advocate for the allocation of additional radio spectrum for power utilities. Since then, UTC has evolved into a dynamic organization that represents electric, gas and water utilities, as well as natural gas pipelines, critical infrastructure companies and other industry stakeholders.

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