Airspan for Utility Communication and Smart Grids

Enabling Smarter, Faster Communication

Airspan solutions offer advanced functionality and high bandwidth grid communications reducing labor-intensive costs while increasing efficiency and visibility

Smart Grid is a term attributed to next generation utility networks in which broadband telecommunications is overlaid on a utility's distribution grid to enable 'smarter' performance. The 'smart' grid optimizes the utility's assets and operating efficiency, communicates usage information in real-time, enables consumer participation, and enhances overall reliability, security and quality.

Utilities must maintain grid reliability while also vastly increasing the communications complexity by upgrading the grid to support real-time two-way broadband communications from the Utility Operations Center all the way to the consumer's meter. Utility grid communications are being designed to support machine-to-machine and low latency connectivity, while retaining the zero fault-tolerance of grid operators and public utility commissions.

The overall goals of a smart grid are to bring the utility into the next generation of technology, run a more efficient business, save on operational costs - which later translate into consumer savings - and to become more environmentally friendly (green).

In order to accomplish this, the power and energy sector must incorporate several pieces that allow real-time, two-way broadband communication across the grid. Each consumer location (such as a home or business) must have a piece of equipment, collocated with the meter, that communicates information such as usage, failures, and demand-response triggers to another unit, which aggregates the information of multiple meters and ultimately communicates the aggregated data to the main grid operations center.

WiMAX is an ideal technology for smart grids, as it allows for the two-way communication, remote monitoring and control of the grid, quick and easy installation as well as broadband speeds. Furthermore, on a WiMAX network, utilities can remotely locate, isolate and restore power outages, thereby increasing the stability of the grids. Additionally, the multiple megabits supported by WiMAX significantly outpace the bandwidth supported by outdoor Wi-Fi, Digital Cellular or proprietary solutions – this gives grid operators an ability to not only address the primary meter communications requirements of the network, but also the ability to leverage a common platform for real property management, mobile workforce connectivity (including VoIP support) and camera security backhaul.

Airspan

Addressing Smart Grid Communications Needs

Airspan has reliable, robust and secure connectivity solutions that are ideal for grid managers. With standardized WiMAX products in licensed, lightly licensed and unlicensed frequencies ranging from 700 MHz to 6.0 GHz that offer quick and affordable installation, Quality of Service (QoS) – the technology that allows for prioritization of data – and highest quality wireless connectivity, Airspan can help utilities become more efficient and greener enterprises.

Most importantly, Airspan offers truly broadband speeds with very low latency, an essential part of a smart grid network. In addition to simple usage and meter reading applications, the network must be able to communicate bandwidth-demanding applications such as mapping, video tools for mobile workers, or video services for facility monitoring.

Additionally, Airspan equipment is suitable for a variety of deployment scenarios whether in rural or urban regions, extreme weather conditions, challenging terrain or low population density.

The Airspan Solution

Airspan multi-technology wireless systems allow Utilities to create next generation communication, using two distinct architectures:

- Wireless Aggregation (Neighborhood Area Network)
- Direct to the Premise Meter connectivity (Home Area Network)

Airspan Benefits:

- Support for real-time applications and services (Voice, Video and datacasting)
- Support for Supervisory Control and Data Acquisition (SCADA) - real-time data gathering from remote locations
- Robust two-way broadband connectivity with Quality of Service (QoS) for real-time services
- Certified and Interoperable – based on certification IOT testing of the WiMAX Forum
- Mature technology, already in service with thousands of carriers and private networks worldwide
- Macro, Micro and Pico infrastructure optimized for deployment on company's existing poles and installation sites
- End-to-end authentication and inherent high-end security

Airspan WiMAX Equipment

ProST Outdoor CPE (16d)

MRT Trunk-loaded Auto powered CPE (16d)

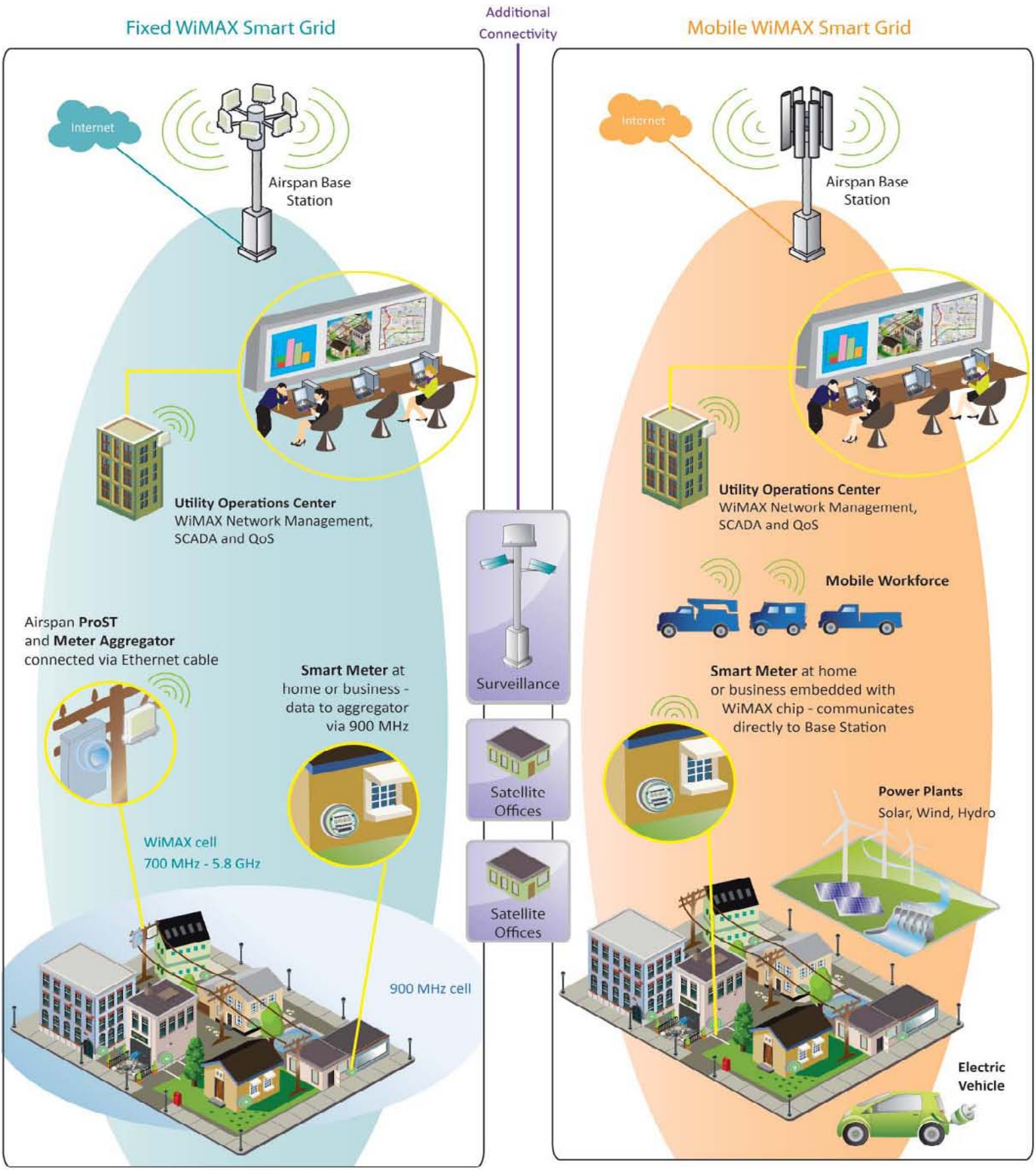
MiMAX USB (16e)

MiMAX Easy Indoor CPE (16e)

MiMAX Pro Outdoor CPE (16e)

MicroMAX Micro Base Station (16d)

MacroMAXe All Outdoor Macro Base Station (16e)



- Multiple meters communicate data to Meter Aggregator via 900 MHz
- Meter Aggregator connected via Ethernet to collocated Airspan WiMAX CPE
- Airspan CPE (ProST) communicates to Airspan WiMAX Base Station
- Airspan WiMAX Base Station communicates data to Utility Operation Center
- Airspan Base Station backhauled to Internet connectivity

- Meter embedded with WiMAX chip - communicates directly to Airspan Base Station
- Mobile Vehicles/personnel equipped with WiMAX Subscriber Units
- Airspan WiMAX Base Station communicates data to Utility Operation Center
- Airspan Base Station backhauled to Internet connectivity

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