METER DATA COLLECTION SERVICES

KILOWAZE Meter Embedded WiFi Automates Electricity Meter Reading

Until MDCS entered the market, the high cost of automatic meter reading (AMR/AMI), forced many utilities to still manually read residential and commercial electricity meters on a monthly basis. Meter reading technicians in the field, equipped with a handheld unit, read each meter individually. At the end of the day, the handheld devices are returned to a central location for uploading of meter data for analysis and billing. It's a time consuming and inefficient way to gather meter data.

The market progressed to drive-by readings of meters to even working within the residential eco system by having garbage trucks become equipped with drive-by meter readers. Although more cost effective, these solutions were and are still wrought with problems. Today, municipal WiFi networks have become a long range solution to reducing cost of data transfer from the meter to the utility company.

MDCS offers utilities a means of transitioning from older technology meter data collection to a newer means of IoT based data collection, without having to purchase the entire data network along with the a new meter.

The KILOWAZE meter is equipped with short and long range data collection capability through the onboard WiFi and the LoRa radios. Those utilities whose budget confines them to an upgrade of the meter only at this time, will still be able to continue their traditional methods of data collection: manual, truck, municipal, until such time as they can afford to upgrade the network. When the time comes for them to want the network installed, there is no need to purchase a new meter. The KILOWAZE will remain as the primary data collector at the meter. The network will just become upgraded.

Every KILOWAZE electricity meter is equipped with dual mode WiFi based on industry standard IEEE 802.11n communications protocol. KILOWAZE Direct Connect WiFi enables a direct connection to the meter for tasks such as reading and provisioning. KILOWAZE Network Connect connects the meter to utility servers through the Internet.

KILOWAZE WiFi
Direct Connect Meter Reading

Using the WiFi Direct Connect feature, meters are read on a walk-by basis using handheld device with the KILOWAZE Mobile Read app installed. The KILOWAZE Mobile Read app runs on standard windows OS platforms, saving the cost of expensive proprietary reading devices. The meter reader only needs to get within a few feet of the meter for a successful read, saving time in remote and inaccessible area or going through gates and dealing with pets.

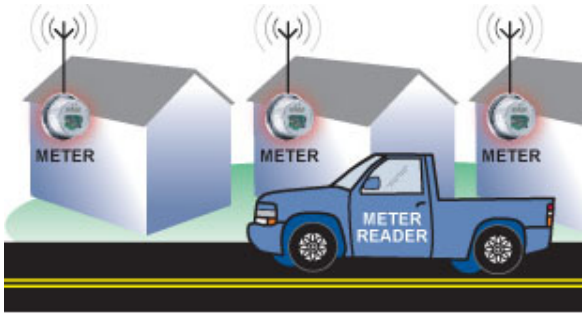


Figure 1. KILOWAZE WiFi Direct Connect walk-by meter read

Figure 2. KiloWaze Direct Connect Drive-By Meter read

An even more efficient method of meter reading with KILOWAZE WiFi Direct Connect is drive-by reading. A robust WiFi transceiver with directional antenna is installed on a utility vehicle. The vehicle is driven through a neighborhood scanning meters one by one resulting in 1,000's of meters being read in a single day. Drive-by meter reading can be combined with other activities such as refuse pick-up, which already goes through the neighborhood on a regular basis.

KILOWAZE WiFi Network Connect

As WiFi technology has become more ubiquitous and robust, municipalities across the USA have developed the idea of a single citywide WiFi wireless network. The goal is not to replace existing home/business broadband, but instead offer limited bandwidth outdoor access only, enabling light use applications such as Internet browsing or sending email.

Municipalities have realized that with municipal WiFi in place, no further city investment in network infrastructure is required to provide many other city services (police, fire and emergency) and control of city infrastructure. High on the infrastructure list is meter reading.

Besides eliminating the time inefficiency of walk-by and drive-by meter reading, municipal WiFi network meter reading facilitates increased meter reading accuracy, more timely access to metering data, reduced time to pinpoint outage locations, remote service disconnects and a decrease in service truck rolls. All of these help reduce operational costs and increase customer satisfaction.

Integrating KILOWAZE Meters into a Municipal WiFi Network

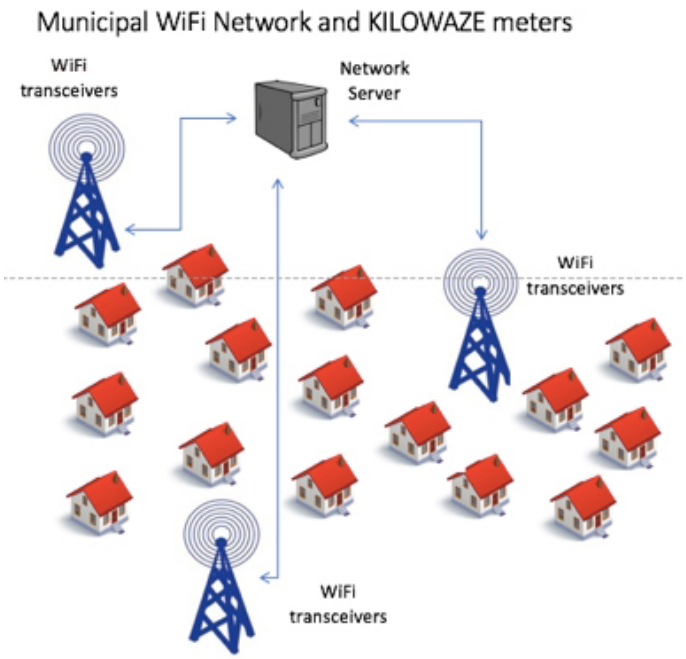
Municipal WiFi networks are often implemented by installing WiFi transceivers mounted on city-owned assets such as lighting and power poles, traffic safety lights and buildings. Typically, one out of every ten wireless transceivers also acts as a gateway node and is connected by 3G/4G, Ethernet or fiber backhaul to network servers. Virtually all outdoor WiFi transceivers are implemented with the same standards based 802.11n WiFi as used in the KILOWAZE meter. Integration into the network is straightforward. Using the KILOWAZE mobile app, meters are provisioned to join the municipal WiFi network and provide the proper authentication. Once the KILOWAZE meters are connected, meter data is sent to WiFi transceivers and through gateway devices to network servers. From the network servers meter data goes to the utility's applications servers running Meter Data Management System (MDMS) and back office systems such as billing.

Figure 3 WiFi transceiver mounted on Lamp post

KILOWAZE WiFi simplifies meter reading at low cost

KILOWAZE meters with dual mode IEEE 802.11n WiFi offers utilities two WiFi solutions to increase reading efficiency over manual reading. Walk-by/ drive-by reading efficiency is increased using WiFi capable low cost handheld devices running the KILOWAZE mobile app. In municipal WiFi networks, meter reading utilizing KILOWAZE meters can be integrated into the network without requiring further city investment in network infrastructure.

Figure 4 Typical Municipal WiFi network topology



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