

Aclara STAR[®] Network for Gas Utilities



Aclara technologies for gas utilities.

The STAR Network for gas utilities offers two-way communication systems that go beyond AMR, by securely and accurately reading the entire system electronically – without meter readers, drive-by vans, or handhelds.



Create Your Intelligent Infrastructure™

Aclara represents the industry's leading technologies for providing device networking, data-value management, and customer communications for utilities worldwide.

Aclara integrates the strengths of the industry's most proven advanced-metering infrastructure gas solutions with the Aclara STAR[®] Network system, Aclara meter-data-management and smart consumer-engagement solutions to meet the needs of our gas utility clients.

Aclara solutions will help you enhance your communications, increase customer satisfaction, and create a unique vision for your utility. Beyond AMI technologies, our solutions include the tools to implement strategies for utility networking, distribution management, and energy efficiency.

Look to Aclara for the tools, the innovation, and the knowledge to make the most of your gas utility systems, realizing the power of data and a true communication network.



The Aclara Star Network

The STAR Network for gas utilities offers two-way communication systems that go beyond AMR, by securely and accurately reading the entire system electronically – without meter readers, drive-by vans, or handhelds. Our solution provides hourly, time-stamped and time-synchronized meter readings that can help large and small gas utilities improve their business operations.

The STAR Network's AMI radio topology consists of three components:

- Meter Transmission Unit (MTU)
- Data Collector Unit (DCU)
- Network Control Computer (NCC)

For back-end data management and business analytics, Aclara offers a meter data management (MDM) solution, leveraging a standards-based, secure approach to enable meter data availability to all utility applications. Once the data is processed it can be accessed across the entire utility organization for a wide variety of applications, such as:

- Billing
- Revenue assurance
- Leak management and loss analysis
- System capacity planning
- Consumer engagement

Series 3000 Gas Meter Transponder Unit (MTU)

At the heart of the STAR Network for gas utilities, is the Series 3000 MTU. It provides the gas utility with accurate and timely data to support revenue management by reducing meter reading and billing errors. The series 3000 provides a complete system read with all the necessary information to reconcile the amount of gas entering the system to the billable gas that is consumed, thus identifying the probability of system leaks. The collected network data delivers improved response time, better customer service, faster emergency response and vital load management information.

The Series 3000 gas MTU uses the high-performance STAR Network RF technology to transmit hourly, interval usage data, and two-way over individual 450- to 470-MHz radio frequencies without disruptive interference on a time-synchronized network. The MTU is a third-party certified, intrinsically safe device, designed to be an exact match for a utilities existing meter population.

Hourly Read Interval

- 60-minute meter reads.
- Transmitted four times per day.
 - Each MTU transmission lasts only 70 milliseconds – accumulates to less than two minutes of transmission time per calendar year.
- Default setting – battery life of 20 years.

Shorter Read Intervals

- Programmable shorter intervals.
- Each transmission includes the 12 most recent readings at four daily uploads.
- Always stores 12 interval readings.

High Resolution Data

- Provides a resolution of one pulse per revolution of the proving dial.
- Ability to transmit up to 8 digits of meter reading data.
- Provides the user the ability to transmit the entire billing read plus the proving dial reading.

Data Collection Units (DCU)

The DCU will help utility staff maintain the reliability of aging infrastructure and improve efficiency and capacity through enhanced asset management, monitoring and timely communication. Benefits include:

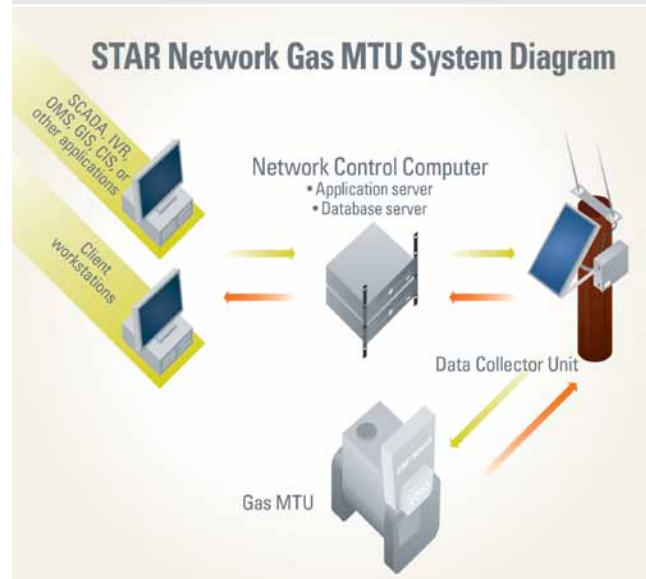
- Existing WAN compatibility – Utilities can leverage current communication networks and choose the most cost-effective backhaul without the worry of compatibility.
- Safety and security – Initiates an immediate message transfer upon receipt of an event or alarm from an MTU.

The DCU II transmits and receives data over individual 450- to 470-MHz radio frequencies. Powered by a battery that can be recharged by a solar panel or AC power supply, the DCU time stamps, processes, and stores diagnostic information and data collected from MTUs.

DCUs decode and error-check the received data before storing it in local memory, as well as transmit data for further processing to the NCC, and sends commands and alerts to the MTUs. DCUs can use a variety of backhaul communications technologies, including many types of IP-based networks or backhaul solutions such as cellular, Wi-Fi, Ethernet, and fiber optic.

DCUs are installed throughout the service territory on a wide variety of assets, including municipal and utility building roofs, gas or other towers, street lights, and utility poles. The units are typically installed on a ½ mile to 1 mile grid. One STAR® DCU will support several thousand meters in a typical urban area.

The network is designed with a spatial diversity of radio receivers; should one collector miss a transmission, a neighboring data collector captures the data. The system requires no repeaters or other hops to complete a transmission to a DCU.



Network Control Computer (NCC)

The NCC helps utilities sustain operation excellence by maintaining the reliability of aging infrastructure and improving the efficiency and capacity of the grid through enhanced asset management, monitoring, and self-healing capabilities. The core of the NCC is to provide information and reports to utility management, customer service, billing and maintenance departments.

The NCC is the central computer system that stores all meter readings and runs the STAR Network software. The NCC, usually located at the utility data center, sorts and processes all meter and diagnostic flag data and manages the health of the network.

As the data is collected, it is stored directly in the data repository, where it is available for optional functionality, such as MDM validation, estimation and editing. Once processed, data can be accessed across the enterprise for a wide variety of applications, including:

- Billing
- Revenue assurance
- Leak management and loss analysis
- System capacity planning



Meter Data Management/Customer Portals

The Aclara data store helps utilities improve financial performance and productivity with a full featured suite of functionality including; accurate data processing, standards and rules for service order creation, proactive assurance of data availability, audit trails, interface to billing systems and CSRs, and support for operation and planning needs.

The foundation of the Aclara data store begins with an Oracle-based data repository (called the MDM) that supports all application modules. The MDM performs the critical functions of data integration, validation, estimation and editing (VEE) and data storage and management. Aclara MDM has an open, accessible, and versatile architecture, maintains a complete audit trail, and leverages Oracle to provide exceptional data management and transactional performance for even the largest applications.

Aclara MDM can be configured to pull in, normalize, validate, and store data from any number of systems, including CIS, SCADA, GIS, load research, load schedule systems, weather, and other legacy and middleware systems, creating a central data repository.

Customer Care Portal

Aclara's customer care portal is a unique approach to transform customer communication by increasing both customer and CSR satisfaction while delivering rapid return on investment. This is done through increased adoption of customer self-service (reducing customer service calls), increased first call resolution, shorter call times, reduced number of paper bills, reduced need for visits and other costly follow-up services, simplified CSR training.

Aclara's STAR® Network system offers the customer care portal where consumers can find ways to conserve, select rates, change consumption behavior, and understand usage within their home or business enabling them to manage their use of gas more wisely.

We offer solutions in both self-service and contact center channels, and both residential and business customer editions.

Major Modules Include:

- Bill analysis
- Program promotion
- Energy analysis
- Customer moves center



Aclara

945 Hornet Drive, Hazelwood, MO 63042 | P: 800.297.2728 | F: 314.895.6543
info@aclara.com | www.Aclara.com

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