

Directory of Acronyms and Terms



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1. Acronyms and Definitions

AFC	Automatic Frequency Control	A method (or device) to automatically maintain a tuning of electromagnetic radiation (radio or microwave) signal to desired frequency.
AFH	Automatic Frequency Hopping	Part of the process an ERT uses to increase the probability data from an ERT will be received by a data collection device. As a result data messages from the same ERT are sent via different frequencies to a data collection device.
AMI	Advanced Metering Infrastructure	Refers to systems that measure, collect and analyzes energy usage, from advanced devices such as electricity meters, gas meters, and/or water meters, through various communication media on request or on a pre-defined schedule. This infrastructure includes hardware, software, communications, customer associated systems and meter data management (MDM) software.
AMR	Automated Meter Reading	The technology of automatically collecting data from water meter or energy metering devices (water, gas, electric) and transferring that data to a central database for billing and/or analyzing.
ANSI	American National Standards Institute	The Institute oversees the creation, promulgation and use of thousands of norms and guidelines that directly impact businesses in nearly every sector.
APL	Accuracy and Pressure Loss	Two measurements used to rate meter efficiency. Accuracy and pressure loss varies depending on the type of meter and the rate of flow through the meter.
ASC	Automatic Sensitivity Control	Circuit used for automatically maintaining receiver sensitivity at a predetermined level; it is similar to automatic gain control, but it affects the receiver constantly rather than during the brief interval selected by the range gate.
ASC	Automatic Sensitivity Control	Operates like the squelch function in audio systems (ambient noise filtering) to avoid "false" wake-up when RF environment is noisy. This is a serious factor for saving power.

ATM	Automatic Transmit Mode	Data collection systems in which evolution Radio Transmitter Modules (RTMs) automatically log data and transmit it at pre-determined intervals.
AWWA	American Water Works Association	AWWA is the authoritative resource for safe water, providing knowledge, information and advocacy to improve the quality and supply of water in North America and beyond. AWWA advances public health, safety and welfare by uniting the efforts of the full spectrum of the water community.
BTVP	Blue Tooth Versa Probe	Universal meter reading device manufactured by Northrup Grumman that utilizes blue tooth technology to transfer data.
CCU	Cell Collection Unit	Component in an Itron Automated Meter Reading System.
CIS	Customer Information Services	Utility company's customer database.
CPU	Central Processing Unit	Sometimes just called processor, is a description of a class of logic machines that can execute computer programs.
DCU	Data Collection Unit	Component in an Aclara Automated Meter Reading System.
DSSS	Direct Sequence Spread Spectrum	A modulation technique. As with other spread spectrum technologies, the transmitted signal takes up more bandwidth than the information signal that is being modulated. The name 'spread spectrum' comes from the fact that the carrier signals occur over the full bandwidth (spectrum) of a device's transmitting frequency.
ERT	Encoder Receiver Transmitter	Component of Itron walk-by, drive-by or fixed network automated meter reading or advanced metering infrastructure that collects data from a water meter.
evORTM	evolution Radio Transceiver Module	evolution component (endpoint) typically attached to the water meter that transmits consumption data and automatic warnings regarding leaks, tampering, consumption profiles, low batteries and more to a collection point in an AMR/AMI mobile and fixed network settings.

FCC 15.247	Federal Communications Commission Regulation 15.247c	FCC regulation that pertains to operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz regarding frequency hopping and direct sequence spread spectrum intentional radiators. evolution RTMs are compliant with this regulation.
FCC 15.249	Federal Communications Commission Regulation 15.249	FCC regulation that pertains to operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz and 24.0-24.25 GHz. evoRTM endpoints are compliant with this regulation.
FEC	Forward Error Correction	A system of error control for data transmission, whereby the sender adds redundant data to its messages, also known as an error correction code. This allows the receiver to detect and correct errors (within some bound) without the need to ask the sender for additional data.
FHSS	Frequency Hopping Spread Spectrum	A method of transmitting radio signals by rapidly switching a carrier among many frequency channels, using a pseudo-random sequence known to both transmitter and receiver.
FN	Fixed Network	Utilizes an licensed or unlicensed radio frequency technology for two way communication that allows for automatic data logging, leak detection, tampering alarm.
GPRS	General Packet Radio Service	General Packet Radio Service (GPRS) is a packet oriented Mobile Data Service available to users of Global System for Mobile Communications (GSM) and IS-136 mobile phones. It provides data rates from 56 up to 114 kb/s. (lower case 'b' means 'bits')
GPS	Global Positioning System	The Global Positioning System (GPS) is the only fully functional Global Navigation Satellite System (GNSS). The GPS uses a constellation of between 24 and 32 Medium Earth Orbit satellites that transmit precise microwave signals that enable GPS receivers to determine their current location, the time, and their velocity (including direction).

GSM	Global System for Mobile Communications	The most popular standard for mobile phones in the world. Its promoter, the GSM Association, estimates that 82% of the global mobile market uses the standard. GSM is used by over 3 billion people across more than 212 countries and territories. Its presence makes international roaming very common between mobile phone operators, enabling subscribers to use their phones in many parts of the world. GSM differs from its predecessors in that both signaling and speech channels are digital, and thus is considered a second generation (2G) mobile phone system.
HCI	Host Controller Interface	A register level interface which allows a host controller for USB or FireWire to communicate with the operating system of a personal computer.
HRP	High Resolution Pulse	Industrial pulse output device giving a relatively high number of pulses per unit of registration.
HSP	High Speed Pulse	Industrial pulse output device replacing SF and HRP pulse units.
ICCID	Integrated Circuit Card ID	9 or 20-digit serial number of the SIM card.
IEEE	Institute of Electrical and Electronics Engineers	The world's leading professional association for the advancement of technology.
ILC	Inline Connector	Waterproof cable potted to the register with a Quick connect (snap together for connection to a RF module).
IP68	International Protection rating, (sometimes also interpreted as ingress protection rating) followed by two digits and an optional letter.	<p>The standard aims to provide users more detailed information than vague marketing terms such as "waterproof".</p> <p>IP68 is defined as follows:</p> <p>6 - Dust Tight - No ingress of dust; complete protection against contact</p> <p>8 - Immersion beyond 1 m - The equipment is suitable for continuous immersion in water under conditions which shall be specified by the manufacturer. NOTE: Normally, this will mean that the equipment is hermetically sealed. However, with certain types of equipment, it can mean that water can enter but only in such a manner that produces no harmful effects.</p>

ISM	Industrial, Scientific and Medical	Industrial, Scientific and Medical (ISM) radio bands were originally reserved internationally for the use of RF electromagnetic fields for industrial, scientific and medical purposes other than communications. In general, communications equipment must accept any interference generated by ISM equipment.
LAN	Local Area Network	A computer network covering a small geographic area, like a home, office, or group of buildings e.g. a school. The defining characteristics of LANs, in contrast to wide-area networks (WANs), include their much higher data-transfer rates, smaller geographic range, and lack of a need for leased telecommunication lines.
LCD	Liquid Crystal Display	A thin, flat display device made up of any number of color or monochrome pixels arrayed in front of a light source or reflector.
LLC	Logical Link Control	The upper sublayer of the OSI data link layer. The LLC is the same for the various physical media (such as Ethernet, token ring, and WLAN). The LLC sublayer is primarily concerned with: Multiplexing protocols transmitted over the MAC layer (when transmitting) and demultiplexing them (when receiving), as well as providing flow and error control.
LRP	Low Resolution Pulse	Industrial or municipal pulse output device giving a relatively low number of pulses per unit of registration.
MAC	Medium Access Control	Also known as the Medium Access Control is a sublayer of the data link layer specified in the seven-layer OSI model (layer 2). It provides addressing and channel access control mechanisms that make it possible for several terminals or network nodes to communicate within a multipoint network, typically a local area network (LAN) or metropolitan area network (MAN).
MCLite	Mobile Collector Lite	Portable drive-by AMR tool manufactured by Itron that utilizes the Itron FC200 handheld computer with an external radio to gather consumption and tamper data from ERT-equipped electricity, gas and water meters.
MIU	Meter Interface Unit	Component in a Trace Automated Meter Reading System.

MTU	Meter Transmission Unit	A meter transmission unit is the component of an Aclara AMR System/AMI Network that reads the meter register. The MTU transmits a radio signal to a Data Collection Unit (DCU). In the evolution suite of products, a MTU is referred to a RTM (Radio Transceiver Module).
MV-RS	Multi Vendor Reading System	Itron PC-based meter reading software for electric, gas and water utilities.
ODBC	Open DataBase Connectivity	A standard database access method developed by the SQL Access group in 1992. The goal of ODBC is to make it possible to access any data from any application, regardless of which database management system (DBMS) is handling the data.
PAN	Personal Area Network	Computer network used for communication among computer devices (including telephones and personal digital assistants) close to one person.
PCB	Printed Circuit Board	Printed circuit boards, or PCBs, are used to mechanically support and electrically connect electronic components using conductive pathways, or traces, etched from copper sheets laminated onto a non-conductive substrate.
PCMCIA	Personal Computer Memory Card International Association	The Personal Computer Memory Card International Association is an international standards body that defines and promotes the PC Card (formerly known as "PCMCIA card") and Express Card standards.
PD	Positive Displacement	Measuring technology utilized by the C700 model of water meter in which a known volume of water is displaced through the meter for each piston or disk oscillation.
PHY	Physical Layer	Refers to the physical layer of a integrated circuit.
PMI	Pit Mount Interface	For various pit lids. Used for optimum RF propagation in a pit environment for a fixed network.
QoS	Quality of Service	Refers to resource reservation control mechanisms rather than the achieved service quality. Quality of service is the ability to provide different priority to different applications, users, or data flows, or to guarantee a certain level of performance to a data flow.

RF	Radio Frequency	A frequency or rate of oscillation within the range of about 3 Hz to 300 GHz.
ROCL	ReadOne Command Language	Used to program an Itron 50W ERT.
RSSI	Received Signal Strength Indication	Received Signal Strength Indication (RSSI) is a measurement of the power present in a received radio signal.
RTC	Real Time Clock	A computer clock (most often in the form of an integrated circuit) that keeps track of the current time. Although the term often refers to the devices in personal computers, servers and embedded systems, RTCs are present in almost any electronic device which needs to keep accurate time.
SCADA	Supervisory Control And Data Acquisition	It generally refers to an industrial control system: a computer system monitoring and controlling a process.
SDP	Service Discovery Protocol	Service discovery protocols are network protocols which allow automatic detection of devices and services offered by these devices on a computer network.
SIM	Subscriber Identity Module	A Subscriber Identity Module (SIM) is part of a removable smart card ICC (Integrated Circuit Card), also known as SIM Cards, for mobile, telephony devices (such as computers) and mobile phones. SIM cards securely store the service-subscriber key (IMSI) used to identify a subscriber.
SQL	Structured Query Language	A standard interactive and programming language for querying and modifying data and managing databases.
TIFTOF	Transfer Input File/Transfer Output File	Transfer input file includes route information for the evoLink Route Manager. Transfer Output file includes data.
TOU	Time of Use	Also known as time-based rates. Ability to generate usage data for a particular time period.
ULP	Ultra-Low-Power	Term used for the power consumption of evolution radio transmitter receivers.
VRT	Virtual Real Time	VRT solutions process and store virtual real-time readings at the meter transponder for selective retrieval during a normal in-cycle read.

WAN	Wide Area Network	A computer network that covers a broad area (i.e., any network whose communications links cross metropolitan, regional, or national boundaries).
WYSIWYG	What You See Is What You Get	Used in computing to describe a system in which content during editing appears very similar to the final product. It is commonly used for word processors, but has other applications, such as Web (HTML) authoring.

2. Glossary

4-20mA signal	Signal common to industrial applications. Used for transmitting rate of flow or other continuous parameters to monitoring or control devices such as SCADA.
Automatic Transmission Mode	As with bubble-up operation, RTMs log and transmit data automatically. The difference in Evolution AMI is that a daily log (which may contain several readings) is sent as a specified time. This saves battery power in RTMs as data is sent in a single connection, rather than several.
Bubble-up	Data collection systems in which ERTs in an Itron system automatically log data and transmit it at pre-determined intervals.
Daemon Interface	Buffer database to ensure secure data exchange between EvoNet Manager and a back-end information or billing system.
Data Logging	Storage of consumption data by the RTM (remote transmitter module) over time. An RTM typically queries its paired end-device at programmable time intervals and saves the obtained reading and a time/date stamp for later retrieval.
Digital Register	<p>Uses proven reed switch technology. Reliable operation with no mechanical failure. Clean, consistent pulse. No pulse stretching or bounce. No over-registering. High definition reading. 1/10th of sweep hand. 5/8" = 1 gallon pulse or .1 CF. Tested to be accurate to over 1 million pulses without a missed read.</p> <p>Reed switch is mounted on circuit board Large 10 pull round magnet is mounted through spindle. As water flows through measurement chamber (oscillating piston or turbine) it causes magnet in top of chamber to rotate. Register is magnetically coupled to measurement chamber and rotates with consumption. Magnet on spindle causes reed switch on circuit board to open & close 10 times/revolution.</p>

Electronic Register	Industrial register with an LCD display of total and rate of flow; may have optional outputs such as 4-20mA, pulse.
evoGate™	Wavenis-to-GPRS gateways through which consumption data collected by RTMs is sent. These gateways are considered as "Level 0" devices in the field network and are referred to as 'Central Collectors'.
evoHop™	A device in an evolution fixed network that is used as a repeater or relay when an evoRTM endpoint, or group of evoRTM endpoints, are too far from the evoGate Central Collector.
evoNet Manager	Middleware and Wavenis network configuration application.
evoNet Monitor™	In-field network configuration software utility.
evoWalk™	Walk-by metering software for handheld computers.
Inductive Pulse	Variation of HRP / HSP for specific models of Elster AMCO Water meters.
Inferential Measuring	Measuring technology utilized by meters such as the T4000 (Turbine or Wolkman), S2000 (Single Jet), M700 (Multi Jet), and EvoQ4 (Mag Meter) in which the measuring element measures water velocity; the volume of water is then inferred from the measurement and registered on the meter.
InVision Encoder	<p>The InVision Absolute Encoder is a non-contact encoder that uses optical character recognition (OCR) to eliminate wear on contact pads associated with traditional encoders, resulting in extended register life. While absolute encoders have revolutionized meter reading, lower power requirements and increased reliability are essential to successful implementation of advanced reading technologies.</p> <p>InVision technology mimics human vision and vision processing with optimum lighting, resulting in better than 20:20 vision with no interpretation or data entry errors. Elster AMCO Water provides utilities with the first true absolute encoder through the use of InVision technology.</p>

ISO 9001:2000	ISO 9001:2000 Quality management systems – Requirements intended for use in any organization which designs, develops, manufactures, installs and/or services any product or provides any form of service. It provides a number of requirements which an organization needs to fulfill if it is to achieve customer satisfaction through consistent products and services which meet customer expectations.
ISO4064	ISO4064 Standard of meter performance criteria used by much of the world outside North America; comparable to AWWA standards such AWWA C700, C701 etc.
Leak detection	RTMs can be configured to automatically transmit an alert in case a leak is detected on a water meter. Alerts are displayed in evoNet Manager.
Nutation	Regular motion in the axis of rotation of a largely axially symmetric object, such as a meter body.
Oscillation	A periodic circular or rotary movement of a piston within a meter body.
Reed Switch	Electrical switch operated by an applied magnetic field. Used in Pulse registers.
Repeater	Network device that relays wireless signals for other network devices such as the evoHop repeater device.
Sector	A sector refers to a group of RTMs connected to a gateway.
T Probe	Pulse output device for V100 meters.

3. Service and Support

Elster AMCO Water Customer Service

The Elster AMCO Water Customer Service Team can be contacted during the following hours:

Monday through Friday – 8:00 AM to 5:00 PM EST, excluding holidays

You can reach the Customer Service Team by calling:

1-866-896-8858

Elster AMCO Water Technical Support

Elster AMCO Water Technical Support specialists are a highly skilled group of individuals who have been selected for their dedication to customer satisfaction. The Technical Support Team is on call during the following hours:

Monday through Friday – 8:00 AM to 5:00 PM EST, excluding holidays

You can reach the Technical Support Team by calling:

1-866-896-8879

Please note: If you are calling after hours, or a Technical Support person is not immediately available, you will be directed to a voice mailbox. Please leave your name and number along with your question or a brief description of the issue. A tech support person will return your call as quickly as possible.

Email: techsupport@us.elster.com

4. Revision History

New Revision Number	Changes	Revision Date
0	Initial document for release	

About Elster AMCO Water, Inc.

Located in Ocala, Florida, Elster AMCO Water is part of Elster, the world's largest metering and smart metering system solutions company. Elster AMCO Water is an industry leader in the development and implementation of innovative metering and system solutions and is committed to delivering superior Customer Service, quality products, solutions and services to the water utility industry.

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