

- water
- gas
- electricity
- heating



advanced resources  
management  
solutions



ECOMATRIX company specializes in design, manufacturing and installation of Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) solutions - measuring, reading, collecting, transmitting and managing data from metering to billing systems. We offer different comprehensive solutions of radio remote meter reading systems that doesn't require physical access to the meter. All products meet worldwide standards of quality and performance. We are experts in the area of wireless systems with significant experience in advanced energy resource management, automatic meter reading and other solutions. ECOMATRIX has a reliable, proven solutions for utility, municipal, agricultural and many other applications.

Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) - technologies of automated collection of consumption data from metering devices (water, gas, electric, heating, cooling) and transmission this data to a central database for analyzing, troubleshooting and billing. These technologies allows utility providers to save time and money to avoid visiting each location for meter reading. Another advantage of AMR is the collection of consumption data in real-time compared with estimation based on statistical data. This exact information with analysis can help both utility providers and customers to control the consumption of water, gas, electricity, heating and cooling.

ECOMATRIX offers AMR/AMI solutions based on WalkBy/DriveBy Reading System and Fixed Reading Management System, based on wireless radio frequency platform (RF 433/865/868/900 MHz).



## WalkBy/DriveBy Reading Systems

In WalkBy Reading System an user collects data from AMR available meters, using the portable transceiver RF Terminal (EM3011) connected to the computer or a tablet PC. With various software combination the RF terminal EM3011 is used as the receiving module to WalkBy or DriveBy Reading System and for the configuration of various RF devices.



DriveBy Reading System is installed in a vehicle. The reading device automatically collects the meter readings while driving. A user drives inside of the service area until all the meters are read.

## Fixed Reading Management System Data transmission equipment

Water meters with integrated radio transmitters (EM-M)

The EM-M meters - is a radio frequency (RF) transmitting class C water meters. RF transmitters integrated into an electronic registers of Multi-Jet impeller water meters (Dn15, 20, 25, 32, 40, 50 mm). Water meter accurately transmits the water consumption data and eliminates the needs for external wiring and complex infrastructure. The system provides accurate metering capabilities for water management - online reading, back flow consumption, tampering and sabotage alarm, waters leakage report etc. EM-M meters has the lithium battery for more then 12 years of operation.





## Pulse RF unit (EM1016)

External radio transmitting unit EM1016 is used for data transfer from water, electricity and gas meters with pulse outputs. The unit has 4 built-in pulse inputs. The unit has the lithium battery for more than 12 years of operation. The user settings are set by radio with RF Terminal and the special program. Each input has its own reading/programming parameters. The meters data from EM1016 is transmitted directly to the WalkBy/DriveBy system or (and) to the Fixed Reading Management system for automatic collection.



## Interface RF unit (EM1024)

External radio transmitting unit EM1024 is used for data transfer from meters of water, heat, electricity and gas or other devices with serial data transfer interfaces. Power supply is 220/110 VAC. The unit has built-in RS232, RS485, CAN interfaces, and also additional digital inputs from different alarm systems devices.



## Pulse RF/GPRS unit (EM2043)

External RF/GPRS transmitting unit EM2043 is used for data transfer by radio and (or) by cellular communication (GPRS, 2 SIM cards) from meters of water, electricity and gas with pulse outputs, and from the connected pressure sensor. The unit has 3 built-in pulse inputs, 1 analog input from pressure sensor, and also additional digital inputs from alarm systems devices. The unit has the lithium battery for more than 6 years of operation (including power of the connected pressure sensor).



## Data collection equipment

### Repeater RF (EM4007)

In Fixed Reading Management System Repeater RF can receive RF transmissions from AMR meters and retransmit them to the concentrator GateWay. Repeater RF works on battery with 2 options of charging - from 220/110 VAC or from solar battery.



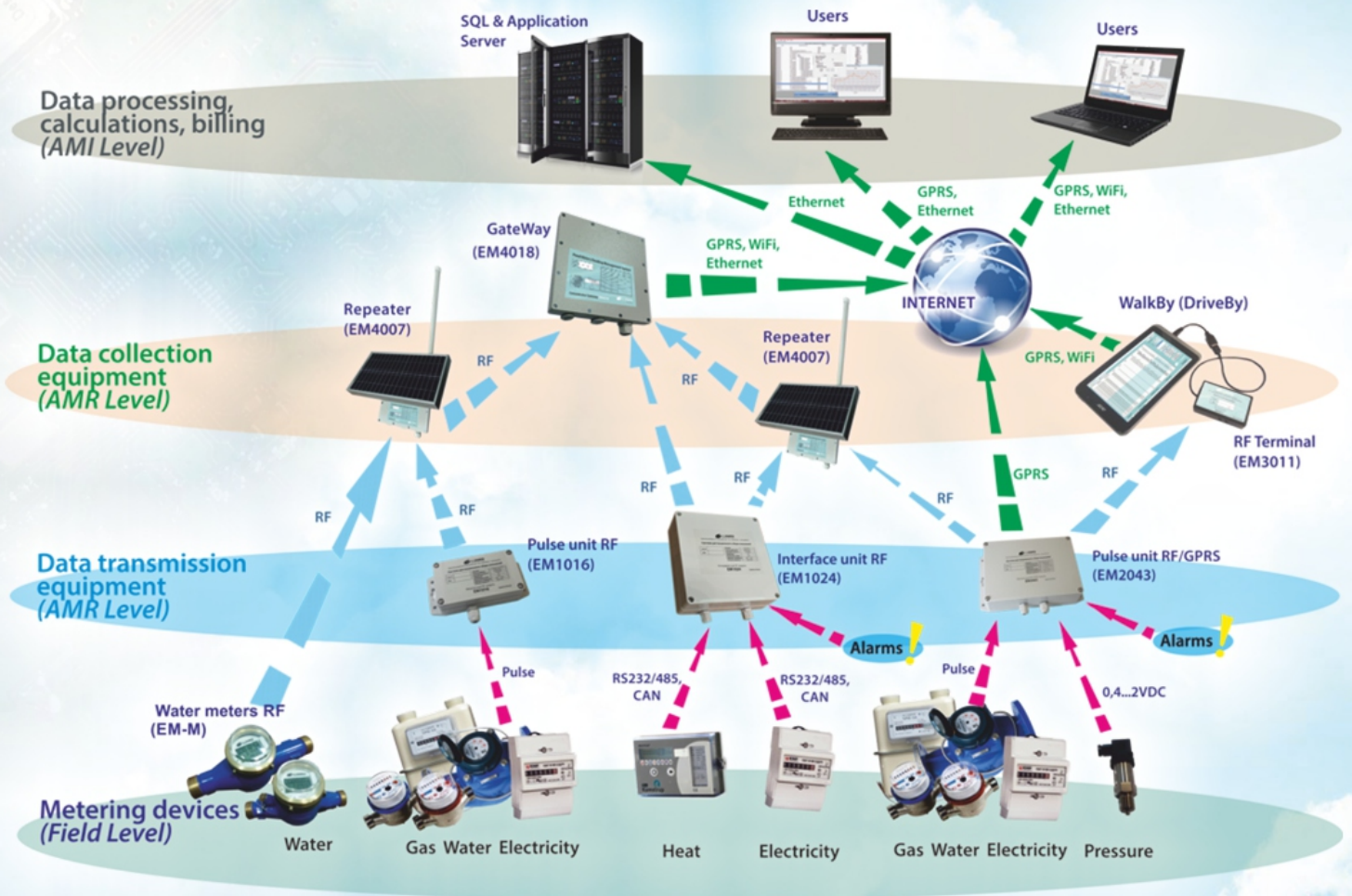
### Concentrator GateWay (EM4018)

The concentrator GateWay is used for data collection by radio channel from meters and repeaters, for storage in non-volatile memory and for transfer by various communication channels (GPRS, WiFi, Ethernet etc.) to the system server. The concentrator GateWay can receive data from thousands of meters.

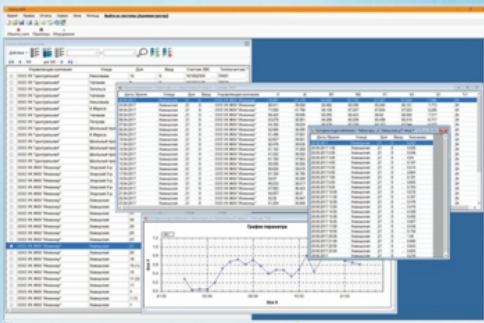




## AMR/AMI system structure:



## Data Collection and Processing Software



Data Collection and Processing Software is used for collecting information from AMR metering devices on different communication channels, its storage, further processing, analysis and data management. The software includes database, information processing subsystem, information display subsystem. Information display subsystem is installed on user's computers. The database and the information processing subsystem can be located at the operator's station or on a separate server, to which the user's computer is connected by local network or via Internet or GPRS cellular connection. Flexibility of the system allows to use it with thousands of objects located in different areas of the cities or with one/more objects.

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