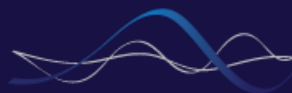

WATER TELEMETRY SYSTEM



v1.04



SkyMeter Hydro edition **LoRa** (SM-HL)

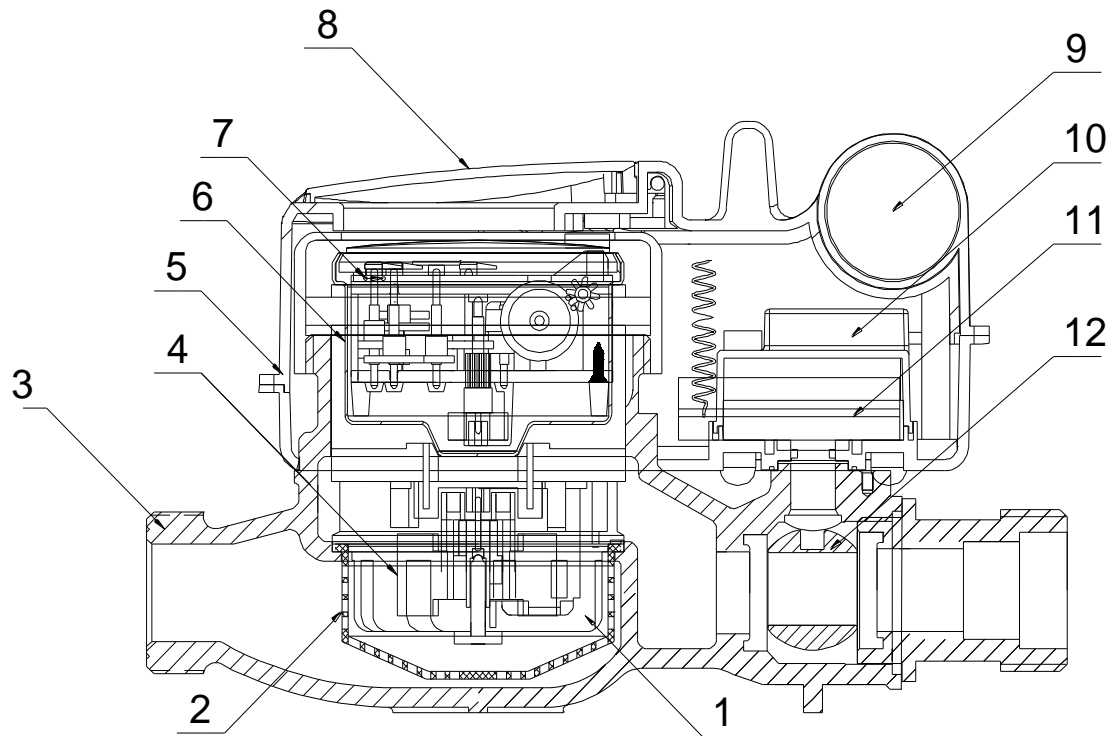
The SkyMeter is installed in the water supply and offer the following capabilities:

- Latest technology
- Highly accurate metering R160
- Feature a long-life magnetic flow sensor (pulse output)
- Sealed air-tight box with IP68 standards
- Wirelessly sends measurement data
- Wireless reception of control commands (opening / closing of the solenoid valve)
- Internal tamper sensor installed
- Motion sensor with immediate alarm in case of activation
- Battery status data sent frequently
- it has an internal shut off valve
- a dedicated LoraWAN radio module built into the water meter
- Certifications MID 2004/22/EC και EN 14154-1:2005+A2:2011

Images of meter



Cross section of the smart water meter



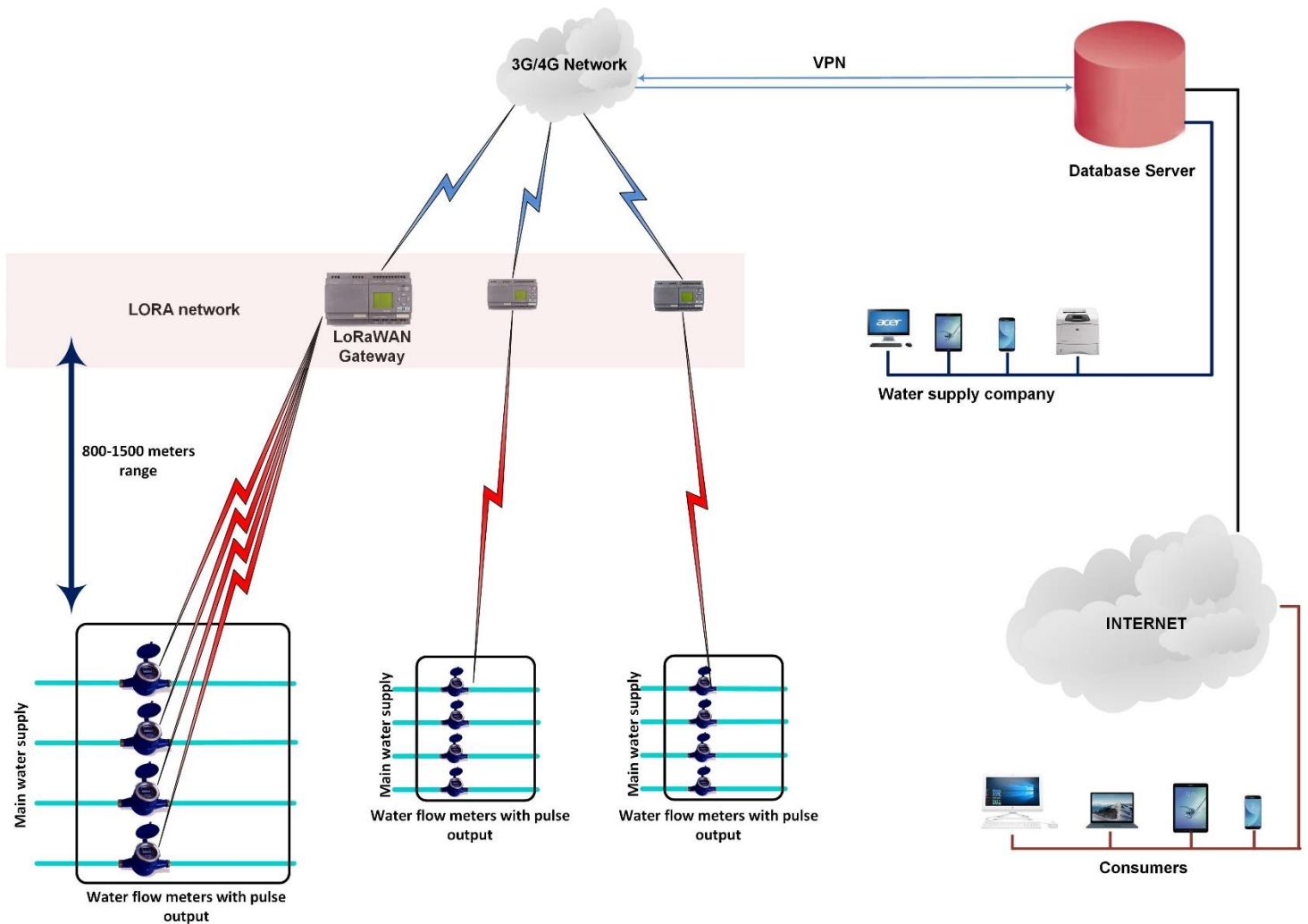
A/A	Description	A/A	Description
1	Rotor housing	7	Magnetic Sensor
2	Sand Filter	8	Plastic cover
3	Body made of brass	9	Lithium Battery
4	Rotor	10	Valve Control
5	Plastic frame	11	Wireless electronic unit
6	Meter	12	Spherical Valve

Communication

The radio unit of the new water meter offers communication through the LoraWAN wireless network. The LoraWAN network offers:

- High energy savings (battery life 5-10 years depending on usage)
- wide range of communications (800-1500 meters in urban environment)
- daily sending and receiving data (consumption data, leakage notification, etc.)
- ability to send commands (shut off valve management)

The diagram below shows the topology diagram of the network:

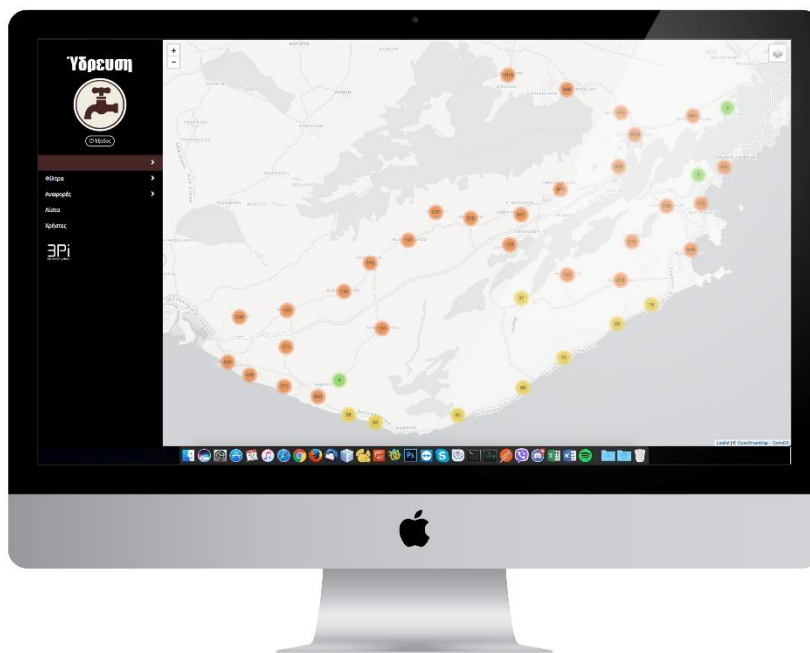


MANAGEMENT SOFTWARE (WATER SUPPLY)

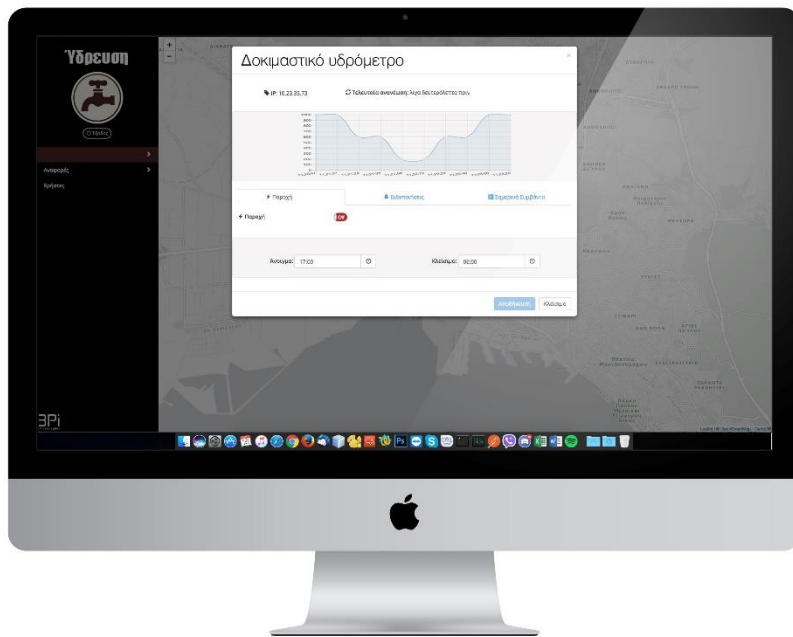
For proper and complete operation of electronic meters, software has been created that collects and processes the data and the network of meters.

Some of the primary features of the software are:

- Web browser access
- Map display software capable of displaying different layers of information



- Software for displaying information in Greek/English
- Name and password for each user
- Permissions for each user
- Manage and process data
- History of entries to the system and recording of all actions performed on it
- Graphical interface with menu options
- Linking meters with an existing system via a software bridge
- Measurement at fixed intervals, on demand
- Remote device management through the central software
- Alarm notifications for leakage, tampering, reverse flow events
- Segmenting and grouping stations by region, supply pipeline, type etc.



- Create consumption-time graphs
- Geographic consumption statistics
- Search for meters on the map based on gauge code, consumer information, etc.
- Online communication with mobile phones of network maintenance technicians

Water Company Mobile App

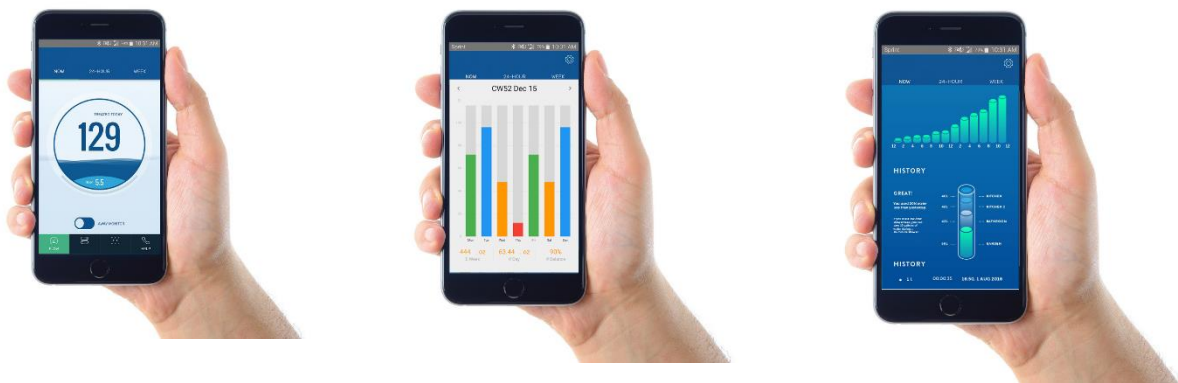
Beyond the host software there will be mobile phone software (Android) for inventory and maintenance of hydrometers with the following capabilities:

- recording of new water meters with geographic identification, photographing and reporting of observations
- failure logging
- automatically find the meter for maintenance via GPS
- take pictures and enter hydrometer status

CONSUMER SOFTWARE (web and mobile app)

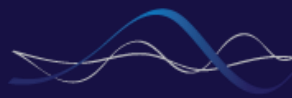
The consumer will be able to monitor, via an application on a computer or mobile phone, important information about their usage:

- consumption statistics
- consumption history (maximum, minimum)
- leakage notification
- Possibility to manage the solenoid (shut off valve)
- display consumption graphs



BENEFITS FOR THE WATER SUPPLY COMPANY

- Physical visit and typing of measurements are not required
- Elimination of "difficult" spaces, inaccessible meters
- Sending control commands
- Managing the shut off valve
- Reducing staffing time, minimizing meter measurement staff and redistributing staff to other areas (mobile workshops)
- Increase staff security
- More frequent measurements possible
- Increase measurement accuracy
- Ability to connect other sensors (pressure, temperature, pH etc.)
- Immediate picture of interference, damage
- Decrease estimates in accounts, re-checks, complaints
- Predictability and consumption patterns per subscriber, group subscribers
- Full history and consumption profile
- Ability to analyze data in a Geographic Information System (GIS)
- Ability to group meters



BENEFITS FOR THE CONSUMER

- View statistics and historical consumption data
- Email / SMS alerts for leaks, off-peak consumption, etc.
- Full view of consumption with detailed bills and graphs (per hour / day / week, etc.)
- Total consumer information for annual water use
- Subscriber information (telephone, Internet, etc.), value added services

