

Plug&Play Wireless AMR

Case Study:



Electric, Water & Gas Meters Remote Reading Solution through GPRS & LAN

"The low price of eDevice gateways, their ease of usage allowing installation by the end-user and their compatibility with GPRS and LAN networks permit us to target a broad public whilst staying focused on analysis of information for optimisation of energy consumption"

JACQUES ALLARD,
EDELIA

PROJECT DESCRIPTION

Edelia aims to offer EDF end-users the ability to take advantage of advanced services that optimise their energy consumption and detect potential leakages or usage deviations.

The service applies to electricity, water and gas: consumption is retrieved by a local gateway that sends the information to a central database through legacy Internet networks such as DSL or GPRS

Daily consumption analysis using leak or overload detection algorithms lets the end-user benefit from alerts and notices through different media (phone, Internet, SMS).

FROM THE METERS TO THE BACK-OFFICE

Meter Readers

Water, Gas and Electricity meters are read through a radio module supplied by Sappel. The modules use the ISM band (EN 13757-4) for 1-way communication and offer 15 years battery life.

AMR Gateway

The meter's counter sent by the radio module is retrieved by the Energie Box Edelia, which is based on the eDevice gateway for analysis, filtering and storage.

Depending on the equipment already existing in the home, the gateway may be connected directly to a wireless GPRS network or to a DSL/Cable router over a LAN connection.

On a periodical basis, the Energie Box Edelia sends the data to eDevice's middleware server hosted on the Internet.

Middleware Server

The IDEMS middleware server from eDevice manages the configuration of the remote gateways (parameters, firmware version, remote troubleshooting) and formats the counter data received before transferring it to the energy management & water factories (EDF servers).

Back-Office

The energy and water offices analyse the data to detect any consumption deviation and sends their report to the Edelia hub (front office) for customer information. The customer can browse its real daily consumption on the Edelia Internet dashboard and receive consumption deviation alerts by email, SMS, or phone.

THE CHALLENGE

The system must be low-cost, reliable, and provide the end-user with a comprehensive and easy-to-use package for a smooth self-installation process.

CUSTOMER BENEFIT

Edelia is the only company to provide a solution that has a 15 years battery life for smooth and non intrusive remote metering of water, gas and electricity. The meter reading frequency can be as often as every 8 seconds allowing to upload a very accurate load curve for enhanced and innovative analysis services on energy consumption.

Based on standard field-proven technologies (TCP/IP, GPRS, EN 13757-4, XML...) the solution lowers the set-up investment costs while allowing almost permanent energy-monitoring.

The ability to download new firmwares to the fleet of eDevice gateways paves the way for evolution towards new services managed through the Energie Box Edelia.



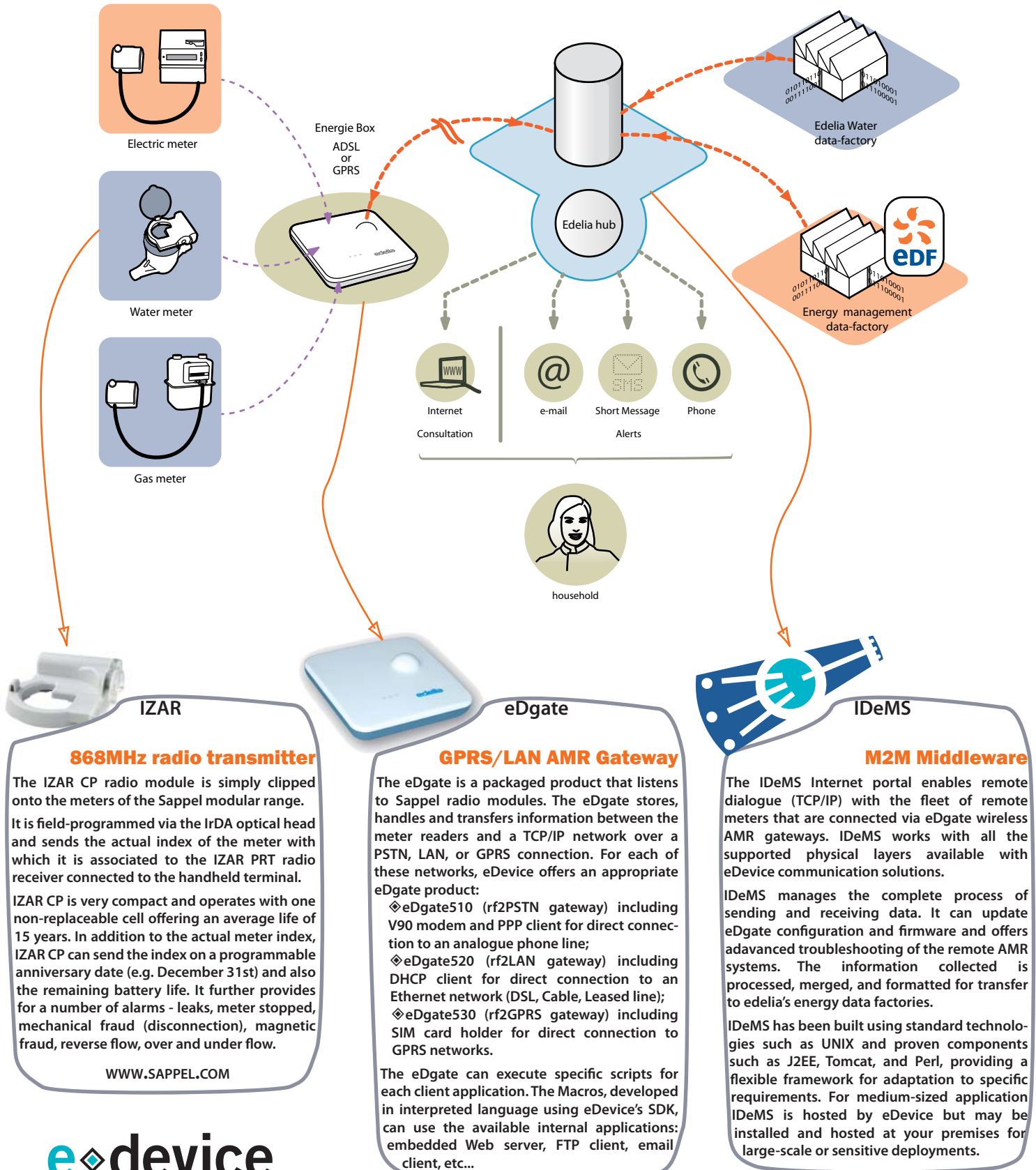
ENERGIE BOX

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IZAR

868MHz radio transmitter

The IZAR CP radio module is simply clipped onto the meters of the Sappel modular range. It is field-programmed via the IrDA optical head and sends the actual index of the meter with which it is associated to the IZAR PRT radio receiver connected to the handheld terminal.

IZAR CP is very compact and operates with one non-replaceable cell offering an average life of 15 years. In addition to the actual meter index, IZAR CP can send the index on a programmable anniversary date (e.g. December 31st) and also the remaining battery life. It further provides for a number of alarms - leaks, meter stopped, mechanical fraud (disconnection), magnetic fraud, reverse flow, over and under flow.

WWW.SAPPEL.COM

eDgate

GPRS/LAN AMR Gateway

The eDgate is a packaged product that listens to Sappel radio modules. The eDgate stores, handles and transfers information between the meter readers and a TCP/IP network over a PSTN, LAN, or GPRS connection. For each of these networks, eDevice offers an appropriate eDgate product:

- ◆ eDgate510 (rf2PSTN gateway) including V90 modem and PPP client for direct connection to an analogue phone line;
- ◆ eDgate520 (rf2LAN gateway) including DHCP client for direct connection to an Ethernet network (DSL, Cable, Leased line);
- ◆ eDgate530 (rf2GPRS gateway) including SIM card holder for direct connection to GPRS networks.

The eDgate can execute specific scripts for each client application. The Macros, developed in interpreted language using eDevice's SDK, can use the available internal applications: embedded Web server, FTP client, email client, etc...

IDeMS

M2M Middleware

The IDeMS Internet portal enables remote dialogue (TCP/IP) with the fleet of remote meters that are connected via eDgate wireless AMR gateways. IDeMS works with all the supported physical layers available with eDevice communication solutions.

IDeMS manages the complete process of sending and receiving data. It can update eDgate configuration and firmware and offers advanced troubleshooting of the remote AMR systems. The information collected is processed, merged, and formatted for transfer to edelia's energy data factories.

IDeMS has been built using standard technologies such as J2EE, Tomcat, and Perl, providing a flexible framework for adaptation to specific requirements. For medium-sized application IDeMS is hosted by eDevice but may be installed and hosted at your premises for large-scale or sensitive deployments.