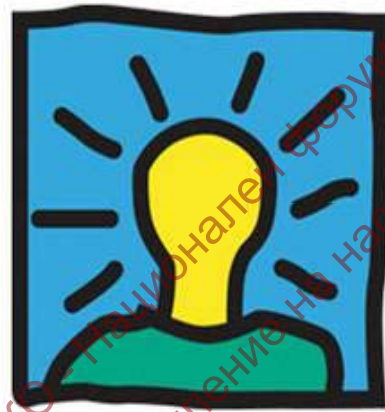


STREET LIGHTING – ENERGY SAVING SOLUTION TECHNOLOGIES



**Reverberi
Enetec**

НКО "Национален форум
"Проблеми на външното осветление на населените места" (08.05.2014)



HISTORY AND FIGURES

1st of January 2000: **Elettronica Reverberi** (Italian company, certified ISO 9001, with more than 25 year experience in Lighting Controls) and **Intelux** (Swiss company, with 30 years of high technological competence, present in 25 countries) were bought from Merloni Progetti, part of Merloni Group – Indesit Company

30th of October 2003: Management Buyout of Elettronica Reverberi and new name **Reverberi Enetec**

2013 figures

- 9 M euro 2013 turnover
- Average yearly growth rate in the last 8 yrs: 9,9%
- 40 employees, mostly Graduated (70%)
- 6% of turnover in R&D

SOME PROJECTS

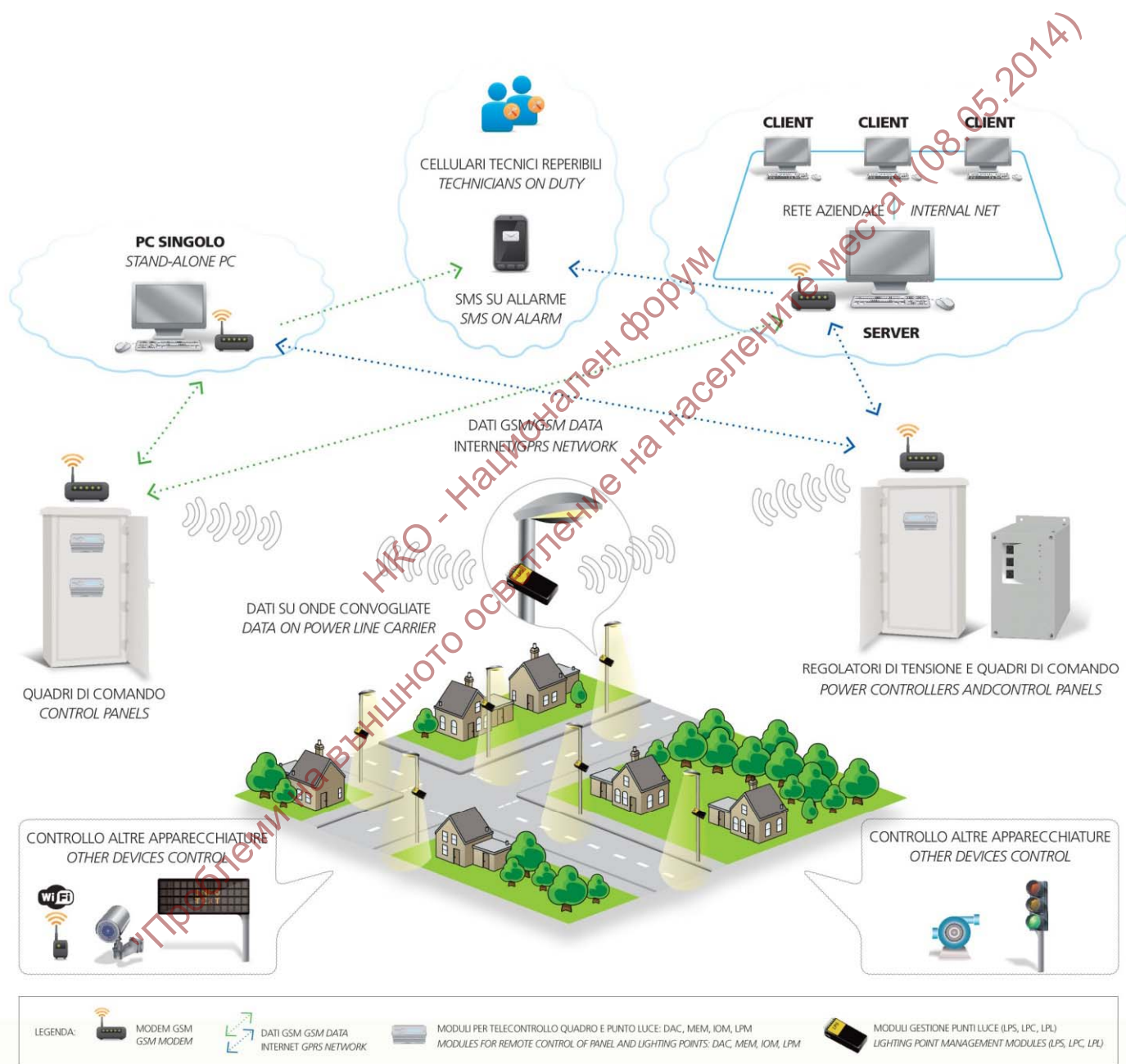
Customer	Year	What
Israel Road Authority	2003-2006	600 STP and Remote Control system
Autostrade per l'Italia	2005-today	400 tunnel control systems and Remote Control system
Autostrade per l'Italia	2008-today	13000 LPL LED control and SW Maestro
Moscow Municipality	2008-today	50 STPi and RC SW
Bergamo Province	2004-today	150 STPi, 2000 LPC, RC SW
Reggio Emilia Municipality	2005-2008	130 STP and Remote Contr SW
Brescia A2A	2008-2013	200 STP, RC SW
Enel Sole - Rimini	2013- today	26000 EB&LPC
City of Rome	2008-today	500 RC systems and RC SW



REVERBERI DELIVERS ALL SOLUTIONS TO MANAGE PROPERLY STREET LIGHTING PLANTS

- Centralized Power Controller or individual dimming devices (dimmable electronic ballast, bi-power ballast, dimmer)
- Remote control and management, from Feeder Pillar to single Lighting Point
- Full technical support , in Italy and abroad, to SW solutions
- Technology partner for SMART CITY

FULL INTEGRATED TECHNOLOGIES



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 за външното осветление на населените места (08.05.2014)

THE BENEFITS



Public lighting

- Reduction of energy consumption up to 35%
- CO2 emission reduction
- Lighting pollution reduction
- Extension of lamp and accessories life
- Maintenance costs reduction

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POWER CONTROLLER TECHNOLOGY

- Voltage stabilization +/- 1%
- Three phase independent control
- Voltage microvariation are stabilized in very short time
- Efficiency over 98% (also for load equal to 50% of nominal value)
- No overvoltage or spikes for commutation
- Astronomical clock integrated into machine
- No maintenance cost (20 years expected relay life)



Remote Control modules



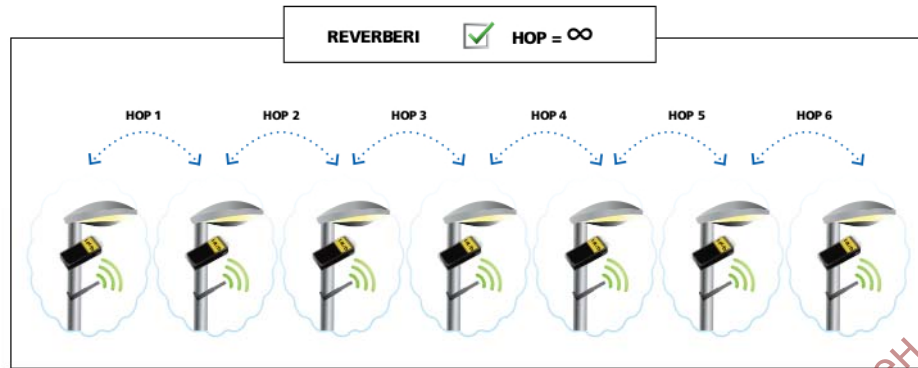
IP65 VERSION

Lighting Point Monitor and Controller (LPL 1-10V ON/OFF - LPL DALI-LPL/R)

Installed in proximity to the individual lighting point, to perform the remote measurement, diagnosis and control of the luminaire through power line carrier/radio communication with LPM/C-LPM/R modules

- As additional property compared to the LPL 1-10V unit, LPL ON/OFF permits to switch on/off the luminaire in the remote mode
- Remote reading of all parameters performed directly onto the luminaire where it has been installed (voltage, current, cosfi, power, hours of operation, status of the lamp, etc.)
- Automatic dimming or ON/OFF work cycle: 5 levels stored in the module itself or by DALI
- Module belonging to a groups scenario of the LPM/C-(LPM/D+LPM/R) module
- Versions for lamps max 150W and 330W
- Version IP00 and IP65

New latest technologies



Radio single lighting point control LPL/R – LPC/R(D)

- System able to manage more than 300 devices on the same wireless network. The self managed mesh network is able to provide more than 20 HOPs for communication, without the intervention of specialized staff
- The range of radio communication between every single radio module is greater than 100 meters in free field.
- The Wireless controller is compliant with surge up to 6kV
- The external enclosure is compliant with the International standard for mechanical impact IK08 or higher.

New latest technologies

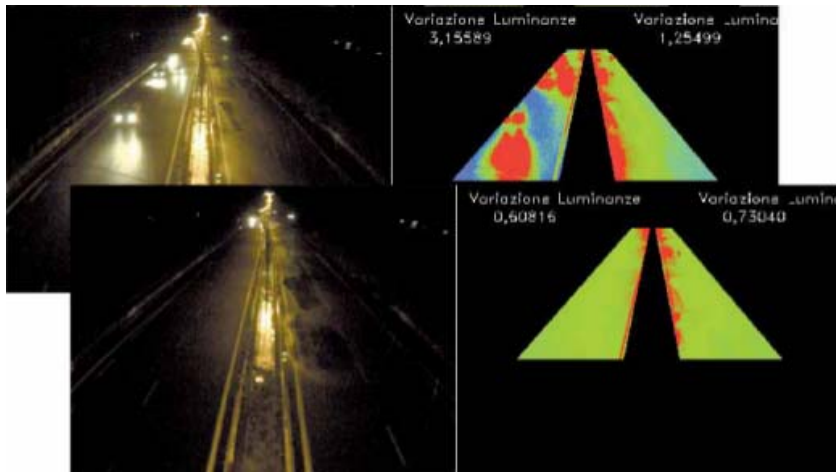


Traffic Sensor LTM

Equipment for real-time measurement of the road luminance, traffic and weather conditions at night, installed at the roadside

- Measuring the luminance level of the road monitored, according to standard UNI 11248 and CEN 13201-3 part 3
- Measuring the flow of the night traffic present, in term of vehicles/hour
- Evaluating the typical weather debilitating conditions (dry, wet, fog, snow)
- Through the measurement of luminance, it is possible to adjust lighting, to obtain on the road the exact value required by current standard, avoiding the designer to take into account the maintenance factor
- Integrating traffic information with the ability to DIM, it is possible to apply the reductions of lighting categories in real time

New latest technologies



Traffic Sensor LTM

- Whether it is dry or moist conditions rather than rain or heavy rain, the sensor is able to analyze the street characteristics and to communicate them to the appropriate control system; snow and fog condition are recognized. This information is essential to understand the accuracy of the measures of luminance in order to avoid reducing the luminous flux when the safety requirements do not allow it.
- Thanks to an adaptive self-learning system, making installation's a very easy task.
- The sensor LTM integrates very simply in Reverberi or Opera control systems, functioning as an extension of the LPM controller.
- Compared to the traditional preprogrammed time cycles, the sensor has shown, in the tests, to be able to add an additional 30% energy savings.
- Improve safety: the dimming depends on real-time traffic and weather conditions.

New latest technologies

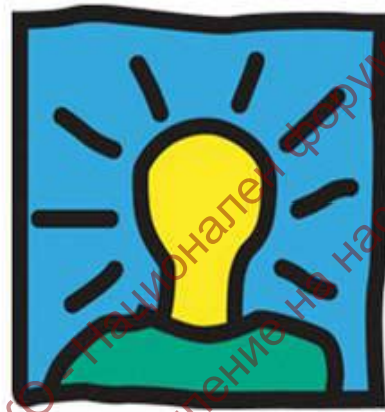


Maestro Web

Maestroweb can be installed on a server **owned by the client**, in a "**cloud**" environment or **usable as service** offered by Reverberi Enetec. In the latter case, it is possible to manage own systems from any device connected to a network, connecting directly to the interface made available by Reverberi.

This technology has been developed especially for the mobile environment: very good on PC windows browsers, perfect for use on tablets and even smartphones

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**Reverberi
Enetec**

THANKS FOR THE ATTENTION!!

"Проблеми и външното осветление на населените места" (08.05.2011)
НКО Трансферален форум