



Jędrzejów, Poland

Polish Beltway Gets Modern Smart Lighting Control System with LONMARK Technology

By Teaming with APANET, City of Jędrzejow Sees 25% Reduction in Energy Use, Decrease in Light Pollution and Maintenance Costs – All with Improved Driver Safety

The Challenge

Jędrzejów, a city of approximately 17,000 people in southern Poland, wanted to save money and power by implementing a modern energy-saving street light control system on its new north beltway. The system needed to cooperate with traffic-level detectors and weather station, and to do so, the city managers needed to find a fully open and interoperable system.

After thorough research, Jędrzejow learned that a system built on the LonWork networking platform would be the best option to meet its goals because of its:

- Well-known status in the marketplace
- Open and interoperable standard, which integrates with a great amount of hardware and firmware available on the market (ie air conditioning, lighting)
- Reliability of the components and the entire system
- Free choice of vendors and manufacturers of products, choice of integrators, choice of service contractors

This research also brought them to APANET Green System Ltd., a Polish company focused on the design and sales of power consumption reduction systems for various applications. Founded in 2010, APANET is an official member of LonMark International. APANET's with GLC 100 series controllers are certificated by LonMark, ensuring they are compatible with a large number of similar systems.

The Solution

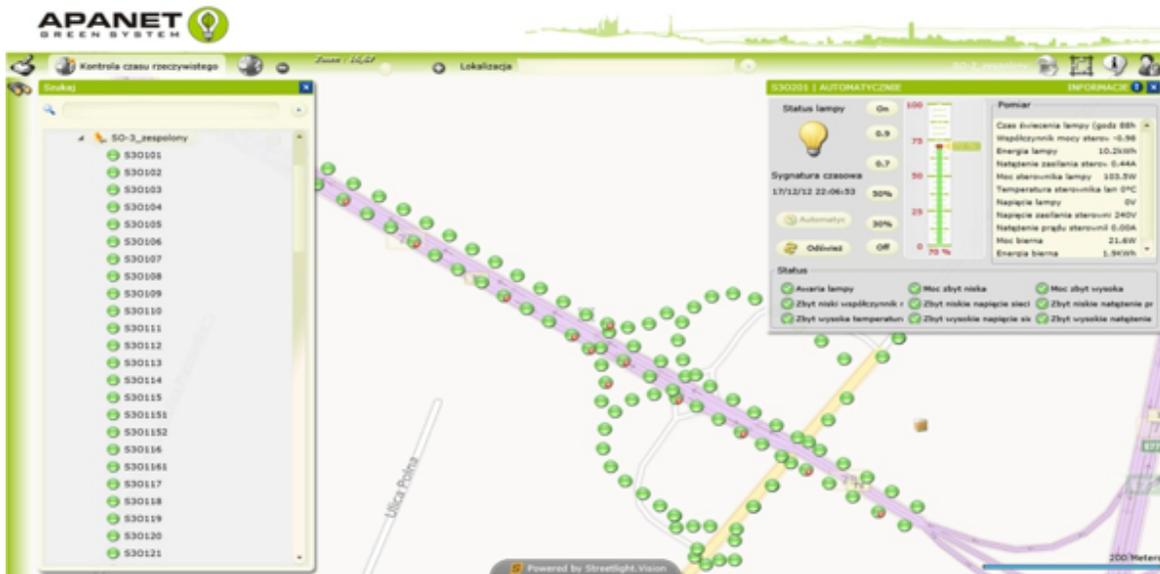
To create the Smart Lighting Control System, APANET installed its GLC142, connected with StreetLight.Vision control system, allowing full control of the beltway's lighting systems down to a single street lamp - on/off powering, dimming, as well as calculating electricity consumption of a single lamp. It reduces lighting parameters whenever possible. The system is able to reduce lighting parameters or completely switch off some of the lamps. Such systems allow a significant reduction in electricity consumption, and therefore, contribute to substantial savings.

Also included is Echelon's SmartServer, whose supply network (PLC technology) communicates with APANET's OLC controllers (located in the lamps) and then send signals that define the amount of power that is needed for lamps and monitor their proper behavior. When measured traffic volume falls below the threshold set by the administrator, light power is reduced by 30 percent.



Source: Budimex SA

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The system allows:

- full control over all individual lamps from the control system; the operator which can manage and control lamps with just the system's website
- the permanent energy audit of the whole network
- immediate information about possible lamps or any network's malfunctions
- the system adapts to weather and traffic conditions by using the lamps' full power, if needed, counting the uptime of individual lamps and planning the light sources exchange (automatically resulting in savings).

The Result

The project, completed in 2013 by the main contractor Budimex S.A., has already produced significant savings in money and energy consumption for the city.

"The system's greatest advantage over similar systems is its ability to continually survey traffic level and weather conditions, and then immediately – and automatically - reduce the lamp's power in case of low traffic and fair weather," said Zbigniew Cichy, general director for national roads and motorways (Kielce) for region of Jędrzejów. "As a result, we've already reduced energy use by 25 percent, as well as significantly cut down on costs and power consumption. Even better, this immediate reaction ensures our drivers our as safe as they can be."



Source: Budimex SA

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