



Sośnica Junction, Poland

New Stretch of Polish Motorway Receives Modern Smart Lighting Control System with LonMark Technology

The Challenge

To design and connect the streetlighting of the “Sośnica” junction, and sections of the A1 motorway from Maciejów (without junction) to Pyrzowice (with junction) to the lighting control system located on the A1 Motorway Maintenance at the Gliwice East. The Sośnica junction is another stage of lighting modernization realized for GDDKiA an investor for National Roads and Motors in Katowice. It is the largest transport hub in Poland, where there are nearly three thousand lighting points.



Apanet Green Systems, a Polish company focused on the design and sales of power consumption reduction systems for various applications, was tasked to provide a control system for the A1 motorway for Sośnica, that needed to seamlessly intergrated with an already existing system, that was implemented in 2015-2016.

This new phase needed to incooperate the following requirements:

- An open system
- 2998 lighting points – integration into control system
- System configuration (connection newly designed devices)
- Extended software license
- Construction of additional weather stations and integration with existing stations
- Design and implementation of traffic measurement stations to the system

APANET's GLC 100 series controllers are certificated by LonMark, ensuring they are compatible with a large number of similar systems. The system built on the LonWorks networking platform was the best option to meet the requirements of the new phase because of the following reasons:

- Open and interoperable standard, accommodates ISO/IEC 13201
- Reliability of the components and the entire system to ensure the safety of drivers
- Free choice of vendors and manufacturers of products, choice of integrators, choice of service contractors
- Energy consumption and CO₂ emission reductions.

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The Solution

To create the Smart Lighting Control System, APANET installed its Green Light Controllers (GLC), 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.

This time the project implemented for GDDKiA includes additional elements of the lighting control system: weather stations that measure precipitation and traffic measurement stations - adapted for real-time measurement and recording of motion parameters. The stations measurement data is sent to the control system, that adjusts automatically the appropriate level of lighting, which brings drop in energy consumption. Luminaires use more power when there is a real need – traffic increase or bad weather conditions and reduces costs while keeping drivers safe.

The system allows:

- Modern lighting management system
- Integrating the next segment of A1 motorway into the control and monitoring system
- Improved maintenance
- Lowers cost by reducing energy consumption
- Allows for adjustment to the lighting levels to the prevailing conditions (traffic, weather)

The Results

The lighting control system implemented for the Highway Maintenance Section in Maciejow allows more efficient control of the road lighting. The system reduces energy consumption and CO₂ emission and information collected by the system improves the service planning process.

Applied solutions from Apanet cooperates with weather stations and real-time traffic measurement stations, which allows to more precisely adjust the required safe level of illumination.

Used devices work based on open communication protocols, which guarantees us freedom in choice of control system equipment's supplier. National roads, expressways and highways managed by GDNR&M are built, extended and rebuilt in stages, so the openness is important feature.



2901 Patrick Henry Drive
Santa Clara, CA 95054, USA
Tel: +1 408-938-5266
www.lonmark.org

Contact:

For further information, please visit

APANET Green System Sp. z o.o.
al. Piastow 27, 52-424 Wrocław,
Poland
Andrzej Lis
andrzej.lis@greensys.pl
+48 71 783 29 30
+48 71 783 29 31
biuro@greensys.pl
www.greensys.pl

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