



Maciejow, Poland

Poland's Maciejow Motorway More Safe and Energy Efficient with LonMark-Certified Smart Lighting System from Apanet

The autostrada A1, officially named Amber Highway (pol. Autostrada Bursztynowa) in Poland is a north-south motorway under construction that will run through central Poland. The construction of the A1 motorway has been a highly politicized issue in Poland, as it is perceived to be an economically vital road that would connect the country's major ports on the Baltic coast with both central and southern Poland.

The Challenge

The Highway Maintenance Department in Maciejow, directed by GDNRM, needed to upgrade the proprietary lighting systems in the A1 motorway section of Maciejow Motorway called the Sosnica-Maciejow and Gliwice-East Interchange. It turned to Apanet to help design an open system that could work properly with controllers from different manufacturers.

Founded in 2011, Apanet is a member of LonMark International and one of the only companies in Poland that could provide an open and interoperable solution. Other system requirements included:

- Wide access to the elements of the open system
- Easy integration, essential for building and rebuilding roads in stages
- Multiple sources of supply, including manufacturers of devices, integrators, and maintenance services

The Solution

The system, which consists of 727 lighting points, is based on Apanet StreetLight Vision Central Management Software. It is equipped with appropriate configuration programs and communication between

the road lighting control system's elements based on open protocols. In addition, the light point controllers--certified by LonMark International--communicate with segment controllers mounted in the lighting cabinet and based on the protocol standard ISO/IEC 14908. The control system communicates with a variety of protocols (with commonly available specifications) such XML, CSV via HTTPS, SMTP or FTP server, making it a true interoperable system. The designed system is able to work with motion and weather sensors, allowing effective control of the installation according to current weather or traffic situations on the road (eg. car accident).

According Andrzej Lis, CEO, Apanet Green Systems, "This project demonstrates perfectly that an open system is much better than a proprietary one. We hope to bring this solution to the attention of other road authorities and local governments in Poland and beyond, which will help us convince them to chose forward-looking road lighting control systems that are open and interoperable."



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The Results

Completed in February 2015, the implemented road lighting control system allows Maciejow's highway maintenance department to automatically control the luminaries' light depending on the maintenance needs, weather conditions or traffic intensity (i.e. heavy or light traffic or a car accident). In the near future adding motion and weather sensors to this road lighting control will allow the department to reduce the light's intensity during certain hours or in the case of low traffic. Since the installation of the motorway lighting management, Maciejow's department has benefited from the following:

- Openness and interoperability, a "future proofing systems" that means the solution will not become obsolete because newer versions can easily replace older systems with products from any number of manufacturers
- Communication based on open protocols
- Energy cost savings – due to reduced energy consumption
- Reduced CO₂ emissions
- Failure tracking – failure detection and alert
- Remote management of both the entire network, as well as every single luminaire

**Note the results cannot be measured, because the contractor introduced a reduction in energy consumption relatively recently.*

"The openness of the devices in the system guaranteed compatibility with other vendors products," said Wojciech Żurek, branch director, General Directorate for National Roads and Motorways, in Katowice. "Thanks to this, we are free to choose any manufacturer of street lighting control. Hence, we can work with any number of providers or conservators. This is very crucial in light of the fact that national roads, expressway and highways managed by the General Directorate for National Roads and Motorways are built, expanded and rebuilt in stages."



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