



## MIL-SM8TAF1GPB

### Industry

Infrastructure Surveillance

### Application

Remote Nodes

### Business Challenge

Flexible and affordable platform needed to support surveillance and control applications across widely distributed and critical public infrastructure.

### Solution

Provides power and data to IP cameras located along remote water works infrastructure.

### Benefits

- Power over Ethernet (PoE) on up to 8 ports
- VLANS
- IEEE 802.3af
- SNMP v2
- Competitively Priced



## Integration of Surveillance over IP in Critical Public Infrastructure

Beginning in 1994, the EU Cohesion Fund has provided support for the developing regions of Europe. The EU Cohesion Fund stabilizes developing national economies with goals of promoting growth, employment and sustainable development.

The Mrzlek water spring is the main source of potable water for the border towns of western Slovenia and eastern Italy. This spring provides drinking water to the Slovenian town of Nova Gorica and provides an additional potable water source for the Italian town of Gorizia. A complex regional project (supported by EU Cohesion Fund and other organizations) was initiated in 2008 and is ongoing to protect the water



sources for the entire Primorska region, including improving the distribution system and providing better water quality. As a part of that project, the upgrade of Mrzlek & Prelesje waterworks included the construction of an eight km connecting pipe between Mrzlek and Prelesje water pump stations, along with the reconstruction of 14 km of existing pipes and eight water reservoirs. According to EU and Slovenian directives regarding critical infrastructure, the vital points of the waterworks system need to be monitored and protected by anti-intrusion and video surveillance systems. The challenge of maintaining security of a system spread over such a wide area could only be addressed by using fiber optic devices. Fiber optic connections will join the main points of the waterworks, while providing a reliable network for rapid transmission of content-rich data.

## The Project

AGM NOVA GORICA d.o.o. is a Slovenian system integrator focused on enhanced security solutions and is a close partner of US-based network equipment manufacturer, Transition Networks. AGM chose to partner with Transition Networks on the Primorska waterworks project. The surveillance system was carefully designed with the Transition Networks R&D department in order to find a scalable, reliable, efficient and future-proof way of completing the project requests.

The surveillance system will cover several points of critical infrastructure after initial installation and can easily expand to provide security on additional infrastructure as it is added. Two remote

# Transition Networks Case Study: Mrzlek & Prelesje Waterworks, Slovenia



## MIL-SM4004TG

### Industry

Infrastructure Surveillance

### Application

Aggregation Nodes

### Business Challenge

Aggregate IP camera data from remote access nodes and local IP cameras to control center at water works headquarters.

### Solution

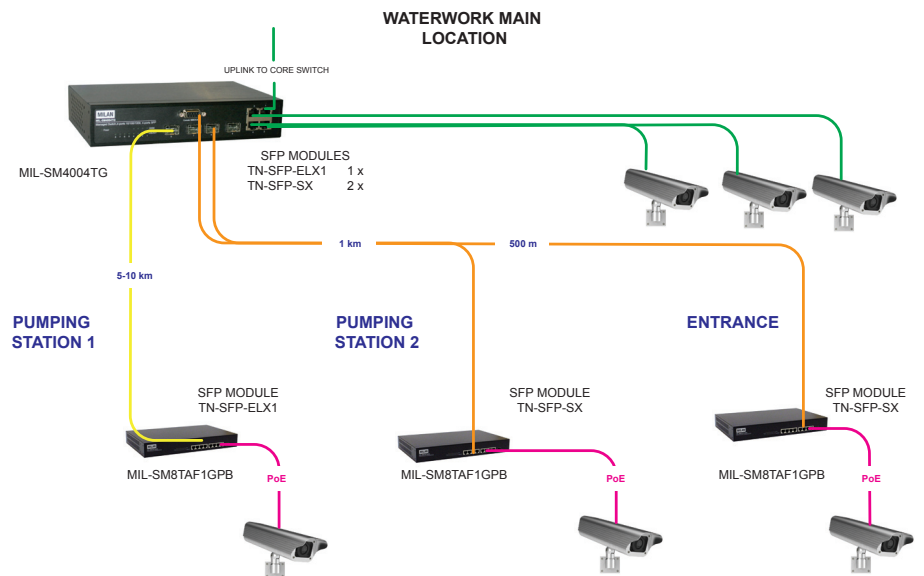
Delivers superior management features for aggregation and control of multiple sources of complex surveillance data.

### Benefits

- QoS
- VLANS
- Link Aggregation
- IGMP
- SNMP v1,2,3
- Competitively Priced



water pump stations (one km and seven km from the central pump station), the main security access gate (approximately one km away from the central pump station) and the central water treatment station require seamless connection in a standardized system, including integration with intruder alarm and video surveillance systems. Additionally, the system will provide connection to a surveillance and control center at the headquarters of the waterworks in Nova Gorica (five km away). AGM was required to combine the existing fiber optic network of different generations (SM cable, MM 50 micron cable, MM 62.5 micron cable) with newly installed fiber optic inserts and extensions to build a grid capable of managing all of the components of the system together. The MIL-SM8TAF1GPB switches are used as the remote nodes for providing the fiber optic connections to the water treatment station and wired connections with Power over Ethernet (PoE) providing both data and power feed to Avigilon security cameras. The MIL-SM4004TG switch was chosen for aggregation of remote nodes and also for connection to Avigilon cameras located at the water treatment station itself. The system transmits via fiber optic connections both video signals and digital output from remote alarm panels to a surveillance and control center at the headquarters of the water treatment center, thus providing an effective way of monitoring both the remote nodes and the local perimeter.



Potable water is a primary commodity of vital importance and invaluable strategic value. It therefore requires proper control and surveillance to keep it secure and consistently available for the local communities. Together with functional improvement of the water distribution system, the waterworks customer improved operational efficiency through installation of the fiber optic grid and the resulting creation of a live network. This system provides unlimited scalability and a variety of connectivity options due to products offered by Transition Networks. This opens the way for further expansion of the system across the other nodes and major components of the waterworks that were not included in this project. Additionally, the network will seamlessly incorporate future elements into the central management security and surveillance systems. The waterworks manager is given a perfect situation-awareness toolkit that helps him successfully manage the water work system in both normal and critical circumstances.

## Next Steps

The security arrangement detailed above can easily be spread over the entire local waterworks system. Moreover, the broad regional project of improved potable water supply foresees multiplied needs for the secure monitoring of the new and reconstructed water paths in the next three to five years. An issue that can be corrected by expanding this system is the enormous loss of water on its way to consumers, which is currently estimated to be around 48%. This will require flow and pressure monitoring and, as a result, an adjacent fiber optic network is being built as new pipes for the regional waterworks system. This new infrastructure not only provides an opportunity for expansion of the control and surveillance system, but it will also form the backbone of faster and more robust broadband access and other future services for local communities.

## About AGM Nova Gorica d.o.o.

AGM offers a high degree of expertise and a long history of providing security solutions to people and their property. AGM offers remarkable reliability, flexibility and customized security and surveillance solutions across diverse industries, including casinos, industrial buildings, banks, public institutions, education, sports facilities, shopping centers and private individuals. Areas of expertise include anti-burglary security systems, access control, fire alarm systems, gas leak alarms, video surveillance and system design. For more information, please visit [www.agm.si/en/index.php](http://www.agm.si/en/index.php)

## About Transition Networks Inc.

Transition Networks Inc. offers networking connectivity solutions that make networks perform more efficiently, more quickly and more reliably, while helping companies leverage their existing networking infrastructure.

Transition Networks brand of media converters make conversion between disparate media types possible, providing conversion technology solutions that offer the necessary adaptations without affecting the performance, nature or appearance of the network. Its complete portfolio of multilayer switching products is designed to facilitate low-cost network evolution with unique solutions, easing the stress on networks caused by high-bandwidth applications. Transition Networks' portfolio of Power over Ethernet (PoE) media converters and switches provide power and data at the furthest points of an Ethernet network, including in harsh outdoor environments.

Based in Minneapolis, Minnesota, USA, Transition Networks distributes hardware-based connectivity solutions exclusively through a network of resellers in over 50 countries. Transition Networks is a wholly owned subsidiary of Communications Systems, Inc., a publicly traded company (NASDAQ-GM: JCS). For more information, please visit [www.transition.com](http://www.transition.com)

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