

# ASFOM Provides Resilient Solution

Roppener road tunnel safety system



## Background

Thanks to the construction of a second tunnel and the installation of a video surveillance system, the Austrian Roppener tunnel now claims to be one of the safest road tunnels in Europe. With KBC Networks transmission equipment in place, the new surveillance system provides real-time video that is transmitted back to the control room set within the mountain itself.

The 5km Roppener tunnel runs east-to-west, under the southern slope of the Tschirgant Mountain between Roppen and Imst within the Austrian Tyrol. It was built between 1987 and 1990 and originally operated as two single lanes of facing traffic. Following a number of traffic incidents, a project to improve safety and traffic flow got underway in 2006. It began with the construction of a second, south tunnel to provide two separate, two-lane routes under the mountain. To further improve traffic flow and safety within the two tunnels, a video surveillance and information system was installed with the control centre located at Saint Jakob.

## Our Customer: Barox Kommunikation

### The Challenge

With cabling distances stretching to 10km, and the requirement for a real-time video system with minimal delay from camera to control room, transmission distance and optical budget were immediate concerns for the design team. The system also required redundancy, and with space and fibre at a premium, the solution needed to be channel and fibre efficient.

## The Solution

A KBC ASFOM video and data system has been installed within both tunnels providing redundant and uncompressed, real-time video transmission via singlemode fibre back to the control centre from a series of nodes. Within each tunnel, each node connects a series of cameras in a star configuration, and is then linked back to the control room via a drop-and-insert redundant ring. Compact and ruggedised ASFOM units are installed at the camera points, and at each node, a singlemode ASFOM 3U chassis units receives the camera signals and feeds into the bus backbone, back to a 10U chassis unit at the head-end.

For true system redundancy, Barox designed a 'collapsed ring' with two separate, fibre rings that link alternately to every other node and operate independently of each other. Each ring uses two singlemode fibres, and at each node point, the ASFOM unit splits the signal electrically before transmitting through dual transmit and receive optics. This provides greater system resilience than an optically split system.

## Outcome

Today, with the new South tunnel complete, the north tunnel renovated and the additional security measures in place, the two-lane system is fully operational. Barox delivered the required video surveillance system successfully with the KBC transmission system providing redundant and un-compressed video with minimal delay. When asked why the KBC system was chosen, the answer came down to the simplicity of the solution, the flexibility of the ASFOM units and the ease of their installation.



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