Transtec Gotthard

The robust solution provides the reliability and resiliency required to function optimally in an extremely challenging environment.

"This tunnel is designed to last for 100 years. am sure that the Alcatel-Lucent Enterprise colleagues will manage it successfully. They had the last 8 years well under control. They will continue for the next 92 years, or longer. We are also very proud of the AVA Digital award and Muse Creative Award won by Koenigs film for our video promoting the partnership between Gotthard tunnel and Alcatel-Lucent Enterprise."

Peter Huber, Project Leader,
Transtec Gotthard

Running through the Alps in Switzerland, the Gotthard Base Tunnel is a feat of engineering. It is the longest and deepest traffic tunnel in the world. The tunnel opened in June 2016, with full services starting in December 2016. It took as many as 2400 workers at peak times to construct two 57-kilometre-long tunnel tubes, with 152 kilometres in total when you include access tunnels and cross passages. The Gotthard Base Tunnel is one of the first major global engineering projects to incorporate advanced Internet of Things (IoT) technology to transform the delivery of essential services.

CHALLENGES

The tunnel uses a web of IoT devices to manage passenger and vehicle safety 24/7 in an extremely challenging environment, including up to 40°C+ heat and over 70% humidity. An extremely stable and reliable data network was needed to ensure transmission of essential operational data using automated technology.

It was critical that the 152-kilometre tunnel area, including 168 cross passages, be connected and secured with IP network connectivity as even minimal network disruption could cause delays and potentially impact worker and passenger safety.

ACTION

The Alcatel-Lucent Enterprise solution demonstrated the reliability required as well as the capability to function optimally in the Gotthard Base Tunnel challenging environmental conditions.

The solution offered the most modern functionalities as well as the highest standard of durability. It was also the only option to include fanless switches.

The solution was selected after tests proved the Alcatel-Lucent OmniSwitch® 6855 Hardened Ethernet Switch more than met the tunnel's needs.

PRODUCTS AND SOLUTIONS

Alcatel-Lucent OmniSwitch 6865 Hardened Ethernet Switch

RESULTS

Technical benefits

- The extremely resilient and reliable network has consistently powered the Gotthard Base Tunnel's web of IoT devices and services such as door monitoring, sensors, cameras, ventilation and drainage infrastructure, communications, and control and monitoring systems, all of which send and/or receive real-time data.
- Almost 1000 OmniSwitch 6855 switches make up the industrial-grade hardened network and connect all of the tunnel's 70,000 data points in a very harsh and difficult operational environment.

Financial benefits

- The rugged components that make up the network are built to last, employing a passive cooling mechanism that ensures low maintenance needs and equipment longevity, which leads to lower costs.

User experience benefits

- The specialised hardened network enables the Gotthard Base Tunnel to take IoT where standard networking cannot, guaranteeing the level of service required for the longest, safest and best-connected tunnel in the world.

WANT TO TALK WITH SOMEBODY?
CONTACT US

Customer Story

MARKET: TRANSPORTATION	**COUNTRY:** SWITZERLAND	**COMPANY:** GOTTHARD TUNNEL
DEAL IMPLEMENTED: 2008-2016	**NUMBER OF USERS:** 325 TRAINS PER DAY	