

PROJECT IN THE SPOTLIGHT:

Automatic Incident Detection and traffic data collection in the Festning and Bjørvika Tunnel (Oslo, Norway)



The Festning tunnel



The Bjørvika tunnel during its construction

The Festning and the Bjørvika Tunnel are two motorway tunnels on the E18 in the city center of Oslo, Norway. Both tunnels have been equipped with an intelligent detection system to guarantee high-level road user safety 24/7.

The Festning tunnel, 1800 meters long, was opened in 1990 and has two tubes with each three lanes. This tunnel removes traffic from Radhusplassen, the square in front of the Oslo City Hall, and improves the access from the city to the waterfront.

The Bjørvika tunnel, directly connected to the Festning tunnel, removes on its turn substantial traffic volumes from the Oslo harbor area. The main goals of this prestigious project along the Oslo fjord are to achieve less dust, less noise, a cleaner port and safer traffic - due to the installation of the most recent surveillance and safety systems. As 7 of 10 vehicles in the Bjørvika area are transferred to the underground route, this previously heavily trafficked area can now be released to residential, commercial and public development.



Illustration of the Bjørvika tunnel, the subsea tunnel in the Oslo harbor

This tunnel, with two 3-lane tunnel tubes, is 1100 meters long, of which 675 meters immersed: the various elements are to be constructed on land, floated into position and finally lowered onto the seabed - a unique construction procedure in Norway.

The Bjørvika tunnel has been completed in 2010 and links the Festning tunnel in the west with Ekeberg tunnel in the east for an unbroken total length of 6 kilometers.

Automatic Incident Detection (AID)

Effective incident management inside tunnels has proven to save lives. Fast incident detection and fast incident verification can reduce the consequences of accidents and prevent secondary accidents. The City of Oslo has therefore installed video detection technology to monitor the traffic inside the Bjørvika and Festning tunnel. Incidents like smoke, pedestrians, fallen objects... are detected within seconds and transmitted to the traffic control centre who can immediately take the right actions to clear the incident.

System at a glance

82 VIP-T modules

- ✓ Automatic Incident Detection
 - *Traffic events: stopped vehicle, inverse direction, speed drop, traffic congestion, levels of service*
 - *non-traffic events: smoke, fallen object, pedestrian*
 - *technical alarms: bad video, no video, power failure, communication error, redundant power, I/O expansion*
- ✓ Traffic data collection
 - *Flow speed*
 - *Occupancy*

1 T-Port server

- ✓ Collection and storage of traffic data and events from VIP-T
- ✓ Interface for integration of the video detection system into the central management system at the control centre

Key components

VIP-T

- ✓ Automatic Incident detection and **MPEG-4 compression** integrated on one board
- ✓ **IP-addressable** video detector for a wide range of traffic and non-traffic events and technical alarms
- ✓ Automatic recording of **pre and post incident** image sequences

T-Port

- ✓ **Software platform** for collection and storage of traffic events, alarms and image sequences generated by VIP-T
- ✓ Open architecture for integration into the larger traffic management system

Aventi Technology AS – a Norwegian system integrator and Traficon partner - has the floor

Jan Olav Larssen, Project Manager of Aventi Technology AS, tells about his experiences with Traficon for various Norwegian video detection projects like the Festning / Bjørvika Tunnel project:



"Here in Aventi, we have had an excellent impression of Traficon - from the very first email we sent them, to our current count of over 500 VIP-T modules deployed. Traficon was a natural partner for us in such large and strategically important projects as the Festning and Bjørvika tunnels. These tunnels will change central Oslo radically, and we wanted to be sure to have a very reliable and professional partner, since the project is receiving a great deal of attention from both media and government. The focus on security in these tunnels is very high, and they will virtually be the aorta of Oslo's traffic system, as well as the first subsea sunk tunnel in Norway. It means a lot to us to know that we're always backed up by highly skilled professionals in Belgium and that we can always count on them to do their job as we do ours. Our experience has been that Traficon always delivers: both when it comes to equipment and quality, and support afterwards."

FOR MORE INFORMATION ON THE PROJECT, PLEASE CONTACT MR. KOEN SOENENS - TRAFICON (KS@TRAFICON.COM).
THE FESTNING / BJØRVIKA TUNNEL PROJECT IS A JOINT REALIZATION BETWEEN AVENTI TECHNOLOGY AS AND TRAFICON.
