

## Safest work environment for Norra Länken.

Safeguarding lives during tunnel construction was the main objective for IDENTEC SOLUTIONS to deploy WATCHERSERIES.

With the individual identification of workers, real-time data, crucial information and alarms, it allows managers to know the number of people inside each tunnel and only sections of the tunnel need to be closed in emergency situations, avoiding downtime and delays.



“With our RFID access control system linked to the alarm and communication system, we’re always aware of the safety level in the tunnels. Instant emergency alarm information is key to us. With this solution we automatically get updates in clear text on our radios and can react quickly to any emergency situation.”

Roger Zell,  
Security Manager at Norra Länken

## COMPLETE PERSONNEL SAFETY DURING TUNNEL CONSTRUCTION

### Linking RFID, CCTV, Access Control, Emergency Alarms and TETRA Radios

An immense and complex tunnel, the project was undertaken to reduce the large volume of traffic and noise pollution from the roads and highways that surrounded the Swedish capital. Trafikverket, the company responsible for the project, proposed a large percentage of the traffic be directed through the city’s tunnels. It was essential to Trafikverket, they deploy a safety system that delivered the safest possible work environment while at the same time allowed personnel complete freedom of movement throughout the tunnel. The system also needed to comply with stringent Swedish laws. To achieve this, the combined safety solution from IDENTEC SOLUTIONS and ZONITH was selected.

### Combined Elements of Safety

The tunnel safety solution utilizes active RFID tags to monitor employees as they enter and exit sections of the tunnel. Safety staff is then able to monitor and access real-time information on how many people are in a specific section of tunnel at any given time.

A TETRA radio system was then deployed to support secure voice and data traffic. The TETRA radios were also used to display information on each employee’s unique identification number and the tunnel section they occupied. In addition, the TETRA radios are also used to receive technical and critical alarm information via text messaging.

To further enhance emergency communication, panic buttons were located on each TETRA radio and wall mounted alarm points. This means any employee can activate an emergency evacuation alarm from anywhere within the tunnel, and automatically distribute these alarms

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# SUCCESS STORY NORRA LÄNKEN

to other alarm points within selected sections. By combining the TETRA and RFID access systems, safety staff is instantly notified via text messages about the number of people within the tunnel once an emergency alarm is activated. This ensures that immediate action can be taken and delays during construction are minimized.

The tunnel is constructed through several contractors working on various parts of the tunnel in parallel. With the IDENTEC SOLUTIONS' centralized WATCHERSERIES solution, information from each contractor is gathered, permitting instant access and real-time distribution of important information.

## A Complete Tunnel Safety Solution

The TRAILBLAZER Application Device with a ZONITH Alarm Control System module was installed in a centralized location. It links to remotely located RTCU units via TETRA and RFID reading stations and CCTV cameras via Ethernet. Each RTCU is connected via I/O inputs to fire sensors, technical alarms and evacuation panic alarm buttons. CCTV cameras and RFID reading stations are combined to facilitate illegal trespassing of personnel without authorized RFID tags.

Vehicles and personnel are tracked within each section and across sections of the tunnel project in real-time. Information on tunnel personnel, contractors and a vehicles location can be viewed on client stations, compiled for printed reports, and used to make sure alarms are automatically forwarded to on duty safety staff through the ZONITH Alarm Control system and over TETRA radios.



## FEATURES

- All vehicles, construction workers and staff are individually identified using RFID tags.
- RFID readers are located at entrance and exit point to the tunnels.
- All voice and data traffic is transmitted using secure TETRA communications.
- Alarms are immediately dispatched in clear text to on-duty staff.
- During an evacuation managers access real-time information about the number of people inside each tunnel.
- In emergencies only sections of tunnel need to be closed avoiding downtime and project delays.



## The Customer

The Swedish transport administration Trafikverket is responsible for the public road transport infrastructure in Sweden. Trafikverket's aim is to provide a road transport system that delivers the highest standards possible and is economically efficient. Trafikverket is committed to providing safe, environmentally friendly roads that contribute to regional balance. Trafikverket manages more than 100,000 kilometers of roads throughout Sweden.

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