

see smart® Road Tunnel

Advanced cost-effective solutions for road tunnels based on



**Critical
Comms**



Geolocation



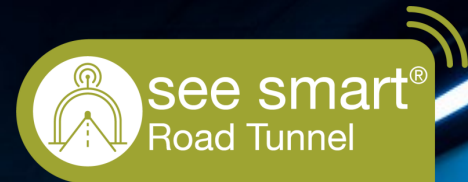
Voice Alert



IoT



High Rate




Innovative approach of bringing reliable radio coverage to road tunnels. It is a perfect merge of technology and smart solutions that secure all the stages of the tunnel lifecycle.

see
Telecom

Connecting to life

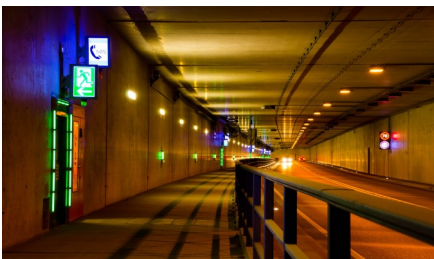
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Innovative solutions for cost optimization of road tunnel lifecycle.

see smart® Road Tunnel

see *smart® Road Tunnel* is a perfect merge of technology and smart solutions that aims to secure all the stages of the tunnel lifecycle: from construction and operation to maintenance, as well as solutions for emergency and condition monitoring.



Solutions for smart tunnels

The *see smart® road tunnel* approach offers integrated solutions for all radio communication assisted topics. The **leaky feeder**, as the central carrier for critical communications, enables further technological migration and becomes the backbone for broadband communications inside road tunnels.

Security management

Road tunnels are one of the most dangerous confined spaces that thousands of people pass through every day. In case of accidents, the probability of human disaster is extremely high: multiple crashes, fire, or smoke can kill. The *see smart® road tunnel* approach ensures the prevention and management of incidents, with an obligation to secure property and people in case of accident.

Facility management

Operations officers, as well as construction and maintenance teams need a reliable private mobile radio on a daily basis to monitor and control all human and material resources and environmental conditions inside the infrastructure. This enables them to be informed and ready to act in an emergency, but also minimize construction and maintenance costs, for example electricity costs.

Preventive Maintenance

Advanced technologies allow the early detection of any potential danger in road tunnels, which notifies the operating team and gives them the necessary information and time to take the required actions. Thus, they are able to act proactively and avoid possible accidents and breakdowns, reducing the risks to zero.





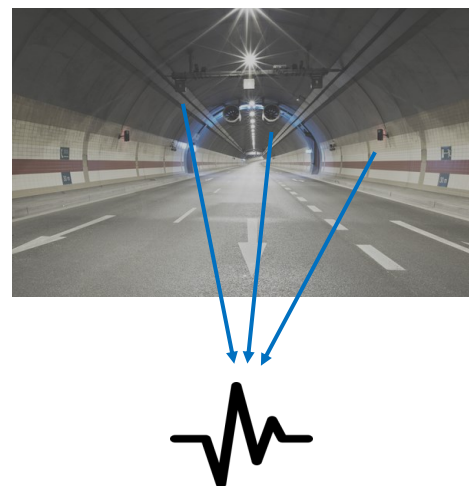
Next generation radiocommunication brings Voice and Data for advanced services

IoT Networks

All the objects installed inside the tunnel communicate by IoT Networks. To prevent possible falling of the objects on the roadway which can cause accidents, periodic measurements of all fixtures are held. Traffic signs, message signs, lightings, ventilation are strictly controlled to detect any weaknesses.

Geolocation

Implementation of the newest technologies and radio communications, like GPS signals compatible with all standard devices in confined areas, allows us to make them more smart and safe.



Services without limits

Thanks to our digital broadband technology, all 1- and 2-way radio networks can be rebroadcasted:

- AM, FM, DAB
- VHF simplex, duplex
- DMR, DMR Tier 3, eDMR, MPT1327
- UHF simplex, EDACS
- TETRA, TETRAPOL, TEDS
- P25, LTE
- GSM, DCS, UMTS, LTE
- Internet of Things (IoT), WIFI
- 5G ready
- Etc...



Reliable critical communications

In case of intervention, emergency services as Police, Fire Brigades, Ambulances, need a robust and reliable radio coverage system to communicate inside road tunnels.

High Rate Radio Access

Based on a 4G LTE core SEE Telecom's systems allow operators to make voice calls, group calls, and digital conferences. IP technology allows you to connect to the infrastructure or site data server to exchange documents, view web pages for third-party applications, image uploads, etc.



Voice Alert

In case of danger in a tunnel, car drivers have to be warned immediately. During normal operation, the SEE Telecom system rebroadcasts AM, FM and DAB channels inside tunnels. When an emergency occurs, the users get informed about the danger and guidelines via emergency communications as Voice Break-In and Public Address.

Center Of Competence Smart Tunnel

SEE Telecom is an R&D driven company. The modern facilities in Nivelles are being developed into a Center of Competence for Smart Tunnel Technologies, a place where innovations are integrated and tested before being introduced to the market.

With VHF, UHF, and TETRA Repeater Technology still at the core of the SEE Telecom Portfolio, none of the solutions jeopardize the functioning of the Security Communications Network, used by tunnel operations, maintenance, and inspections services on daily basis, as well as Police and Fire departments in case of incidents and essential for saving lives.

see smart® solution range



Some references

Greece : Artemisio, Kalogeriko, Sterna, Ko-Pa
France : A8, A86 Duplex, A89, Mont-Blanc, Northern Ring of Lyon, Grand-Mare, Saint-Béat
Belgium : Brussels, Flanders
Germany : Europagarten
The Netherlands : Westerschelde
Switzerland : Marcolet, Cheseaux, Neuchatel
Spain : Ezcaba, Bracons, La Codina
UK : Tyne Crossing
Luxembourg : Motorway A7, Micheville
Norway : Kivsvveien, Tinnsjoveien, etc...
Poland : Martwą Wisłą (Gdańsk), Gliwice
Slovenia : Jasovnik, Ločica
Chile : Costanera Norte Santiago
Vietnam : Hải Vân Pass 1 & 2
UAE : Saadiyat
Colombia : La Linea, Oriente

Service level agreements

The availability of telecommunication system is fundamental during operation of infrastructures or during construction phase. SEE Telecom proposes Service Level Agreements with preventive and corrective maintenance to protect against any failure and damage. We are able to connect systems through a secured VPN to offer to our customers best-in-class technical support.



Worldwide presence



SEE Telecom has a worldwide network of local offices or official partners chosen for their professionalism and high skills. They have regular training sessions on our equipment and are perfectly able to design, install, and support customers needs with the best efficiency along with the project and life of the systems.



About SEE TELECOM

SEE Telecom is a world leader in the provision of scalable, flexible, user-friendly, and cost-effective systems for multi-services radio coverage inside confined areas to enhance safety and facility management. Since 1999, SEE Telecom has equipped more than 1000 km of road tunnels, railway tunnels, and metros all over the world. SEE Telecom solutions are available worldwide through an exclusive network of partners.

Your authorized local partner :



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