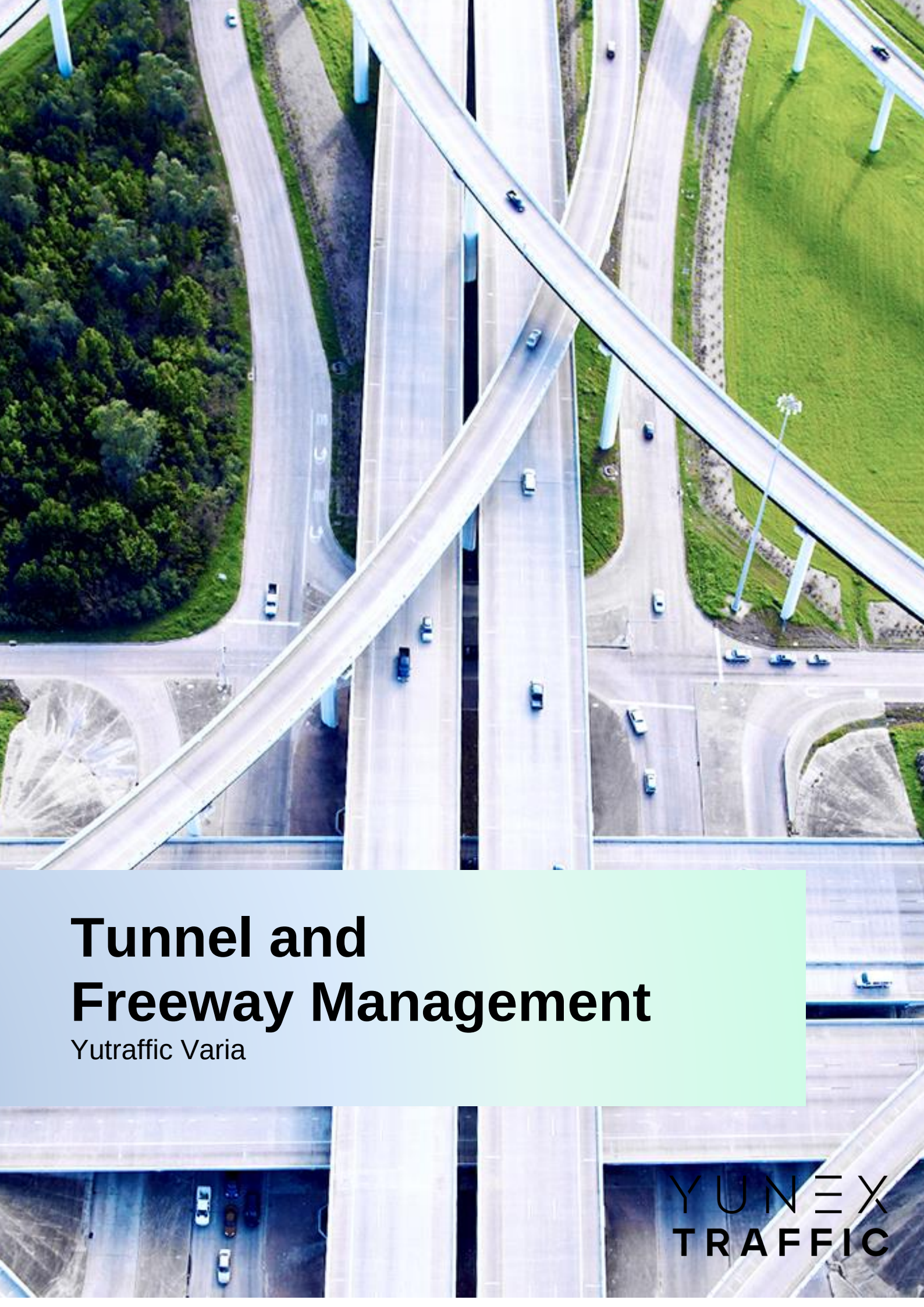

Tunnel and Freeway Management

Yutraffic Varia

YUNEX TRAFFIC

One control center. Many benefits.

Wherever traffic regulating systems display situation-tailored warnings and speed limits, the risk of congestion and accidents diminishes. On motorways in general and in tunnels in particular, hazard warnings, lane closures, speed limits and no-passing zones make traffic run more smoothly and increase traffic safety.

Smoother traffic flow, reduced emissions

In dedicated studies, traffic regulating systems in Germany and abroad are regularly proven to lead to a significant decrease
in accident numbers. As the vehicles are then moving at a uniform speed, not only accident numbers are reduced but also travel times – and the capacity of the road increases considerably. At the same time, emissions are much lower than in stop-and-go traffic, which is known to be especially polluting. In achieving these multiple benefits, intelligent traffic centers such as Yutraffic Varia are playing a decisive role.

A single control center for motorways and tunnels

Tunnels are typical bottlenecks in the road network and require special attention in terms of safety. Quite often, however, operational and traffic control functions are managed separately for motorways and tunnels. Shared tasks are implemented via interfaces – a time-consuming and expensive method. In contrast, Yutraffic Varia is a control system that integrates both fields of application. This saves money and time, improves overall functionality and enhances road safety.

Yutraffic Varia: The benefits at a glance.

- A single control center for motorways and tunnels
- Improved functionality and enhanced user-friendliness
- Increased safety since fewer interfaces are involved
- Reduced workload for operators
- Lower expenditures for operating rooms, hardware and software
- Designed for universal use
- Modular and scalable
- State-of-the-art control center technology
- Equipped for communication with cooperative traffic systems (V2I)

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Yutraffic Varia is very versatile and suitable for small-scale traffic solutions as well as for complex control systems. The control center operators can proactively control what happens on the road and monitor traffic across a wide area. Manual or automatic warnings, e.g. in case of traffic congestion, accidents or dangerous weather conditions, ensure the smooth flow of traffic on individual road sections and across the entire road network.

From simple to complex

The Yutraffic Varia control center combines tunnel operations technology and motorway control technology. This minimizes the number of interfaces to be coordinated and provides integrated functionality – for enhanced safety in controlling complex systems. Its modular structure makes Yutraffic Varia especially flexible, allowing system configurations of any size, from a compact motorway control center for 20 outstations, or a tunnel control center controlling various operational systems, right up to a full-fledged, higher-level Yutraffic Varia Nova control center that manages 10 or more subcenters. With up to 150 remote stations connected to a single subcenter! Tunnels of any length are safely controlled.

Flexible deployment

The system is suitable for use on all control levels and can be easily expanded to match any new requirements you may have. The biggest benefit: flexible options for seamless combination thanks to full compatibility between all function modules, whether for long-distance traffic, tunnels or parking. This makes Yutraffic Varia the right system for managing traffic on regional motorways and city highways, on expressways and tunnels.

The all-in-one control system

Yutraffic Varia can be used to control variable message and direction signs as well as lane-use signals or barriers. It monitors and controls lighting, ventilation, power supply, fire detection and pump systems in tunnels. In addition, it supplies important data to traffic information services and seamlessly integrates tolling systems, video surveillance equipment and emergency call systems as well as all kinds of devices for environmental and traffic data acquisition. Connection to neighboring traffic centers and outstations is also possible.

Innovation as guiding principle

The new Yutraffic Varia traffic management center is based on decades of experience and meets the diverse needs and requirements of a wide range of customers. It goes without saying that the traffic solutions deployed are always at the leading edge of technology – thanks to our focus on the continuous further development of our Yutraffic systems. The latest control center technology, for instance, enables Yutraffic Varia already today to communicate with innovative parking detector types or cooperative systems (V2I) and has already successfully stood the test in e-Highway applications.

The integration of operational and traffic control functions helps enhance safety in tunnels.

Up to 150 outstations can be connected to a single sub-center.

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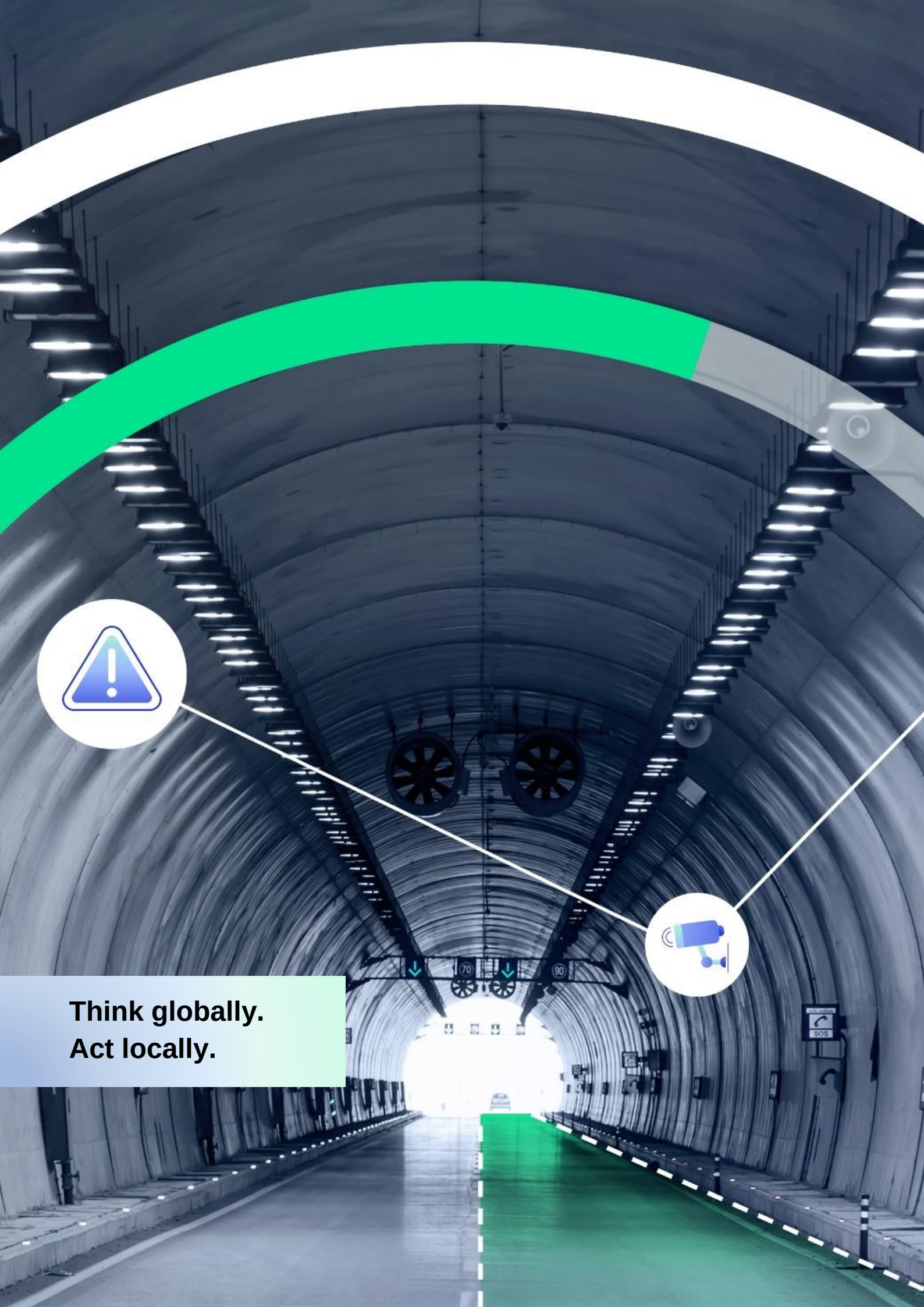
Less congestion.
Fewer accidents.
Higher capacity.



Think globally.
Act locally.

Why does the “100 kph” speed limit sign suddenly light up even though there is no traffic jam in sight? How does the system “know” that several thousands of cars are about to leave the huge parking lot of a nearby soccer stadium and will mostly head for a particular access ramp? These automatic or semi-automatic responses of the control and management center are the result of complex analyses.

Automatic or manual – exactly as needed

Under normal circumstances, the system controls traffic in automatic mode based on predefined objectives such as speed harmonization, timely provision of warnings on congestion, wet roads, fog and black ice, or optimization of air quality and brightness levels in tunnels. It can also open up the hard shoulder to increase road capacity – for more safety and improved traffic flow. For construction sites or in the case of accidents, the Gendarm module can automatically calculate a switching routine, or the traffic engineer can initiate targeted manual interventions.

Complex analyses and intelligent measures

Targeted traffic control often requires the collection and correct interpretation of countless situational factors on long road sections and across wide areas, virtually in real time. Yutraffic Varia uses a whole range of different, very complex methods to evaluate the data from all existing sensors and systems and define appropriate intervention measures. For fast and easy selection and implementation of these logical procedures, the responsible traffic engineer can rely on the user-friendly Cosmos strategy module.

Detection of incidents and accidents

The intelligent interpretation of the sensor data from the connected cameras or other detection systems allows Yutraffic Varia to automatically detect critical situations and to initiate the corresponding actions: alert the control center operators to the situation, generate warnings for display along the affected road section, inform the police, traffic information agencies and emergency services – almost all at once and even autonomously, if desired.

Congestion warnings keep the road users informed and increase safety.

Speed limits ensure a smooth flow of traffic and help prevent traffic jams and accidents.

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A control or management center collects and processes an enormous amount of diverse data. The transparent presentation of this information is quite a challenge. Not to forget that important parameters may keep changing every second. Sometimes events cannot be satisfactorily handled by the automatic system, but require immediate manual intervention. Yutraffic Varia offers optimal support for control center operators, providing them with right information at the right time.

Up-to-the-minute data, situation-tailored action

The system ensures that the experts in the control center receive exactly the information they need to assess the current situation, exactly at the moment when they need it for initiating the right action. Given that the abundance of relevant and continuously changing traffic data is virtually impossible for operators to keep track of, this constitutes an essential contribution to safety.

All types of control, guidance and monitoring

Yutraffic Varia allows the realization of all types of operational traffic control functions, in various combinations:

- Traffic guidance in large or small networks (route or parking information)
- Manual or automated road section control, e.g. congestion and incident alerts, weather warnings for fog or wet roadway; temporary opening of hard shoulders
- Intersection and access control (ramp metering and lane control signs)
- Traffic control in tunnels as well as upstream and downstream
- Management of the operational control systems in tunnels
- ITS-based parking (e.g. capacity of parking spaces, condensed parking)
- Control of the traffic flows at factory gates

Data from all sources

For these manifold tasks, Yutraffic Varia processes data from all kinds of sources: urban traffic control and management systems, neighboring motorway and tunnel control centers, various public authorities, and
a wide variety of sensors in the tunnel and on the open road. The make and model
of those systems doesn't matter because our management center features open interfaces according to international standards and can smoothly interact with subsystems of many different providers.

Information is key

Today, the provision of constantly updated traffic information is a must on the radio, the Internet or in navigation systems. Yutraffic Varia delivers all required data and traffic reports directly to the responsible government traffic agency as well as to the media, service providers and any other interested party. This means that road users have access to valuable information not only directly on the road, but also via other channels – an important prerequisite if motorists are to help avoid traffic jams through an intelligent choice of route.

Yutraffic Varia ensures that the experts in the center get exactly the information they need to assess the current situation.

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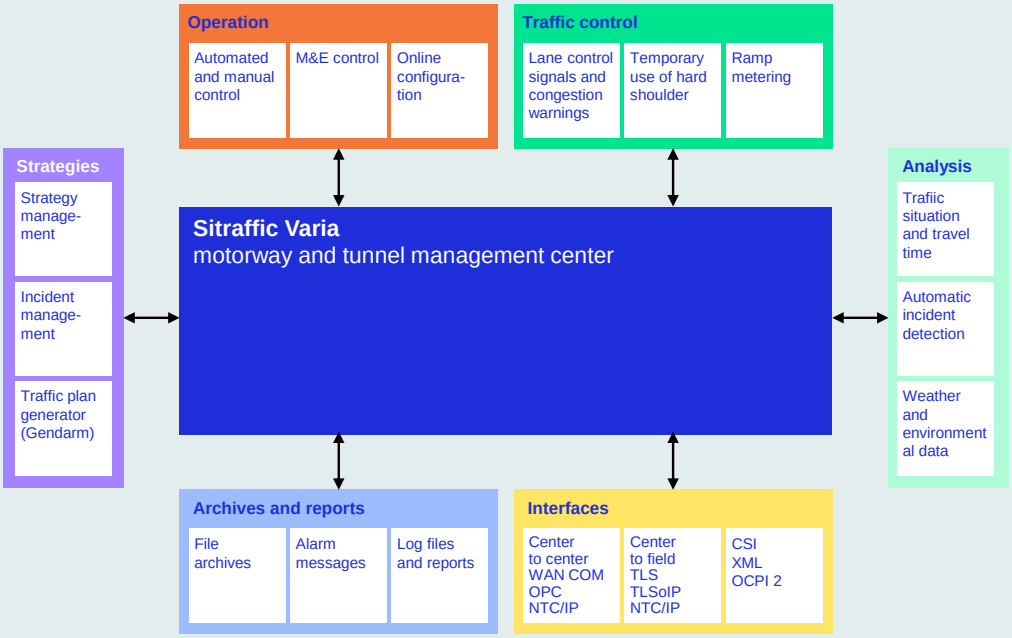
Yutraffic Varia: Fully modularur Contact

Yutraffic Varia is an important member of the Yutraffic system family. Hence it shares a key family trait: full modularity. With all that, the focus is not on particular technologies, but solely on the desired functionalities. This allows the customer to start out with the basic system and later expand it step by step – to any scale and across all functionalities.

All advantages of the Yutraffic system family

- Optimum interoperability and data con sistency between systems for urban and interurban traffic, parking, tunnel techno logy, all kinds of intelligent transport technologies and traffic engineering procedures
- Extensibility
- Data security
- Open interfaces and compliance with all national and international standards
- Reliable integration of established and innovative technologies
- Know-how, maintenance and other services provided by the global leader in road traffic engineering

Sitraffic Varia: The control and management center for motorways and tunnels



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Detailed statistics and logs

Yutraffic Varia generates a wealth of statistics and logs for a variety of purposes. These make it possible, for example, to accurately determine the effects of a specific traffic regulating measure, or to precisely document operating states and manual interventions.

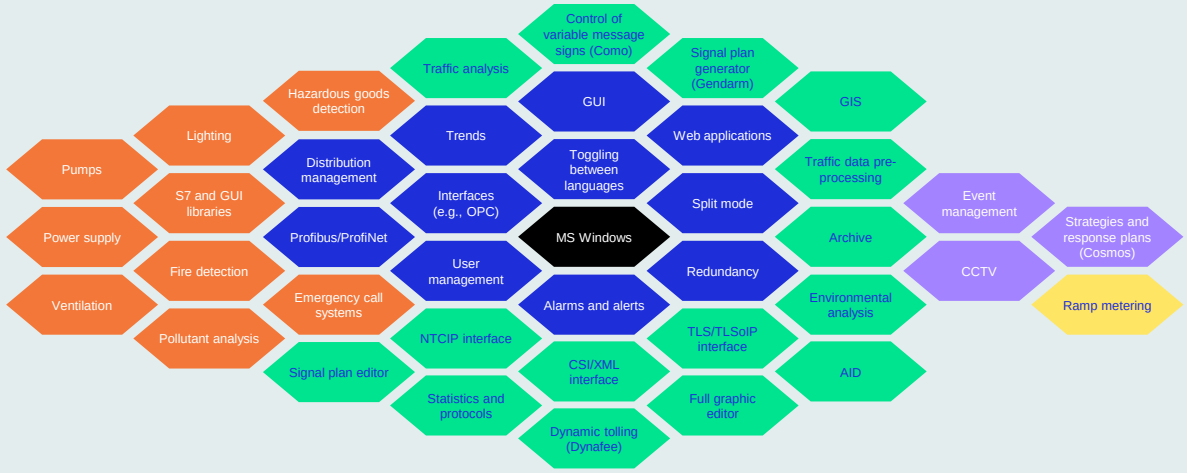
Software quality

For Yunex Traffic, the quality of the software plays just as important a role as the functionality. This is the only way to achieve predictable and reproducible results. The focus is on the following key aspects:

- Reduction of on-site work (installation, commissioning, on-site tests)
- Pre-verification of software modifications to facilitate updates during ongoing operation
- Extended reusability of software modules to allow more efficient workflows while minimizing implementation time
- Traceability ensured by quality gates with standardized and documented quality reports

Its long tradition of quality management in projects, product development and manufacturing provides Yunex Traffic with abundant experience and quality know-how as the basis for every new project.

Sitraffic Varia: Flexible solutions with modular system architecture



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