

ROAD TRAFFIC TECHNOLOGY



GOOD
JOURNEY
INNOVATIONS

cross[®]



cross-traffic.com

CROSS HOLDING

For over 30 years, we have been developing technologies that shape modern traffic. We are a Czech technology company founded in 1994 in Zlín, Czech Republic, which has gradually developed into an international leader in the field of intelligent traffic systems. Today, our solutions operate on five continents, helping millions of people travel safer, smoother and more efficiently.



VISION

To be a global technology leader in intelligent mobility and actively shape the future of traffic. We want traffic to become safer, more efficient and more environmentally friendly – regardless of city size, climate or geography.

MISSION

To create reliable technology systems that help cities and infrastructure managers control the movement of people and vehicles. Our mission is to connect technology, data and experience into solutions that bring long-term value to partners and traffic users.

WHY CROSS?

We are a strong technology player with in-house development. We handle complex, legislatively demanding projects and have experience from cities to highways, mountains, and deserts. Our solutions have been proven in global practice.

1994

BEGINNING OF THE STORY

200+

EMPLOYEES

50+

DEVELOPERS

30+

MILLION EUR TURNOVER

The advanced technologies we develop in-house at CROSS are applied in everything we do – ITS and Smart Cities projects, Traffic Control, Parking, Weigh-In-Motion, Road Telematics and Road Weather. We have specialists on hand for consultation capable of discussing a potential project of any scale, covering all the bases – from A to Z. An important factor for clients

is the knowledge that any state-of-the-art proposal from us will be interoperable with the software or hardware they already have in place and can be customised to suit the given application. Systems by CROSS have been installed in locations from Japan to Brazil, Norway to Tanzania with the aim of keeping traffic moving whatever the local conditions.

CROSS HOLDING:

CROSS Zlín | CROSS Labsystém | CROSS Deutschland | CROSS Türkiye | CROSS Columbia | Incinity | Spinnea | Britec





HARDWARE
DEVELOPMENT



SOFTWARE
DEVELOPMENT



IN-HOUSE
PRODUCTION



TESTING AND
SIMULATION
ENVIRONMENT



FACILITIES FOR
CUSTOMER SERVICE
AND SUPPORT



CUSTOMER
TRAINING



NEW CROSS ZLÍN HEADQUARTERS

THE BUILDING THAT CONTROLS THE MOVEMENT OF THE WORLD

In 2023, we opened a new development and production headquarters in Zlín, Czech Republic. The architecturally distinctive building connects administration, development and production into one technology centre. As with our products, we apply modern technological solutions here – intelligent building management, energy-saving systems and advanced operation automation. The building is not just a company headquarters, but a functional demonstration of our approach to technology. It is the place where the systems that control traffic on several continents are created.

COMPLETELY IN OUR HANDS

FROM DEVELOPMENT TO IMPLEMENTATION

Every project starts with us – and stays with us. At CROSS Zlín, we design traffic technologies as long-term solutions, not as one-off deliveries. Thanks to our own research, development and production, we have full control over the quality, safety and future development of each system.



TURNKEY SOLUTION

We provide the entire project lifecycle – from analysis and design through engineering, manufacturing and implementation to service and long-term technical support. We are a technology partner who understands the operation of cities, roads and specific locations around the world.



CONNECTED TECHNOLOGIES, ONE FUNCTIONAL UNIT

Our portfolio includes intelligent traffic control, data detection and collection, weigh-in-motion, parking systems and road weather. We design individual technologies to communicate with each other and create an efficient and clearly managed traffic ecosystem.



SOFTWARE INTELLIGENCE AT THE CORE OF THE SOLUTION

We develop our own control and analytical platforms that give meaning to technologies and turn data into decisions. Open architecture and integration with higher-level systems enable easy connection to Smart City platforms and third-party systems.



COOPERATION WITHOUT BORDERS

We work closely with cities, infrastructure managers, designers and technology partners around the world on projects. With experience from different markets and legislative environments, we can design solutions that work locally – and stand up globally.



DESIGNED FOR THE FUTURE

We build each solution on an open architecture with an emphasis on reliability, cybersecurity, and easy scalability. Our systems are ready to respond to growing traffic loads, new legislative requirements, and the development of modern mobility.



A PARTNER YOU CAN RELY ON

Every project includes training, service and expert support. We help cities, infrastructure managers and traffic operators improve the safety, smoothness and sustainability of mobility – today and in the years to come.

WEIGH-IN-MOTION

An advanced Weigh-in-Motion system for weighing both fast and slow-moving vehicles using loop detectors, road sensors and a core WIM module. CROSS software provides online measurement with immediate validation and enforcement.

CrossWIM dynamic weighing unit with a facility for direct enforcement



TRAFFIC CONTROL

Complete systems and hardware for intelligent control of traffic in cities, including traffic light controllers and control centres for comprehensive monitoring purposes and adaptive traffic management.

CROSS RS 5 traffic light controller

CROSS RS 4S traffic light controller

eDaptiva* full-featured urban traffic management centre

eDita* maintenance and programming software

CrossLight traffic signal head



PARKING SYSTEMS

A complete parking solution for outdoor areas, urban zones, garages and car parks. Every device is integrated into a system that manages control and payments for both off-street and on-street parking.

CrossPark parking system with automatic barriers

CROSS APTM universal payment terminal

CROSS APTML payment terminal lite

CROSS PTi / VTi entry and exit terminals



ROAD WEATHER metis5.cz

A system for monitoring and predicting weather conditions on roads and in cities, expandable into a comprehensive solution with advanced options for intelligent winter road-maintenance management.

CrossMet road and urban meteorological stations

METIS advanced road weather information system

SSWM system to aid decision-making in road maintenance

Wmi performance of wintertime maintenance and cost analysis



DATA COLLECTION

State-of-the-art systems for vehicle classification and counting using inductive loops, cameras or radars. It can monitor traffic flow and calculate travel times.

CrossCount traffic counter and classification device

Travel Time module traffic detectors and unit for traffic flow monitoring and predicting travel times

CROSS ControlUnit universal unit for collecting and transferring telematic data



INVIPO invipo.com

Software for smart cities and intelligent transport systems. Invipo is data storage, management software and information portal in one. It integrates city and road technologies into a common user interface with smart tools.

CROSS ZLÍN

WE CONTROL THE WORLD IN MOTION

From the first idea to off-road operation – today, CROSS Zlín technologies help manage traffic in the most demanding conditions. We are a technology supplier and long-term partner for cities, state institutions and infrastructure operators. We design and implement solutions for urban and rural areas, for urban agglomerations, highway networks, mountain passes and roads in desert climates. Our systems operate where absolute reliability, respect for legislation and the ability to respond to the realities of traffic are required – in any weather and anywhere in the world.



ROAD WEATHER MONITORING ON CZECH ROADS



- **Czech Republic – all roads**
- **Number of devices: more than 650 roadside weather stations connected to the METIS system**
- **What we solved:** insufficient overview of current road conditions and winter maintenance efficiency
- **How:** national METIS system with connection to variable traffic signs and information boards, SSWM (road condition forecast) and WMi (winter maintenance cost and performance control)
- **Result:** safer roads, efficient planning and cost savings for winter maintenance, online supervision of more than 60,000 km of roads
- **Partner:** Directorate of Roads and Motorways of the Czech Republic and regional winter maintenance organisations



NATIONWIDE WIM NETWORK FOR HIGHWAY TRAFFIC



- **Hungary (highway sections)**
- **106 WIM systems**
- **What we solved:** uniform vehicle weight control across key highway sections
- **The result:** reliable data, infrastructure protection and effective supervision of overloaded vehicles
- **Scaling up solutions:** a network following projects in Romania
- **Partner:** ARH Informatikai Zrt.



ADAPTIVE TRAFFIC CONTROL FOR A SMART CITY



- **Porto, Portugal**
- **280+ adaptive controllers at city intersections**
- **What we solved:** smooth traffic flow and priority for public transport in a dynamic city
- **How:** central control eDaptiva + Invipo Smart City, V2X
- **Standards:** OCIT-0 v2.0, DIASER (full interoperability)
- **Result:** stable operation and a future-ready Smart City platform
- **Partner:** Soltráfego



CITY PARKING LOTS OSTRAVA – SMART PARKING



- **Ostrava, Czech Republic**
- **6 locations, 57 devices: entry/exit terminals, automatic barriers, LPR cameras, payment terminals and occupancy displays**
- **What we solved:** the need for ticketless and cashless parking with centralised supervision and greater comfort for residents and visitors
- **How:** Modern CrossPark parking system with LPR, QR/RFID and online payments via Parkum.cz, connected to the Ostrava Communications dispatch centre for 24/7 monitoring, supervision and statistics, supporting short- and long-term parking reservations.
- **Result:** efficient parking management, increased security, convenience and control over traffic and payments, modern parking services for the city
- **Partner:** Ostrava Communications Inc.



TRAFFIC DATA FOR THE HIGHWAY NETWORK



- **Bulgaria – motorways and first class roads**
- **200 units of CrossCount + LPR cameras**
- **What we solved:** lack of complete data on traffic and vehicle classification
- **How:** monitoring of intensities, travel times, average speed and classification according to the national standard 6+1
- **Result:** complete traffic statistics, better overview of traffic flow and support for traffic infrastructure planning
- **Partner:** Bulgarian Road Administration

TECHNOLOGIES THAT GIVE ORDER TO MOVEMENT

6000+

TRAFFIC CONTROLLERS PRODUCED

850+

CROSSCOUNT TRAFFIC COUNTERS

700+

WEATHER STATIONS INTEGRATED INTO THE METIS 5 SYSTEM

450+

WIM SYSTEMS IN OVER 40 COUNTRIES WORLDWIDE

250+

PARKING SYSTEMS DELIVERED

CENTRAL MONITORING AND CONTROL SYSTEM IN DENMARK

CENTRALISED SCADA SYSTEM

CROSS successfully implemented a modern centralised SCADA system for monitoring and controlling traffic lights in Denmark. The project was implemented for the Danish Road Directorate (DRD) and included the complete delivery of the software solution, its integration into the state IT infrastructure and subsequent operation in the SaaS model. The system is designed to reliably and long-term serve an extensive network of more than 350 traffic light controllers from various manufacturers (mainly Swarco and Stuhrenberg), making it one of the key elements of traffic management throughout the country.

The core of the delivered technology is the advanced SCADA solution eDaptiva, which provides a robust monitoring and control interface for traffic controllers. Users have both a map and list view of all intersections in real time, including immediate visualisation of fault conditions and operational events. The system also allows viewing historical data, signal plan behaviour and detailed information about detectors. The delivery includes support for full compatibility with the OCIT protocol, including the ability to record and distribute LISA+ signalling logic via the VD server.

A major advantage is the developed data analytics and advanced logging. eDaptiva provides comprehensive audit, system and interface logs that can be searched, filtered and exported to standard formats for further processing. Data from detectors, pedestrian buttons and other input-output devices comes to the system, which is then aggregated and visualised for detailed

technical analysis. Space-time diagrams are also available, which significantly facilitate the assessment of intersection coordination and support traffic engineering decisions.

The solution also includes tools for operational control – operators can run predefined commands, such as switching signal plans, restarting controllers or activating emergency states. The system supports the configuration of logical scenarios that are automatically triggered based on detection events, for example, during congestion or incidents.

The project consistently reflected the requirements for interoperability. SCADA supports full integration according to OCIT-O 3.0 and OCIT-C and communicates with a wide range of controller manufacturers. User identity is managed via the customer's Identity Provider, including Azure AD support. The interface is accessible from both computers and mobile devices and fully localised into English.

Connectivity with the state data platform is ensured via REST API. This allows sending priority requests and exporting dynamic and historical data to external analytical systems, opening up space for further optimisation of traffic.

The project was completed on time, met all technical and contractual requirements and significantly contributed to the digitalisation of traffic management in Denmark.

SELECTED

REFERENCES



More references



Arabian Peninsula

The densest WIM network in the region, 154 lanes, 25 stations.



Bratislava, Slovakia

6 modern barrier parking systems with a total of 76 devices.

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CONTINENTS



Reykjavik, Iceland

14 traffic light controllers with the traffic lights and detection systems were delivered to the capital city of Iceland.



Chennai, India

ITS Chennai – Adaptive traffic control for a smart city, 180 adaptive controllers at city intersections

75+

COUNTRIES



Stuttgart, Germany

Adaptive traffic control at the city



Czech Republic

Weigh-in-Motion for direct enforcement

1000+

SATISFIED CUSTOMERS



Porto, Portugal

Adaptive traffic control for a smart city, 280+ adaptive controllers at city intersections



Vilnius, Lithuania

Modern traffic management software eDaptiva with adaptive control, 290 controllers via the OCIT protocol and 210 new traffic light controllers over the next five years

350+

CONTROLLERS FROM VARIOUS MANUFACTURERS



Multi-vendor environment



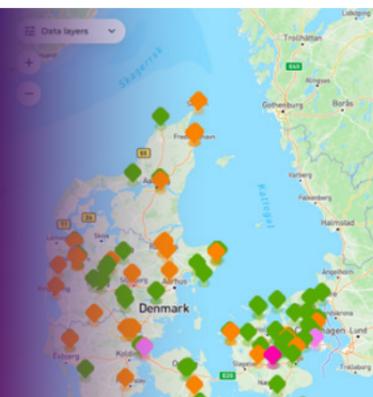
Nationwide control and monitoring system running in cloud (SaaS)



Communication via OCIT-O and OCIT-C



Interoperability with external Data Exchanger platform





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Co-funded by
the European Union