cross®

TRAFFIC CONTROL

EASING CITY TRAFFIC

TRAFFIC SYSTEMS FOR URBAN AREAS

TRAFFIC CONTROL

INDUCTIVE LOOP
DETECTOR

VIDEO DETECTION

PRIORITY GIVEN TO
PUBLIC TRANSPORT

TRAFFIC LIGHT
CONTROLLER
CROSS **RS 4**

TRAFFIC LIGHT
CONTROLLER
CROSS **RS 4S**

eDaptiva®

FLUENT, FAST & SAFE TRAFFIC

ADAPTIVE TRAFFIC CONTROL SOLUTIONS
FOR URBAN ENVIRONMENTS

TRAFFIC CONTROL

Unhindered travel throughout the city is the desire of every inhabitant. A pleasant, liberating urban environment is one free of gridlock, without unnecessary pollution from stationary vehicles, where traffic flows smoothly and noise is minimized.

Fluent, stress-free transport

Get the green light to freely flowing city traffic. No longer do cars and buses need to stop for red at every intersection, instead their movement is governed by a system capable of handling any situation.

Save money and time

Eliminating gridlock has numerous benefits. Residents spend their time more fruitfully, cars run efficiently, delivering goods is cheaper, public transport functions as it should and road repairs are reduced.

Reduced emissions, less noise and dust

Urban streets can be cleaner and quieter - it is simply a matter of keeping vehicles moving. As a result, engines rev less, cutting down on emissions from exhausts and reducing the dust in the air.

Live well in safe, pleasant cities

Accessibility, comfort and safety represent the hallmarks of an attractive city. Everyone is sure to appreciate an environment where commuting and going out are simple, quick and safe activities.

TRAFFIC LIGHT CONTROLLER

CROSS RS 4

The CROSS RS 4 is the fourth generation of our most powerful traffic light controller. Each type of controller we produce is able to work in a decentralized mode, in a "master-and-slave" configuration, and even with a direct connection to the urban traffic management centre with a full suport of traffic adaptive control.

- Maximum of 64 different signal groups
- Maximum of 288 signal head outputs; each can be individually monitored
- Maximum of 128 loop detectors
- Maximum of 248 external inputs
- Maximum of 111 push button units for pedestrians
- Maximum of 68 signal plan frameworks
- Application of up to 16 stages within every signal plan
- Priority given to emergency services across 13 preset routes
- Maximum of 6 all-red stages under manual control
- Interface via RS 232, Ethernet, USB, GSM, GPS or 3G; options for opto-isolated RS 232, RS 485 and DSL
- 4.3" LCD touch display

TRAFFIC LIGHT CONTROLLER

CROSS RS 4S

The CROSS RS 4S is a smaller and more compact version of the RS 4 traffic controller. It processes fewer inputs and is specially designed for quick and easy installation. It has the capacity to connect with various peripherals and plug-in modules.

- Maximum of 64 different signal groups
- Maximum of 192 signal head outputs
- Monitoring of each signal head output
- Maximum of 128 loop detectors
- Maximum of 200 external inputs
- Maximum of 72 push button units for pedestrians
- Maximum of 68 signal plan frameworks
- Application of up to 16 stages within every signal plan
- Priority given to emergency services across 13 preset routes
- Facilitates manual control of 6 all-red stages
- Interface via RS 232, Ethernet, USB, GSM, GPS, 3G; options for opto-isolated RS 232, RS 485 and DSL
- 4.3" LCD touch screen

CROSS Traffic Light Controllers - 4th generation

- Scheduling and control of fixed signal plans
- Scheduling and control of dynamic signal plans
- Traffic adaptive control
- Priority given to public transport
- Adheres with requirements of EN 50556, EN 12675
- Safety integrity level SIL3v

STANDARD ACCESSORIES

Detectors

- Pedestrian push button units
- Loop detectors
- Video detection systems
- Wireless magnetic detectors
- Radars

Signal Heads

- Power supply options of 230 V, 40 V and 10 V AC, or 24 V DC at 1 W
- Lamps: Incandescent bulbs or LEDs

Equipment for traffic priority*

- On-board units and additional vehicle devices
- Modems incorporated within controllers

** Typically for ambulances, fire engines, public transport, etc.*

LINKING TRAFFIC LIGHTS
TO INFRASTRUCTURE

C2X

CROSS traffic light controllers communicate and exchange information with infrastructure, facilitating maximum efficiency and security.

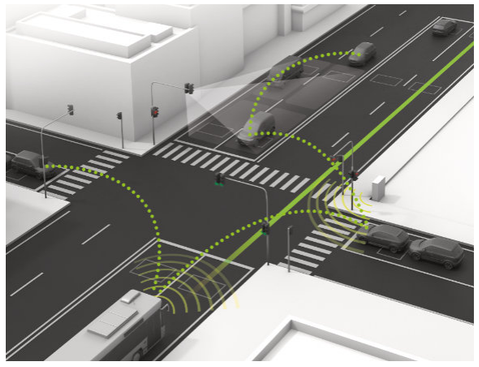
PRIORITY GIVEN TO PUBLIC TRANSPORT

CROSS systems enable the preferential treatment of public transport at intersections under traffic light control. Data is transferred between such vehicles and the traffic light controller, meaning they run more fluently but without restricting the flow of other automobiles. Our controllers handle signal plans in real time and assign preference as required, minimizing risk of delay at busy times.

- Assignment of priority for selected vehicles
- Settings for preferences in accordance with plans for local traffic hierarchies
- Minimizes delay for all vehicles at intersections
- Optimizes the coordination of public transport
- Preference only given to vehicles physically present on roads
- Creation of isolated branches given over to the passage of public transport
- Provision of additional traffic functions for public transport

ABSOLUTE PRIORITY FOR EMERGENCY VEHICLES

CROSS traffic light controllers are able to forcibly designate green lights in a given direction on command for ambulances and fire engines.



CROSS SOFTWARE

eDaptiva

This CROSS software package constitutes a comprehensive suite for configuring, remotely controlling and monitoring traffic controllers. It also supports traffic planning, the modelling of traffic situations, device supervision, traffic monitoring and adaptive control mechanisms.

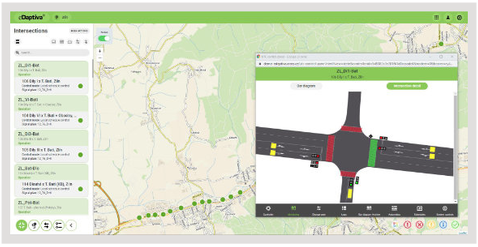
The system is based on our CROSS PTC (maintenance and programming software) and eDaptiva® products (a full-featured urban traffic management centre) that together comprise a mutually functioning platform. This solution is complemented by an add-on module – eDaptiva® mobile.

eDaptiva®

Mobile application

Web browser

Traffic engineering



KEY FEATURES

- Traffic engineering and programming of traffic light controllers
- Adaptive control and traffic flow optimization
- On-line monitoring, remote administration and maintenance
- Centralized management in all modes
- Optional interconnection between traffic light controllers and surrounding infrastructure C2X
- Traffic data collection and evaluation
- Connectivity via different protocols

eDaptiva® is an extensive urban traffic management centre. Designed to meet the various demands of small, medium and large urban areas, it permits observation, supervision and adaptive control. Basic system monitoring is made possible via the eDaptiva® thin client and it is fully integrated with Smart City platform Invipo.

C2X IN BRNO

COOPERATIVE TECHNOLOGIES IN ACTION

Gathering information on traffic and using it in conjunction with smart traffic lights and vehicle communication systems makes it possible to control traffic remotely. This means IRS vehicles can easily navigate city streets, public transport is prioritized at intersections and congestion is avoided. Moreover, drivers of vehicles fitted with such units benefit from warnings of queues, cars jumping red lights and slippery surfaces.

CROSS undertook two projects, one for the streets of Brno and another for a stretch of motorway.

"As far as I know, there is no place in Europe today where this technology is used on the same scale as it is in Brno," said Ivo Gajdošík, the Chief Project Officer.

Various regional and national state bodies cooperated to make it happen, all of them sharing in the data collected from the cooperative systems in operation. Therefore, it is possible to gauge the current state of roads, tunnels and traffic signalling points.

The data is collected from sources, such as roadside devices located at intersections and on-board units fitted to public service vehicles. In fact, these same units alert the driver in a timely manner about road maintenance, lane restrictions and other situations that may present a potential hazard.

The next step is to utilize the cooperative systems now being incorporated in some passenger cars. A test of adding these to the present infrastructure is planned, ultimately with a view to a future of fully autonomous vehicles.

TRAFFIC CONTROL WITH PRIORITY FOR PUBLIC TRANSPORT IN ZLÍN

CASE STUDY

This project by CROSS in Zlín was implemented to prioritize public transport on the city's roads. In total, 88 vehicles were fitted with on-board units, communication devices and multi-functional displays for their drivers. Meanwhile, 41 traffic controllers were equipped for two-way communication with the vehicles.

The system is fully operational and functions in the following manner. A traffic controller receives notification that a bus is coming or has pulled into a nearby stop. As a result, a green light is held for the vehicle and the driver is informed about it. This allows the driver the luxury of waiting longer at the stop in the knowledge that the lights will turn or stay green when the bus reaches them.

This has cut journey times by 20% on some routes, and timetables have been adjusted to take advantage of the situation.

20%

TRAVEL TIME SAVINGS

41

TRAFFIC CONTROLLERS

88

PUBLIC TRANSPORT ONBOARD UNITS

CROSS

TRAFFIC MANAGEMENT SOLUTIONS

CROSS has implemented traffic management solutions in countries across the globe. Tailored to suit the particular needs of a city, such a system includes tools to control individual intersections or automatically regulate traffic flow to match the given conditions. Routes are freed up to allow emergency vehicles to pass unhindered, and prioritizing public transport becomes an option.

REFERENCES

Other references

Aarhus, Denmark

Traffic management system

Izmir, Turkey

Fully equipped traffic control centre

Muscat, Oman

Decentralized traffic control

Zlín, Czech Republic

Traffic management system with priority for public transport

Žilina, Slovakia

Traffic management system with priority for public transport

Sofia, Bulgaria

Traffic management system with priority for public transport and emergency vehicles

St. Petersburg, Russia

Traffic management system

Niterói, Brazil

Traffic management system

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