ISSD™
INTEGRATED SYSTEMS & SYSTEMS DESIGN

CHAOS™
Dynamic Junction
Control System

CHAOS™

Dynamic Junction Control System

CHAOS™ reduces delays and emissions at the signalized junctions by changing green times dynamically regarding the number of vehicles on each approach. CHAOS™ systems can communicate with each other via wireless connection modules for signal coordination and network optimization.

CHAOS™ consists of traffic cameras, which detect, count and track vehicles in real time, a fisheye camera for observation purposes and the Dynamic Junction Control Unit, CENTRIS. Traffic cameras are located at each approach, and each of them consists of a digital camera, an image processing board and a wireless communication module, which is for transmitting data to CENTRIS and the Traffic Control Center.

The results of more than 700 CHAOS™ installations worldwide show that, the junctions with CHAOS™ experienced a decrease of 30% of waiting time and more than a third in traffic accidents.
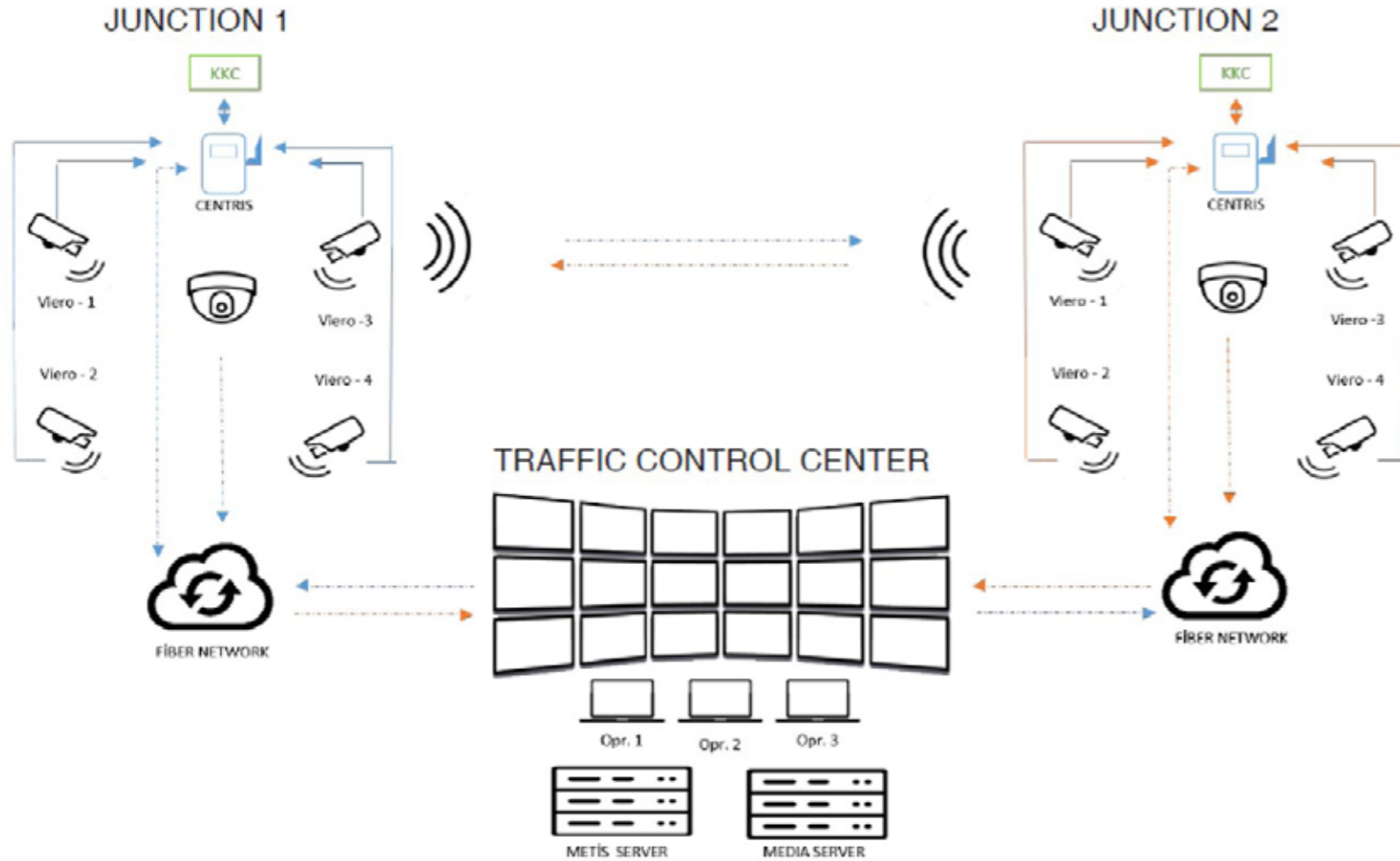
- Less congestion at junctions and the road segments between the junctions
- Minimized waiting times at junctions and total time spent in traffic
- Less environmental pollution by reducing emissions and noise pollution
- Contribute to the country's economy with less fuel consumption
- Decrease on red light violations and traffic accidents thanks to the optimized green times produced by the system

100% ISSD™ Product

30% decrease in delays

Available
at 700 locations

A decrease of 1/3 in traffic accidents
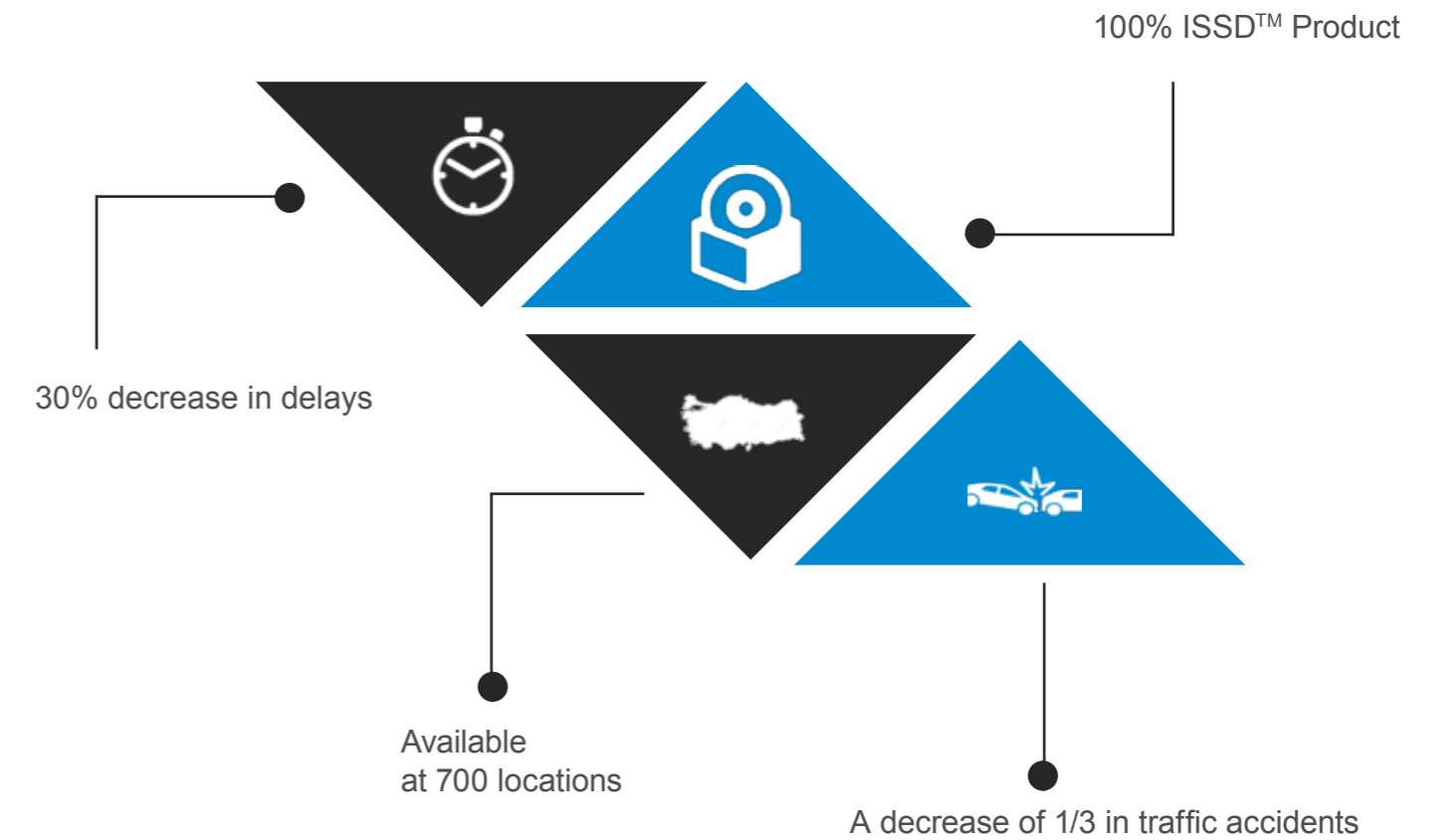
The first and patented Dynamic Junction Control System in Turkey

METIS

Traffic Control Center Software

Traffic data is sent to the Traffic Control Center Software, METIS, where it can be monitored, controlled, and processed. METIS operators can control the traffic from the Traffic Control Center, and can monitor and control the junctions for the most efficient, wise, and fast traffic flow. They also can intervene in case of a calamity, e.g. traffic accidents, lane closures.

CENTRIS

Dynamic Junction Control Unit

CENTRIS is a multi-functional control unit, which is used for junction management, signal optimization and the remote control of any traffic sensor/device including the detection of failures. Its high-speed processor allows to analyze collected data from various sensors in real time, and run the customized algorithms inside.

VIERO™

Vehicle Counting System

VIERO™ is capable of counting vehicles passing through a road section under all weather conditions. VIERO™ can provide occupancy, average vehicle speed, vehicle counts and classification data in real time. The collected data can be transferred to a remote control center via wireless/wired connection.

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Traffic Control Center Software, METIS

Traffic Control Center Software METIS, as a part of CHAOS™ System is a completely web based control center software which is based on digital maps. METIS can control and communicate with the junctions in real time according to the international communication standards and keep on the communication for 7/24. It has the capability of statistical analyses according to live and historical traffic data.

The Capabilities of METIS:
• Remote junction monitoring and control
• Active traffic management
• Remote control of Variable Message Signs
• Dynamic incident management
• Traffic density map
• Short-term and long-term traffic forecasting
• Sensor management (traffic cameras, CO2, temperature, pressure sensors etc.)
• Average travel time results based on BLUESIS™
• Multiple junction monitoring and control
• Automated signal coordination based on real-time data
• Statistical analysis for past 5 years
• Critical error log analysis
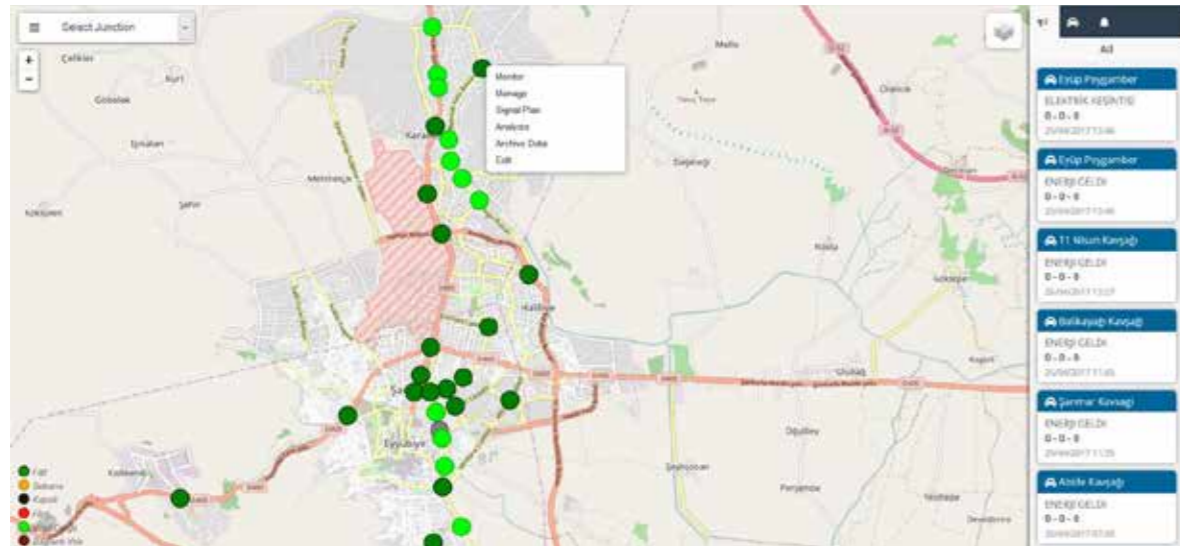
Signal Coordination with CHAOS™

CHAOS™ systems can communicate with each other via wireless connection. This property can be used for signal coordination between consecutive junctions. The main purpose of signal coordination is to reduce travel times along a corridor by coordinating the junctions. This application is generally known as "green wave" and used to reduce corridor travel time, delays and traffic congestion at the junctions on a corridor. It is also possible to manage the junctions in both coordinated and actuated mode, which makes vehicles either not waiting in the red light or waiting for a very short time.

Emergency Vehicle Preemption System

With CHAOS™, it is possible to give priority to emergency vehicles coming from any approach of the junction. Emergency vehicles which are defined in Traffic Control Center software are detected and tracked by using GPS data. CHAOS™ calculates the best scenario to minimize emergency vehicle delays. Vehicle preemption algorithm runs to minimize the conflicts and prevent possible accidents at the junctions.

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