

trafficsdesign



# Traffic design

***With its turnkey solutions, Traffic Design provides the right answers to questions on how to manage traffic today, tomorrow or in the future.***

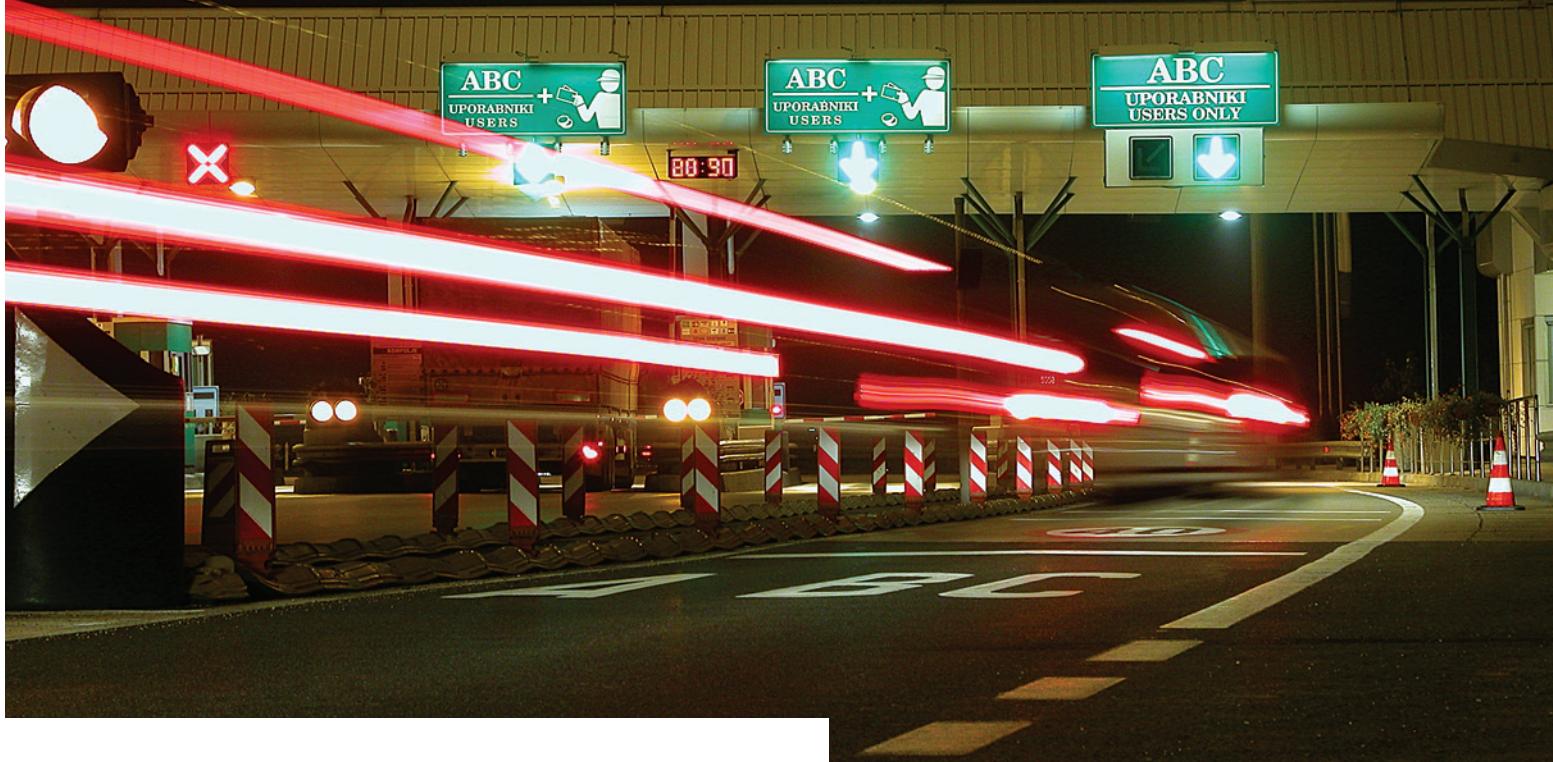
The company Traffic Design was established in 1990. Our business has always been in the development, integration and implementation of intelligent transport systems (ITS) in road traffic, and has thus remained faithful to the fundamental strategy of our founder.

Solutions and systems in the field of electronic road tolling, integrated solutions in the field of parking technologies, and state-of-the-art solutions for traffic control and management systems on motorways and in tunnels have denoted Traffic Design as one of the leading companies in these fields in Slovenia and abroad.

Traffic Design relies on its own innovative development and the use of the most advanced technologies in the fields of telecommunications and information technology, both supported with solutions from traffic engineering, which represent the basis for the successful operation of intelligent transport systems (ITS).

In accordance with our strategy and goals, Traffic Design continues its research and development of ITS systems in implementing 'smart roads' or the development of a complex model for optimising traffic flows with the aid of telematics or other suitable technology.

Mobility and transportation are at the centre of a modern and high-quality lifestyle, and they have a dramatic impact on changes in the world today.



## Toll systems – from dreams to reality

The system has been designed to enable easy, fast and comfortable toll payments for all motorway users, whereby minimal maintenance costs ensure long-term reliable operation.

***The toll system which Traffic Design as a system integrator has been developing and upgrading with its partners since 1994 is one of the most complex systems in Europe.***

On various toll lanes, the system enables manual (electronic cash registers) and automatic payment of tolls with the DSRC microwave system and contactless chip cards. A network of toll station servers is connected to a complex central system which enables the entire toll calculation, enforcement, transmission of data to the accounting system, issue of invoices, analysis, reporting and communication with the servers of individual card issuers (VISA, Eurocard/Mastercard, Diners, AMEX, DKV, UTA, Shell, OMV, MAGNA, ACTIVA, Activa Maestro, Ressa, Total, etc.).

Up to 2008, the system had been used successfully at 27 toll stations by more than 350,000 users of electronic media (ABC tags, chip cards) and annually registered several million transactions on all lanes. Following the introduction of vignettes for passenger cars in Slovenia, in 2008 the system was adjusted for the collection of tolls for haulage vehicles and has since been regularly maintained and upgraded.

The last major upgrading of the system was at the beginning of 2010 with the introduction of EURO emission classes for haulage vehicles.

In 2008, Traffic Design equipped the first toll station at Jošanica near Sarajevo, Bosnia and Herzegovina, where the system enables manual and automatic tolling with contactless chip cards and a microware system operating at a standard frequency of 5.8 GHz.

There is also the option of prepayment via the Internet; thus, upon driving through any toll station on a combined lane for the first time, the process of uploading the paid amount to the electronic tag is initiated - at speeds up to 80 km/h.

Traffic Design technologically adjusts the toll system according to the guidelines in European directives and standards. On the basis of many years' experience in the field, we are well aware that such delicate systems do not cope well with rapid and frequent changes. Therefore, new technologies should be introduced gradually, as 'evolutionary' and not 'revolutionary', because they cause numerous sensitive changes to operators and road users.

On the basis of our experience, we believe that the progressive development of systems is a logical upgrade of the ABC system with the DSRC microwave technology in free traffic flow, i.e. in compliance with EU standards, as an interim stage of the implementation of the GPS/GALILEO/GSM technology.



# smart road

## Traffic control and management systems – smart roads

With the introduction of traffic control and management systems on Slovenian roads, Traffic Design opened a new chapter in the development and offer of modern ITS (intelligent transport system) systems in road traffic.

Traffic management with TCMS enables drivers safer, faster and more comfortable travel. The analysis of traffic and weather data and identification in real time of unusual events, such as traffic accidents, road-works, etc. enable comprehensive control and immediate response.

Various information is transferred directly to graphic displays of changeable traffic signalisation of LED technology, and is also possible via other media: the Internet with an interactive map of the controlled area, auto navigational systems, RDS-TMC and other address systems.

Traffic Design has combined information and its transfer with other control and management systems, e.g. systems in tunnels, systems of traffic and weather stations and similar, which enable comprehensive and uniform traffic management on 'smart roads'.

***In road traffic, intelligent systems comprise a comprehensive concept of surveillance, management and traffic control on a 'smart road'.***

The programme equipment in control centres enables the inclusion and processing of data in real time. The SCADA user interface designed on open-code Internet technology enables a simple and reliable system management.

# Parking systems

**Manual and mechanical parking systems have been replaced with more advanced and complex parking systems which, in addition to the marketing of parking surfaces, also enable complete integration with other advanced technologies of the modern information society.**

Traffic in cities is constantly increasing. Due to the growth in traffic particularly in urban areas, there is an increasing need for areas with stationary traffic. Parking surfaces have to be arranged as evenly and reasonably as possible, due to the need for the rational use of space in cities.

A clear vision and a team of experts as the key to the provision of innovative parking systems and services have positioned Traffic Design as a leading high-quality provider of automatic parking systems in Slovenia. Traffic Design has the highest number of implemented automatic closed parking systems in Slovenia. Our strength lies in the successful implementation of new parking systems in cooperation with the requests and needs of individual clients.

Traffic Design offers parking systems for managing parking spaces in car parks and parking garages, the development and implementation of control centres and parking system management, systems for informing participants in traffic on the availability of parking spaces, project engineering and planning of parking systems, the supply and installation of parking systems, and maintenance and management of parking systems.

In general, a parking system consists of entry and exit terminals, where a user enters or exits the parking area, gates which prevent uncontrolled access, an automatic cash register for payment, and the central section of the system, which records all transactions and data on parking and enables statistical operations and reports. Other systems, such as for automatically license plate recognition that enables access of known users, the contactless card system and many more, can also be implemented, depending on the requests and needs of clients.

