

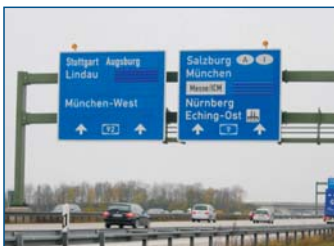
Short Company Profile

Business Domain: Road Traffic Engineering



SSP Consult, Beratende Ingenieure GmbH

Your Partner for
Transport Infrastructure Planning and Road Traffic Engineering



Business Domains of the Company

In the field of planning, construction and operation of transport systems SSP Consult, Beratende Ingenieure GmbH distinguishes between the two business domains:

- road traffic engineering and
- transport infrastructure planning.

Road traffic engineering is primarily concerned with the flow of traffic. The spectrum of activities covers the general conception of technical systems up to the professional support of projects in the implementation phase. The organisation and operation of traffic control systems extend both to applications within and outside of agglomerations. The field of information technology in transport is enclosed here as regards the conception, provision and maintenance of software as well as the design of system architectures.

The *transport infrastructure planning* division covers the whole range from transport planning concepts to complement the infrastructure up to the execution of projects. A sustainable urban and regional coordination of the tasks of the means of transport, an optimised combination of the transport systems and, finally, an adequate organisation regarding construction, operation and management are in the focus of the planning process.

Both business domains are closely related to each other and must be harmonised with the requirements of sustainability, environmental compatibility, economic efficiency, traffic safety as well as the constantly changing socio-economic basic conditions. Due to this complex interaction it is important to consider and develop transport projects in an integrated way. The two activity fields of *traffic management* and *transport research* function as an integrating element to bring both business domains together.

Independent Consulting Services

SSP Consult, Beratende Ingenieure GmbH is an individual engineering office providing consulting services independently of the interests of manufacturers of project-specific system components. Our company is not a manufacturer of transport planning systems or technical control components. Thus a neutral consultation is guaranteed for the client, which concentrates exclusively on the interests of the client.

Business Domain: Road Traffic Engineering

The service range of SSP Consult, Beratende Ingenieure GmbH covers the three main fields of activity within the road traffic engineering domain:

- urban traffic control,
- inter-urban traffic control and
- information technology.

Urban traffic control covers planning as well as support during the implementation of light signal systems, parking and traffic guidance systems as well as of components for public transport. In *inter-urban traffic control* planning and professional support during the implementation of systems for traffic and net control are provided. *Information technology* covers the software parts of the traffic engineering projects.

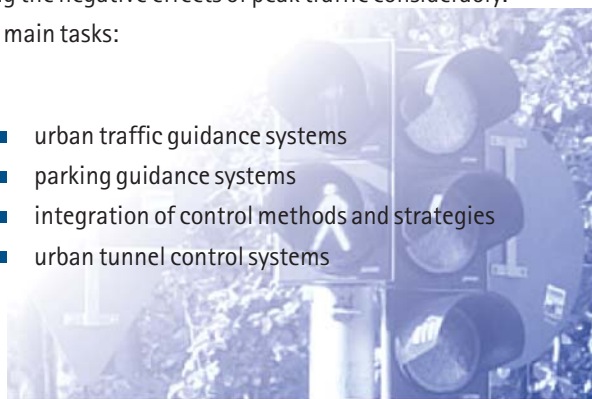
Activities in Road Traffic Engineering

Urban Traffic Control

Urban traffic control with SSP Consult, Beratende Ingenieure GmbH covers all necessary planning tasks as well as supporting services during the implementation of measures in urban areas. Of exceptional importance is the project planning of signalised junctions and their special conditions due to local public transport vehicles as well as non-motorised traffic. The complexity of the signal control is considered in terms of traffic-actuated control as well as in terms of net-wide traffic-adaptive control procedures. This involves also the requirements for connecting the light signal systems to the control centre, i.e. apart from coordinating the signal control, primarily also the regular functional testing of the operational systems and any possibilities for signal modification. SSP Consult, Beratende Ingenieure GmbH is among others intensively involved in the standardisation process of open communication interfaces and system architectures - also on the international level. Apart from the classical questions of the control system, systems for traffic guidance and management are planned and supported during the implementation phase as well. Traffic management systems, in particular for event traffic, and parking guidance systems can substantially contribute to reducing the negative effects of peak traffic considerably.

SSP Consult, Beratende Ingenieure GmbH works on the following main tasks:

- traffic signalling and control
- public transport priority schemes
- automatic incident detection
- capacity analyses
- traffic flow simulation
- dynamic lane allocation
- urban traffic guidance systems
- parking guidance systems
- integration of control methods and strategies
- urban tunnel control systems



Inter-urban Traffic Control

In inter-urban traffic control, SSP Consult, Beratende Ingenieure GmbH carries out all tasks in the context of dynamic traffic control. This involves frequently integration with urban systems in the framework of large-scale traffic management systems. The planning services include the whole infrastructure required for data communication and power supply. Based on the detected traffic volume, the components of traffic control contribute to improving the traffic safety and quality of traffic flow, because by adjusting dynamic defaults it is possible to optimally use the traffic infrastructure in times of high or unusual traffic volumes. Control centres based on automated control methods are therefore gaining in importance to interpret the traffic situation and to take measures for traffic control. SSP Consult, Beratende Ingenieure GmbH puts special focus on the specific parametrisation by adjusting it to the local traffic conditions. Ever greater importance is attached to the systematic combination of independently working systems for controlling traffic to net-wide operating systems by means of the information technology, which is also covered by SSP Consult, Beratende Ingenieure GmbH.

In inter-urban traffic control SSP Consult, Beratende Ingenieure GmbH works on the following tasks:

- line control systems
- variable message systems
- intersection control systems
- ramp metering
- integration of control models and strategies
- toll systems
- inter-urban tunnel control systems
- temporary usage of hard shoulders
- quality management systems



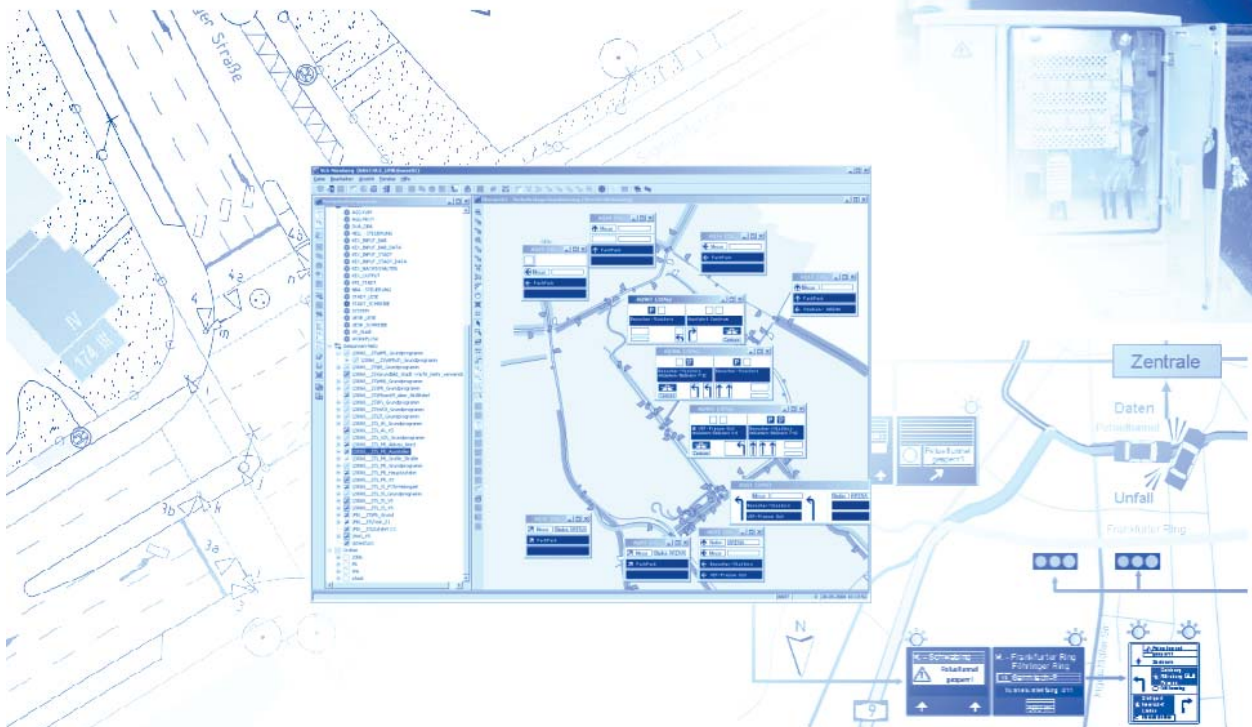
Activities in Road Traffic Engineering

Information Technology

In information technology SSP Consult, Beratende Ingenieure GmbH covers in particular the tasks of planning and implementing control centres and control algorithms as well as supporting services to launch the system operation. Besides the information technology questions that are primarily relevant for the development and implementation of control models and algorithms, the support of the software development is of increasing importance. Due to the increasing data volume and system complexity of traffic control systems, tailored software modules are needed in order to ensure a high availability and absolute performance to carry out traffic management tasks. To this aim the systems are arranged into software units in the planning process, based on defined requirements. The functions to be provided by the systems are planned in logical and physical regard and are afterwards supported in their realization phase by SSP Consult, Beratende Ingenieure GmbH. Essential here is the permanent support of operating systems to optimise their efficiency.

The tasks of SSP Consult, Beratende Ingenieure GmbH in the area of information technology comprise:

- conception of traffic management systems
- planning and support of construction of traffic control centres and sub centres
- parametrisation of technical installations
- support of IT software developments
- development of IT system architectures
- positioning and navigation systems
- geographic information systems (GIS)



Activities in both Business Domains

Traffic Management

Traffic management is part of both business domains and can be arranged into three large topic areas, which have to be handled in detail in each case in the context of the actual local framework conditions. The strategic area encloses the advancement, integration and coordination or combination of technical systems as components of transport telematics. It contains the conception of strategic networks and the organisation of traffic as well. As regards information technology, topics like data exchange and data contents in heterogeneous nets, communication protocols, interfaces, logical and physical system architectures as well as security concepts are dealt with. In addition, the conception and development of the required system architecture take place in the area of conflicting administrative scopes of competence as well as in the process of coordination between private and public interests. Combining the experience from the above topic areas allows SSP Consult, Beratende Ingenieure GmbH to achieve optimum results in concrete projects, as for example, the updating of existing individual systems or the bundling of single systems into one complex overall approach.

SSP Consult, Beratende Ingenieure GmbH has worked successfully on corresponding projects in the following areas:

- conception and coordination of traffic management systems
- concepts for public parking
- concepts for event traffic
- information systems for public transport, private vehicle traffic and parking traffic
- multimodal information services
- intermodal system network
- mobility management
- operating concepts

Transport Research

The field of transport research completes both business domains by national and European research projects. SSP Consult, Beratende Ingenieure GmbH has been involved in a number of research and development projects, e.g. regarding the introduction of new technologies for data collection like Floating Car Data or Floating Phone Data as well as digital image processing including geostationary and air-borne object recognition. In the field of traffic control SSP Consult, Beratende Ingenieure GmbH intensely works on the development of control methods in signalised road nets to flexibly influence the traffic situation by signal control at low detection efforts. New methods for data preparation are developed on the basis of GIS applications and prepared for their use in practice in transport planning.

The research projects of SSP Consult, Beratende Ingenieure GmbH can be allocated to the following areas:

- sustainable transport planning
- mobility concepts
- fusion of traffic data
- control methods
- technology concepts
- integration of environmental issues
- safety research
- transport telematics
- traffic data from FCD and FPD
- air- and satellite-borne data collection
- ITS-architectures and standardisation of open communication interfaces
- optically-based traffic analysis

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Further Information

A comprehensive survey of our scope of activities as well as selected project descriptions and references can be found on our Internet site: www.ssp-consult.de

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