**PROJECT**

**Mobility pricing: aspects of traffic engineering (VSS2005/916)**

**Verkehrstechnische Aspekte des Mobility Pricing**

**Funding:** National (Switzerland)

**Duration:** Oct 2005 - Dec 2008

**Status:** Complete with results

**Objectives:**

The research project shall develop support tools for decision makers in the field of Mobility Pricing, which focus on traffic engineering and safety impacts evoked by different systems. Thus, possible options can easily be compared with each other taking different boundary conditions into account.

Furthermore, the basic knowledge for the useful implementation of systems for Road Pricing is developed with special attention to traffic engineering aspects and the integration into comprehensive traffic management concepts.

The role of driver information and signalisation at toll collection facilities, for dynamic tolls (i.e. time or traffic dependant tolls) in particular, and possible changes of or amendments to the Swiss Signalisationsverordnung are part of the investigation. The state-of-the-art of Road Pricing systems and probable future developments can be considered in the project.

**Parent Programmes:**

Mobility Pricing

**Institute type:** Public institution

**Institute name:** Swiss Federal Roads Office (FEDRO / ASTRA / OFROU)

**Funding type:** Public (national/regional/local)

**Partners:**

Switzerland, Germany:

Swiss Federal Roads Office

Technische Universität Darmstadt; Fachgebiet Verkehrsplanung und Verkehrstechnik

Organisation: Verkehrstechnik

**Address:** Petersenstrasse 30

**Zipcode:** 64287

**City:** Darmstadt

**Contact country:** Germany

**Telephone:** (+49) 6151 16-2025

**Fax Number:** (+49) 6151 16-4625

**Key Results:**

Here are the crucial results:

**Toll Plazas**

The required space for toll plazas depends significantly on the systems used and the respective user share. Depending on the configuration and organisation capacities of 200-500 veh/h for cash payment, 300-600 veh/h for card transaction, and up to 1,800 veh/h for ETC can be realised. Developed diagrams
facilitate the estimation of the number of lanes required subject to the systems used.

Value Pricing

An analysis of Value Pricing considering travel times and capacities reveals that only in rare exceptions advantages can be expected. Regarding travel time and capacity as a random variable a three lane highway section has been compared to a two lane section with additional Value Lane. The results depend greatly on the input data (fundamental diagrams in the first place).

Use of On-Board Units

To enable the deployment of ETC, on board equipment has to be provided to the vehicles of the users. Only by using RFID (Radio Frequency Identification) and providing sufficient infrastructure and personnel this seems to be possible at the national border. The problems are highlighted by rough calculations for the border crossing at Basel/Weil.

Parking Facilities

Parking is covered in the Swiss and German standards and recommendations. The report summarises the gist.

Documents:

MP C3 (Final report)

STRIA Roadmaps: Network and traffic management systems

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Digitalisation, Societal/Economic issues

Geo-spatial type: Other