

ETC-based ITS Applications.

Implementing value-adding ITS applications on basis of Kapsch ETC systems.
UNECE Meeting Ankara; March 2012



Facing the problem

- **Current situation in the EU Transport sector:**
- Transport growth for the period 2000 – 2020:
 - Freight transport + 50%
 - Passenger transport + 35% \equiv 1,5% p.a.
 - Private cars + 36%
 - Environmental cost is estimated 1.1% of GDP
 - Road congestion cost estimated 1% of GDP



Road Fatalities in the European Union

- About 40,000 people are killed in road traffic accidents every year
- About 1,700,000 injuries every year on the roads in the EU
- The direct and indirect costs are estimated at 160bn EUR
- Target of 50% reduction by 2010 to be achieved only in 2017
- Slowest progress in Central and Eastern European Countries



Growing demand for ITS

- **Intelligent use of existing capacity and infrastructure:**
 - to create a secure and safe transport system by gathering and sharing real-time information
 - to reduce the number and severity of accidents
 - to plan and build safer vehicles and roads
 - to reduce congestion
 - to improve traffic fluidity
 - to improve traffic management as well as demand management
 - to increase comfort for road users
 - to promote co-modality

ETC-based Telematics

Trend:

- Re-use of existing tolling infrastructure as basis for other traffic telematics solutions
- Electronic toll systems will become the “backbone” for a broad spectrum of traffic telematics solutions
- Increasing penetration rate of ITS solutions over the next 5 to 15 years

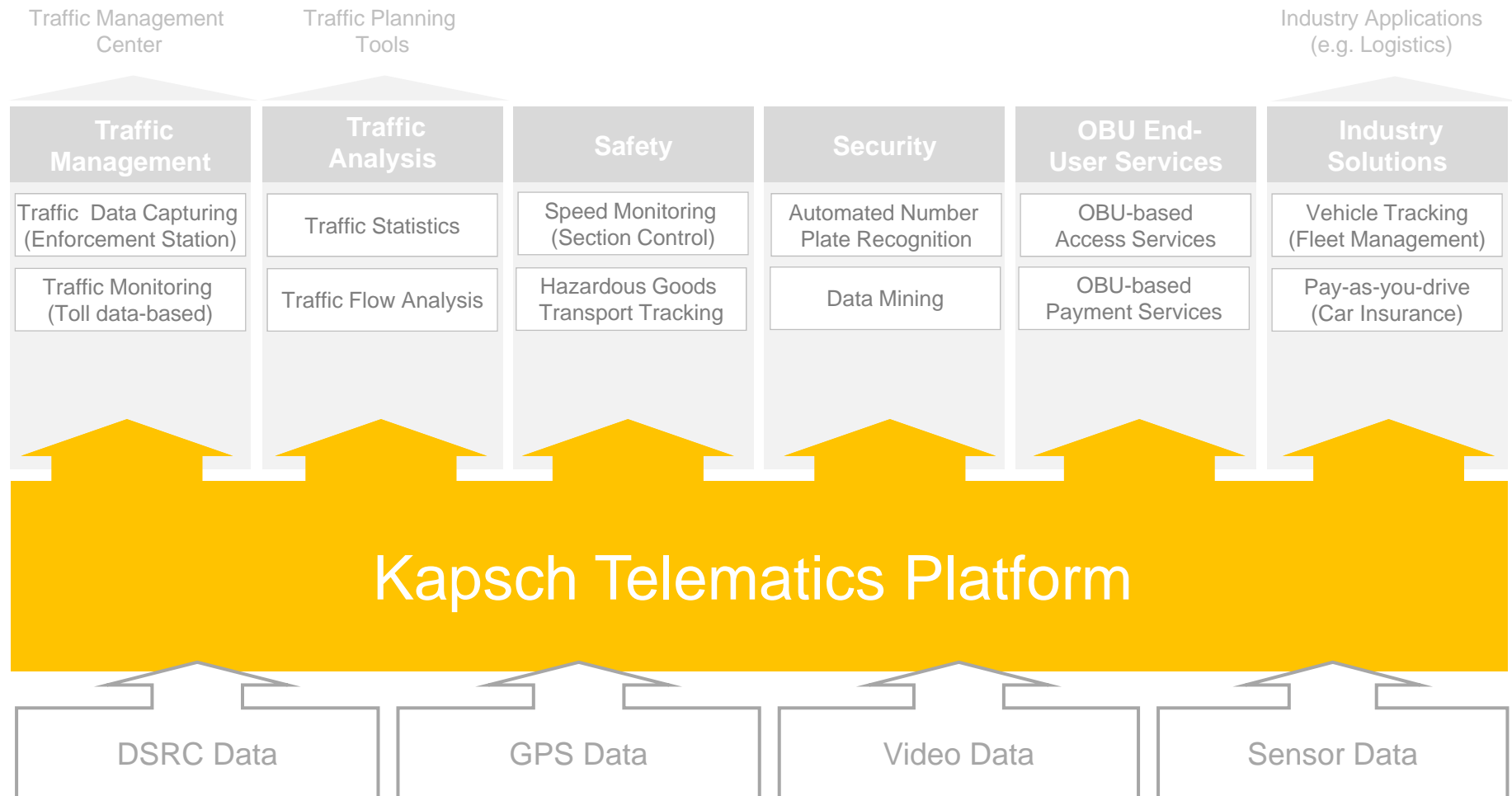
Main drivers:

- Cost reduction (re-use of ETC infrastructure)
- Better data (traffic management & planning)
- Increased safety & security
- Better service for road users (acceptance for toll)
- Additional revenues (concessionaires, EETS service providers)

ETC-based ITS: Fields of Application



Kapsch Telematics Platform with possible applications



Traffic Data Capturing with Enforcement Stations

Features:

- Capturing of traffic data for all vehicles using the laser scanners of the ES
- Optional extension of ES

Fields of application:

- Short-term data: Traffic management/monitoring
- Long-term data: Traffic statistics

Interface to KTP

- Possible forwarding of data to external systems like traffic management centers

Benefit

- Cost effective generation of traffic data



Laser Scanner

3D vehicle detection and classification based on the 2D-shape and speed of a vehicle



Reference Project: Road network wide traffic data capturing ASFINAG

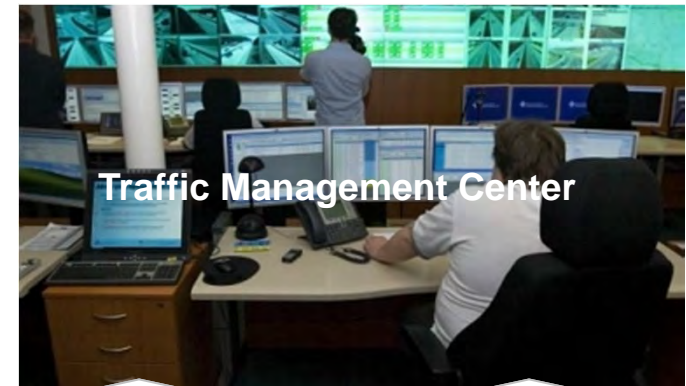
- Extension of 102 enforcement stations with an application allowing to capture traffic data using the laser scanners of the station
- Implementation of 160+ tolling stations with 3rd-party traffic sensors
- Transfer of the data to the traffic management center VMIS in Inzersdorf (TLS-based)



A|S|F|i|N|A|G

Reference Project: Traffic monitoring on CZ highways

- Calculation of travel times and level of service based on toll data for all sections of the tolled road network in CZ
- Capturing of short-term and long-term traffic data using the laser scanner of the enforcement stations
- Provisioning of the data to the national traffic management center in Ostrava via XML web services

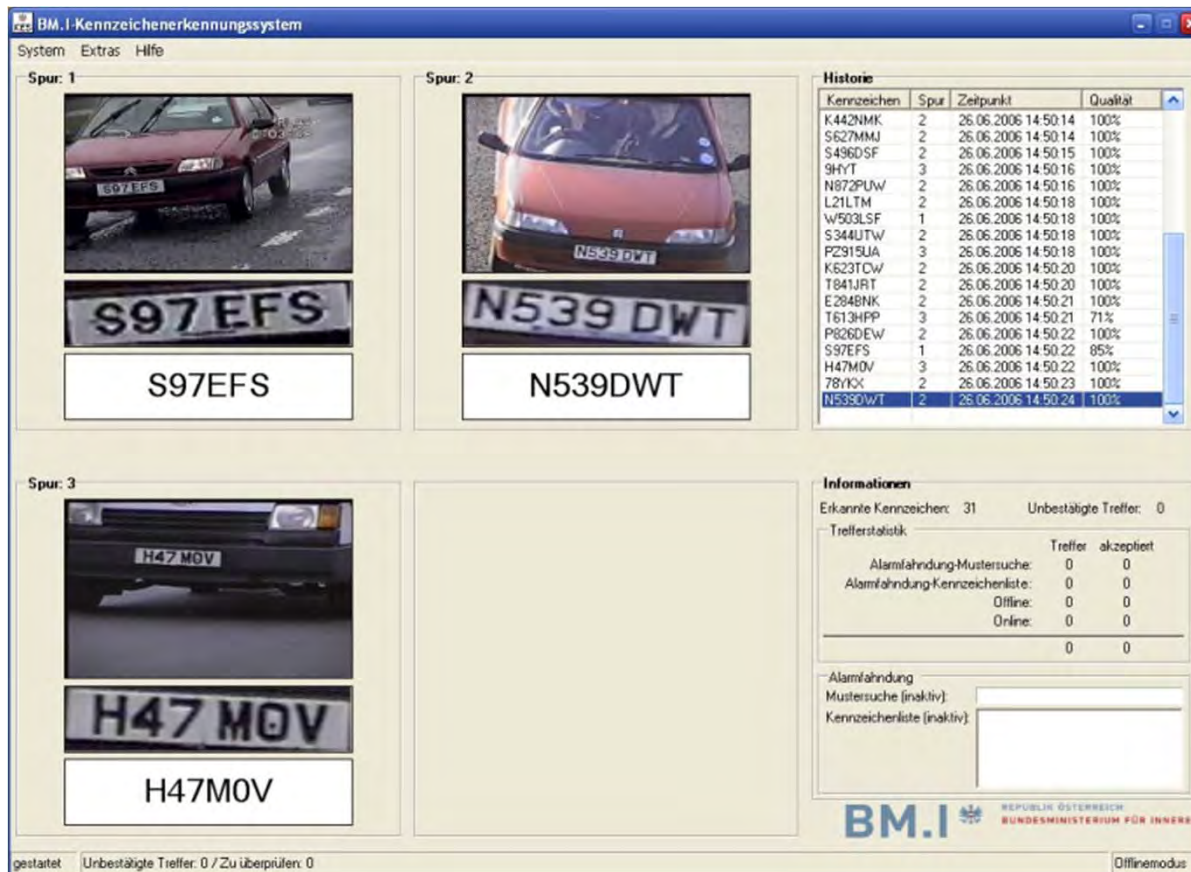


Telematics Platform

Tolling System



Automated Number Plate Recognition



Features:

- ANPR checks of all vehicles passing an enforcement station
- Work places for handling alarm messages (dispatching of police forces)

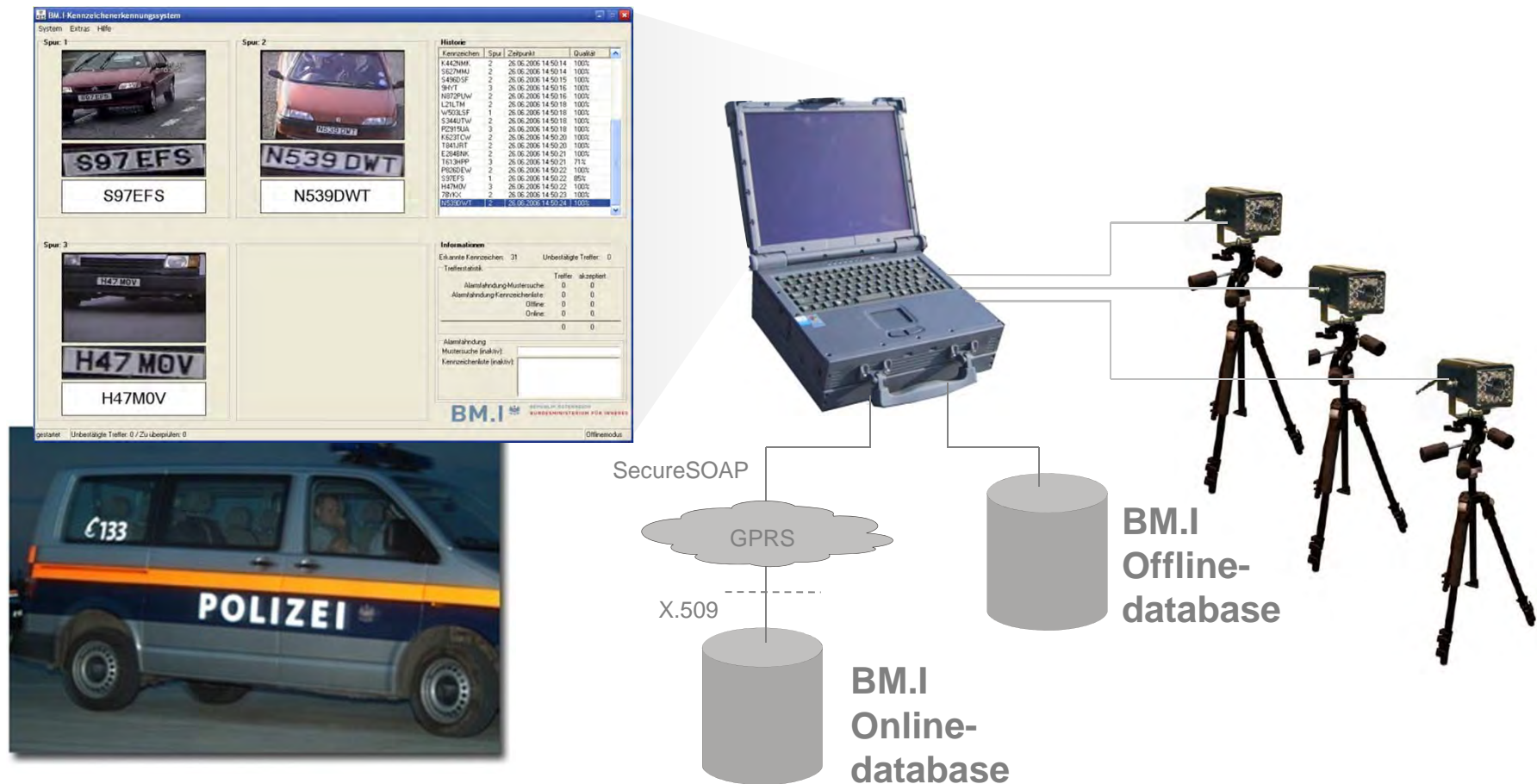
Fields of application:

- Search for stolen vehicles
- Search for other suspicious vehicles

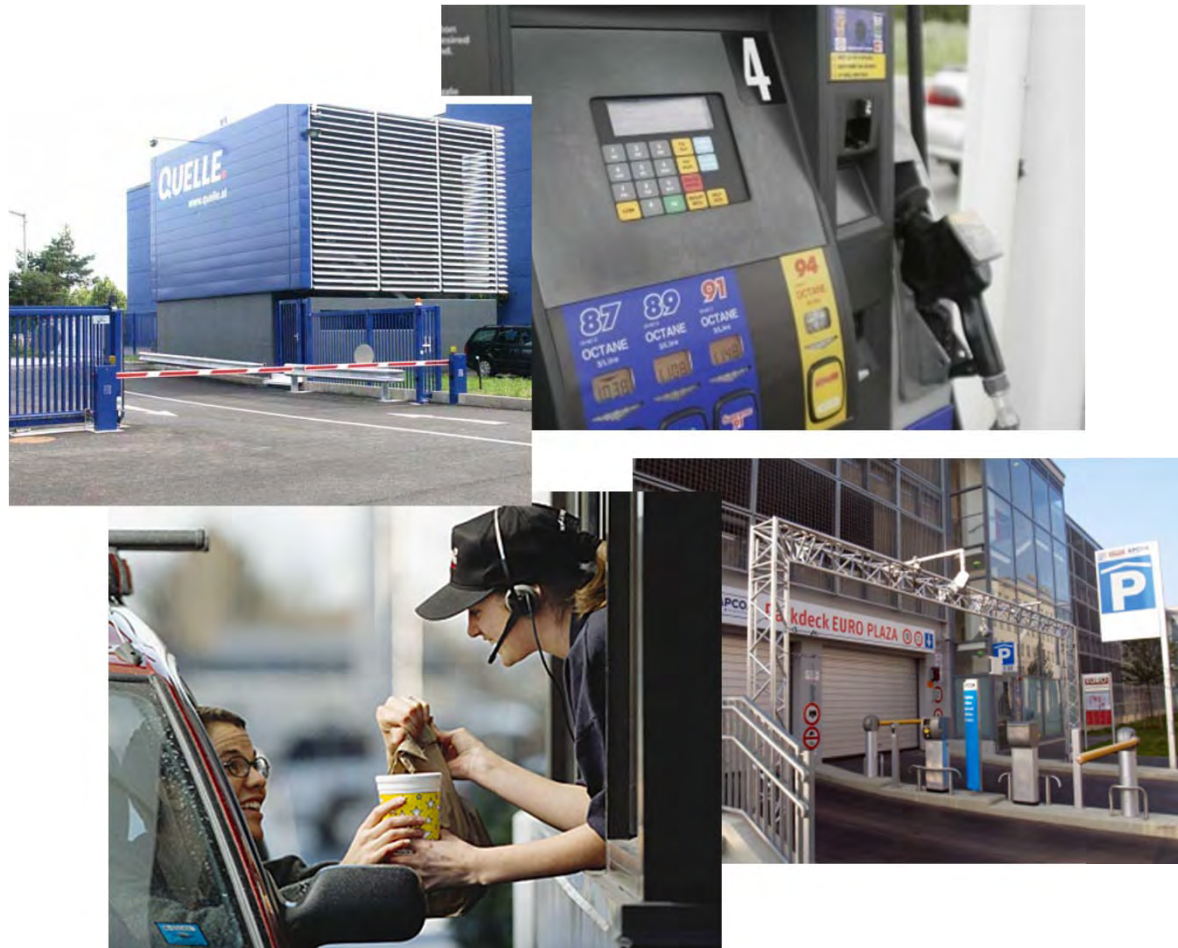
Benefits:

- Improved security
- Tracking & monitoring of special transports
- Managing incidents

Reference Project: Mobile ANPR for the Austrian Police



OBU-based Access & Payment



Features:

- Utilization of Onboard Units as access keys and means for cashless payment

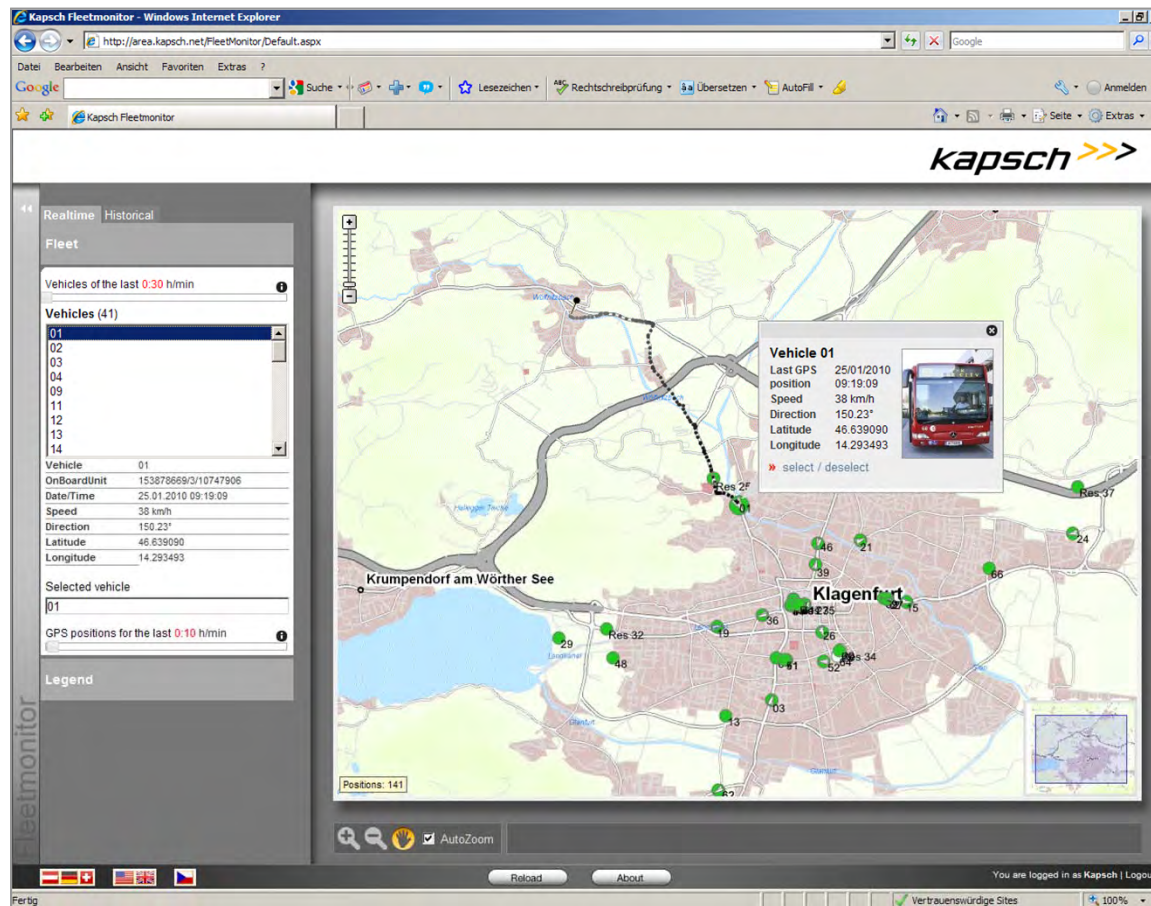
Fields of application:

- Parking facilities
- Factory gates
- Petrol stations
- Drive through

Benefits:

- Improved convenience for the driver
- Possibility to increase the OBU penetration rate (decreasing costs in case of manual tolling plazas)

Fleet Monitoring



Features:

- Real-time tracking of vehicles
- Reporting (e.g. log book)
- Dispatching functions (e.g. arrival time calculation)

Fields of application:

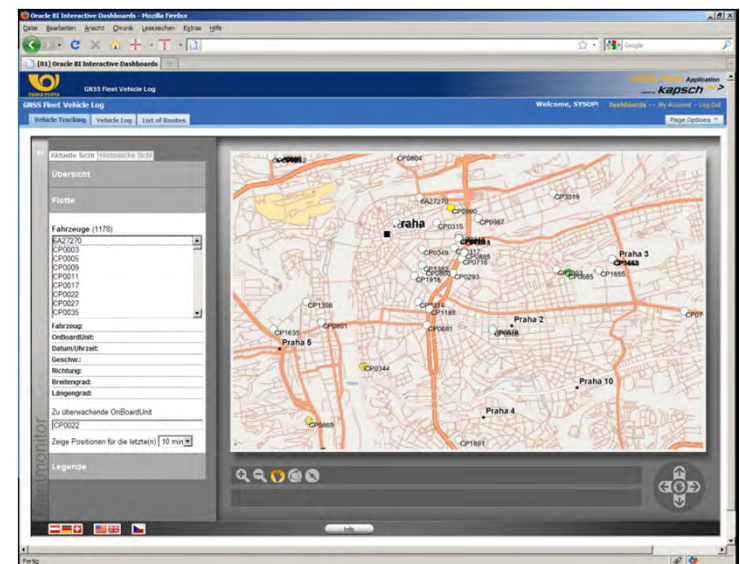
- Management of fleets

Benefits:

- Overview about vehicle location and route progress
- Improved service by alerting customers if a driver will be late for a scheduled stop
- Reduced mileage by tracking out-of-route miles and unauthorized vehicle use

Reference Project: Fleet tracking Czech Postal Service (Trial)

- Country wide real-time tracking of 3500 postal service vehicles in CZ
- Dispatchers can monitor the fleet using a web front end in real time (the actual position of all active vehicles is being displayed in a digital map)
- A log book feature allows daily vehicle reports (start/stop trip location & time, trip distance & time, breaks etc.)



ETC-based ITS applications ...

... allows to improve traffic information, management and planning



- Less congestion
- Better road network (long-term)

... allows to improve traffic enforcement and observation



- Increasing traffic safety
- Increasing public security

... allows to offer value adding mobility services



- Better services for the driver

... allows to offer commercial applications



- Additional source of income for the toll system operator

The missing link

- ITS needs an integrated approach (still a lack of harmonized policies)
- Institutionalize dialog between the Public and the Private Sector
- Public awareness and education are essential
- Political will and leadership are needed
- Interoperability continues to be an issue – guarantee harmonization and open standards
- Law enforcement is fundamental
- Data Privacy issues have to be taken into account



Think of Traffic as an Opportunity.

Dr. Amin Aschdjai-Benissi
Head of International Affairs

Kapsch TrafficCom AG
Am Europlatz 2 | A-1120 Vienna | Austria
Phone +43 (0) 50 811 2117
Mobile +43 664 628 2117
Email amin.aschdjai-benissi@kapsch.net
www.kapsch.net

Please Note:

The content of this presentation is the intellectual property of Kapsch AG and all rights are reserved with respect to the copying, reproduction, alteration, utilization, disclosure or transfer of such content to third parties. The foregoing is strictly prohibited without the prior written authorization of Kapsch TrafficCom AG. Product and company names may be registered brand names or protected trademarks of third parties and are only used herein for the sake of clarification and to the advantage of the respective legal owner without the intention of infringing proprietary rights.