Keynote Lectures

General Requirements on ITS Applications in Conurbation Areas

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General Requirements on
ITS Applications in Conurbation Areas
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Darmstadt University of Technology
Transport Planning and Traffic Engineering
with ZIV - Institute for Integrated Traffic and Transport Systems

Goals for ITS Implementations

- increased safety
- increased capacity
- improved economical efficiency
- reduced environmental impacts

Benefits for travellers:
- better information
- reduced travel times with reliable forecasts
- reduced stress

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Further Reasons for ITS Implementations

- ITS are acknowledged as user-friendly services for citizens, and these services improve the image of administrations and transport authorities.
- Better information improves the citizens' understanding of the traffic situation and of transport policies.
- ITS may be part of a marketing concept of transport operators, city authorities or other institutions or even of a whole region (regional marketing).
- Data gathered for traffic control and traffic information may also be used to improve the general data base for transport planning.

Desired Impacts of ITS Applications on Economy

- Improved traffic information
- Improved traffic control
- Improved traffic pattern
- Improved mobility
- Improved travel quality
- Improved city economy
- Improved quality of life
- Increased readiness of transport authorities for investment in ITS applications
- Increased market for ITS

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ITS Implementation - Sovereign Task or Free Enterprise Business?

ITS partly has to be considered as a sovereign task, but partly it can only develop under market principles!

Open questions:
Where do we have to apply sovereign, regulatory principles to ensure the interests of our society?
Where must and where shall we steer the market-oriented development of ITS?

- Appropriate share of tasks between public and private institutions.
- Development should be supported and not be hindered.

Areas of Application for Static and Dynamic ITS

Dynamic traffic control and information systems are particularly useful if negative traffic situations occur on an unregular basis.

If disturbances or overloads occur never, rarely, or on a regular basis, it should be investigated, if less expensive static systems could be sufficient.

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Integration of ITS in Strategies for Dynamic Traffic Management

Definition:
Predefined concept for actions,
in which
initiated through certain events
one or more selected
measures are realised.

Process of Actions
automatic ("closed loop")
with manual interaction ("open loop")

Implementation of Strategies for Dynamic Traffic Management

Problems
Selection of measures
Measures
Systems
Traffic influence
Elevation of traffic streams
Information systems
Advice buses and public transport

Detection
Traffic control computer

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Assessment of ITS by Assessing the Strategies for Dynamic Traffic Management

Example: Microscopic Simulation with AIMSUN2

1st Conclusion

So much to be done!
2nd Conclusion

For ITS applications the general rules of planning apply as well. For example:

- goal-oriented application (definition and assessment of strategies for traffic management)
- considering groups of measures instead of single measures only
- integrated design of transport infrastructure and its operation (infrastructure planning must consider traffic control measures)
- considering the regional, intermodal and interinstitutional aspects (improving networks for data exchange)
- considering cost-effectiveness
- appropriate share of tasks between public and private institutions

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3rd Conclusion

There are many critical factors of success for ITS Applications, e.g.:

- user acceptance, quality of services
- technical solutions in line with market requirements, business case for the operation, economical success
- intention of partners to cooperate, working PPPs
- reasonable impacts

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Some slides presented by Prof. Boltze during the further discussion:

**ITS in Urban Areas - State of Development: Results of an ADAC Survey**

- Questionnaire sent out to 326 cities, answered by 281 cities.
- 44% of the cities own traffic control centres.
- 43% of the cities control road traffic by network control systems.
- 31% of the cities control road traffic by line control systems.
- 63% of the cities own electronic priority systems.
- 37% of the cities own a dynamic parking guidance system.
- 45% of the cities collect traffic data dynamically.
- 34% of the cities offer traffic information.
- 68% of the cities offer online services for citizens.
- 26% of the cities use ITS within their administration.
- 55% of the cities use electronic cash systems.

*Source: Allgemeiner Deutscher Automobil-Club e.V. (ADAC): Verkehrsinformatik in Städten - Zwischenbericht. Munich, March 2001*

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**ITS in Urban Areas - State of Development: Results of an ADAC Survey**

Traffic Information Services (with regard to 34% = 90 cities):

- others
- fax-on-demand
- telephone
- internet
- TV-text
- broadcasting
- terminals at stops
- terminals at POIs
- mobility advisor
- mobility service centre

*Source: Allgemeiner Deutscher Automobil-Club e.V. (ADAC): Verkehrsinformatik in Städten - Zwischenbericht. Munich, March 2001*

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ITS in Urban Areas - State of Development:
Results of an ADAC Survey

Offered Traffic Information (with regard to 34% = 90 cities):

- PT tariffs
- PT schedule
- PT network
- dyn. parking info
- stat. parking info
- flexible PT
- call service
- city info
- construction
- works, roadblocks
- events
- traffic jams


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ITS in Urban Areas - State of Development:
Results of an ADAC Survey

Use of collected dynamic traffic data (with regard to 45% = 117 cities):

- traffic information
- traffic control
- forecasts
- traffic volume plans
- simulation
- others


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