INNOVATION CHALLENGES FOR URBAN MOBILITY

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WHAT MIGHT BE EXPECTED IN A FUTURE URBAN NETWORK?

- Clarity of purpose
- Actively managed priority/access
- Ubiquitous knowledge
- Increased reliability of performance
- Consistent and effective enforcement
- Integration across boundaries
- Vehicle/infrastructure coordination
Urban Research Agenda

SUSTAINABLE URBAN MOBILITY

THE TRAVEL MARKET/ BUSINESS CASES

USER ATTITUDES/ BEHAVIOUR

FUTURE TRANSPORT OPTIONS

POLICY DEVELOPMENT/ APPLICATIONS

VEHICLE TECHNOLOGIES

NEW SYSTEMS/ SERVICES

TRAFFIC TECHNOLOGIES

INFORMATION TECHNOLOGIES

PHYSICAL INFRASTRUCTURE

EXTERNAL FACTORS

TRANSPORT OUTCOMES/ IMPACTS/ EVALUATION METHODOLOGIES
KEY RESEARCH ISSUE 1

**Vehicle Technologies**

- Vehicle development
- Impacts and opportunities of vehicle and vehicle/infrastructure technologies in urban environments
- Ownership and usage patterns
- Vehicles for market segments
New Systems/Services

• Understanding and providing for future urban mobility needs
• Automated systems
• Roles of car sharing/car clubs/”bespoke” public transport systems
KEY RESEARCH ISSUE 3

Traffic Technologies
- New detection technologies/software
- Better network state estimation/data fusion
- Improved network management systems
- Consistent and effective enforcement
- Widened scale/scope of control
- Vehicle/Infrastructure integration
KEY RESEARCH ISSUE 4

Information Technologies

• Acquisition, communication and presentation of information to users
• Location technologies
• Data base issues
• Systems and services
• Vehicle integration
KEY RESEARCH ISSUE 5

Physical Infrastructure

- Road design/usage
- Public transport services
- Reliability of provision
- Fuel/power provision
KEY RESEARCH ISSUE 6

External Factors

• Energy supply/cost
• Climate change
• Population characteristics
• Technology awareness
• Resource depletion
• Economy
KEY RESEARCH ISSUE 7

Policy Development/Applications

• Actively managed priority/access against clear goals and outcomes
• Infrastructure provision
• Tools and information to inform policy options (short term and long term)
• Policy integration
• Land use/policy integration
• Support for policy makers
OUTCOMES/IMPACTS

• Data bases/costs
• Models
• Levels of evidence
• Impact areas
• Ex ante/ex post
• Revolutionary decisions
TAKING THE RESEARCH FORWARD

• There is no single universal “solution”
• Fundamental technological/systems research needed to underpin alternatives:
  – Technologies
  – Systems and Services
  – Tools and techniques
• Research needed to understand attitudes/behaviour and how it may evolve and be influenced
• Evidence for decision makers
• Trials, demonstrations and implementations (e.g. CIVITAS)
FINAL COMMENTS

• The substantial changes in climate, energy, population and economy will bring opportunities and threats to European cities.

• We need research to better understand these and to ensure that our cities remain vibrant in the long term future.

• We need fundamental research for technological developments across a wide range of areas to support the systems and services which will enable us to take advantage of the opportunities as they arise and to avoid the threats.
• We need research outputs to support and enable decision makers to take timely and effective decisions.

• We need research to better understand the market.
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