SMART SUSTAINABLE Mobility: from research to practice
Structure of Presentation

- Smart Sustainable mobility: What is it?
- ITS: where do we stand today?
- ITS: what we need for the future?
- HIT ITS test bed & mobility living lab
Smart Sustainable mobility: What is it?

- Technology supporting «seamless accessibility» to
  - transport infrastructure & services
  - Change of modes (intermodality)
- For all
  - Passengers (inclusive transport) &
  - Freight (smart cargo)
- Reducing impact to environment through
  - Better chain/mobility management (transport demand management),
  - Infrastructure & services “optimization”, (supply management)
  - User behavior change
Smart Sustainable mobility: What is it?

- **Intelligent Transport systems implementation for**
  - Efficient Operation
  - Reduced environmental impact
  - User Facilitation & behavior change in transport infrastructure & services
  - Safe & secured transport achievement
  - Rational maintenance and operational cost

**Multidisciplinary approach**

**System of Systems**

**Internet of things**
ITS: Where do we stand today?

Smart vehicle & infrastructure management (available)

Cooperative ITS: vehicle - infrastructure communication

Connected ITS systems (in future)

Mobility as a service - connected user
ITS: Where do we stand today?

- ITS Directive sets the framework
- Cooperation schemes exist, while new ones emerge to bridge the gap created due to new business models required, new technological improvements etc
- Role of ITS associations (National ITS associations, ERTICO, ITS Nationals...)
- Huge technological advances
  - Large experience from research activities
  - Connected vehicles and infrastructures
  - User aware traffic management (eg TM20)
  - Efforts to accelerate large scale deployment
Governments under economic pressure: less public spending
Energy & fuel sector largely influenced by external parameters
Banking sector seeks opportunities in “green business”
Private sector is changing, with large IT companies seeking for a change in their market products and SMEs creating innovative solutions
Citizens (end users) are already used to tech products assisting them in everyday life
ITS & innovation: What we need in future

- To define all (new) players
- To enhance dialogue among all
- To coordinate isolated initiatives
- To define new cooperation schemes
- To accelerate innovation
- To capitalize results
- To improve mobility for all by making ITS part of everyday life
- To support policy objectives
ITS & innovation: What we need in future

- **Scientific**
  - Need for multi-disciplinary ITS education
  - Need for proven impact/benefits assessment
  - Content management – big public data

- **Design**
  - Harmonization and interoperability
  - National ITS architectures and commonly agreed standards

- **Deployment**
  - Cooperation between all stakeholders
  - ITS in Smart Cities & ITS Corridors

- **Policy**
  - In line with EC ITS Directive 2010/40/EC
  - Creation of tools that will enable the monitoring of ITS deployment in Europe, incl. national assessment bodies and national access points

- **Industry**
  - Interoperable and open solutions
  - Cooperation between the “giants” and the “new players”

- **Marketing**
  - Increase user awareness
  - Provision of services that tackle actual problems of end users
**Public stakeholders**
- Support technology uptake
  - proof of concept
  - Decision theater
- Technical Assistance for large scale ITS implementations & integrations
- Interoperability checks
- New low cost technologies integration
- Know how transfer

**Business & technology industry**
- new product ideas
- New products testing & enhancement

**Society**
- New mobility supporting services
- User behavioral analysis
- Users training to new services
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Public Transport management

Traffic Control Center

Floating Car Data

Cooperative ITS

Mobility Management Center

smart mobility living lab
Hardware:
- Own network of 45 point-to-point travel time detectors
- Own network of cooperative mobility components
- Servers connected to TMC with real-time traffic information for Thessaloniki and Athens
- Workstations (HIT-Portal)

Software:
- Transportation planning tools
- Simulation tools
- Dynamic traffic assignment tools
- Optimization and mathematical programming
- Statistical analysis tools
- GIS tools

Data
- Mobility & Traffic
- Floating data
- Social media
Simulation of transport systems and networks

- Microscopic simulation of traffic flow
- Cooperative mobility systems simulation

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Technology Interoperability support
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Optimization of transport systems and networks

- Multi-criteria route choice
- Route planning
- Traffic signals
Travel demand forecasting and supply management

- Traffic assignment models
- Dynamic traffic assignment models
- Traffic signals management
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Statistical analyses and mobility indicators

- Statistical methods for real-time traffic prediction
- Historical data analysis
- Indicators / Dashboards
Transport related data/content management

- Multi-source content management
- Data fusion (HIT content aggregator)
  - Traditional traffic measuring sensors
  - Point-to-point detectors
  - Floating car data
  - User/crowd created content
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Intelligent Transport Systems - ITS

- Integrated systems for transport systems management (EOX DTA architecture)
- Cooperative ITS
Insight into cooperative ITS logic

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Services to users - mobile applications
Dynamic traffic forecasting
Ευχαριστούμε για την παρούσα επικοινωνία. Η επόμενη σειρά διαδρομών θα πρέπει να συναντήσει ένα εκτεταμένο διαδίκτυο ασφαλούς και ευκολίας. Συμβουλευόμαστε να επιλέξετε διαδρομές που αποτελούνται από οδούς και δρόμους που είναι ακόμα ευκολίας. Σε περίπτωση που η διαδρομή σας είναι ακόμα δύσκολη, παρακαλούμε να επικοινωνήσετε με την αντίστοιχη καταπράσινη διοικητική περιφέρεια.
Location based services

http://www.easy-trip.gr
http://www.easytripdata.imet.gr
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European Innovation Partnership **Smart Cities & Communities**

**H2020 : SMART CITIES LIGHTHOUSES**

Impact

**Mapping Smart Cities in the EU**

**DIRECTORATE-GENERAL FOR INTERNAL POLICIES**
**POLICY DEPARTMENT**
**ECONOMIC AND SCIENTIFIC POLICY**

**Economic and Monetary Affairs**
**Employment and Social Affairs**
**Environment, Public Health and Food Safety**
**Industry, Research and Energy**
**Internal Market and Consumer Protection**

**STUDY**
EN 2014
Team work !
Thank you for your attention!

Dr. Georgia Ayfadopoulou
Principal Researcher Hellenic Institute of Transport
Centre of Research & Technology Hellas
Email: gea@certh.gr
Tel: 2310 498451, 2310 498457
Web: www.hit.certh.gr