ITS for safer roads and vehicles

UNECE Conference Road Safety, 27-29 April 2011, Belgrade

Vincent Blervaque, ERTICO - ITS Europe
INTRODUCTION TO ERTICO - ITS EUROPE
Facts & figures

- Founded in 1991
- Around 100 Partners
- Around 400 i-Mobility Network members
- 30 projects across 4 continents
- Hosting/managing deployment platforms TISA, ADASIS and Cooperative Mobility Alliance
- Hosting Network of 25 National ITS associations
- Organising the ITS World and European Congresses
- Team of 35 professionals in Brussels
Partners - Public Authorities

» Austria: Federal Ministry for Transport, Innovation & Technology
» Belgium: Vlaamse Overheid - Department Mobility & Public Works
» Czech Republic: Ministry of Industry and Trade/Ministry of Transport
» Denmark: North Denmark Region & Danish Road Directorate
» Finland: Finnish Transport Agency
» France: Ministry of Ecology, Sustainable Development and Spatial Planning, French Institute of Science and Technology, Development and Networks
» Germany: Federal Ministry for Transport, Building & Urban Development, German Aerospace Center, Westdeutscher Rundfunk
» Hungary: Ministry of Transport, Telecommunication and Energy
» Ireland: Department of Transport
» Italy: Ministry of Transport
» Luxembourg: Administration des Ponts et Chaussées

» Norway: NPRA - Norwegian Public Roads Administration
» Poland: Directorate for National Roads & Motorways
» Portugal: IMTT Institute for Mobility and Land Transport, EP - Portuguese National Road Authority
» Saudi Arabia: Ministry of Transport
» Slovak Republic: Ministry of Transport, Construction and Regional development
» Slovenia: Ministry of Transport
» Spain: Basque Government - Department of Transport and Public Works & Dirección General de Tráfico & Directorate - General of Road Transport, Ministry of Internal Development
» Sweden: Swedish Transport Administration
» Switzerland: Directorate General of Swiss Customs, Swiss Federal Roads Office
» The Netherlands: Ministry of Transport, Public Works & Water Management
» United Kingdom: DfT Department for Transport

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Partners

Industry

- Allianz AG
- AVL List
- BMW Group
- Cobra Automotive Technologies SpA
- Continental Wireless Modules GmbH
- Continental Automotive GmbH
- Denso Europe BV
- Efkon AG
- Ericsson AB
- Fiat Group
- Honda Motor Europe
- IBM
- Kapsch TrafficCom AG
- Logica
- MetaSystem SpA
- Mitsubishi Electric Automotive Europe
- Mizar Automazione - Swarco Group
- Navteq
- NEC Europe Ltd
- Nissan Motor Manufacturing (UK) Ltd - Belgian Branch
- NXP Semiconductors
- Panasonic Automotive Systems Europe GmbH
- Peek Traffic BV
- Pluservice srl
- PTV Planung Transport und Verkehr AG
- Q-Free ASA
- Renault
- Robert Bosch GmbH
- Satellic Traffic Management (member of T-Systems)
- Siemens AG
- TeamNet
- Tegeltraf BV
- TomTom
- Thetis SpA
- Toyota Motor Europe
- Vialis
- Volvo Car Corporation
- Volvo Technology Corp. (representing Volvo Group)
- WirelessCar (representing Volvo Info. Technology)
- Ygomi Europe Kft

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Infrastructure Operators

- ASFA - Association Professionelle Autoroutes et ouvrages routiers
- Egis
- Orange
- Telecom Italia SpA
- Vodafone

Users

- ADAC e.V. - Allgemeiner Deutscher Automobil-Club
- AHWB - Royal Dutch Touring Club
- RACC - Reial Automobil Club de Catalunya

Others

- ACEA - Association des Constructeurs Européens d’Automobiles
- CERTH - Centre for Research and Technology Hellas
- CTAG - Automotive Technological Centre of Galicia (Spain)
- Dekra e.V. - Deutscher Kraftfahrzeug Ueberwachungsverein
- FIA - Fédération Internationale de l’Automobile
- ICCS - Institute of Communication and Computer Systems
- ICOOR - Interuniversity Consortium for Optimization and Operation research
- innovITS
- Institute for Transport Studies, University of Leeds
- IRU - International Road Transport Union
- ISMB - Istituto Superiore Mario Boella
- Sintef
- Tecnalia
- TNO Mobility
- VDA - German Association of the Automobile Industry
- VTT - Technical Research Centre of Finland
Our vision

“Intelligent Mobility”

- Towards zero accidents,
- Towards zero delays,
- With reduced impact on the environment,
- Towards fully informed people,

  - where services are affordable and seamless,
  - privacy is respected and
  - security is provided.
Our mission

The ERTICO Partnership will bring *Intelligence into Mobility* for all travellers and businesses by:

» Promoting and deploying ITS
» Enabling interoperable and seamless ITS services across Europe
» Being the reference for ITS
» Cooperating with all stakeholders
» Promoting all modes of transport
Our goals

- **EcoMobility**
  - towards reduced impact on the environment

- **InfoMobility**
  - towards zero delays and fully informed people

- **SafeMobility**
  - towards zero accidents

- **CooperativeMobility**
  - towards fully connected vehicles and infrastructure

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ERTICO actions

- Advance R&D
- Show and assess
- Drive deployment
- Raise Awareness
- Support information exchange
- Develop common positions
- Inform and support policy making
- Support related initiatives
- Co-funded Projects
- Network of National ITS Associations
- Task Forces/Deployment Platforms
- ITS Congresses
- i-Mobility Network
- Workshops/Fora
- Sector Platforms
- Policy Group
- Public Authorities Platform

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ITS FOR SAFER ROADS AND VEHICLES

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ITS Applications Roadmap

Traffic information
- Radio broadcasting
- RDS TMC
- TPEG services
- Probe data
- Cooperative services

Navigation
- Static navigation
- Connected navigation
- Predictive navigation
- Dynamic navigation
- Multi-modal navigation

Safety
- Passive safety
- ADAS for Preventive safety
- ADAS for Active safety
- Map based ADAS
- Pan-EU eCall
- Cooperative ADAS

Energy Efficiency
- Eco driving
- Eco navigation
- Eco traffic management
- ITS for FEV

Freight & Logistics
- Tracking & tracing
- eFreight
- Truck navigation
- Urban logistics

Traffic management
- VMS & traffic control centre
- Incident detection & management
- Free flow tolling & road user charging
- Cooperative traffic management
- On board variable message signs
- DATEX II

Co-Modality
- E-ticketing
- Connected traveller
- Multimodal traffic & traveller information

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SafeMobility...
...towards zero accidents

Integrated road safety
provide all road users with relevant safety support from vehicle & infrastructure

Safe urban mobility
improve safety into the design of urban mobility services

Road user behaviour
enable safety innovation through better understanding of road user behaviour
Time To Collision Concept

Harmonised progression of interventions and integration of preventive, active and passive safety

- **Preventive and Active Safety**
  - Inform: Foresighted driving
  - Support: Warning & assistance systems
  - Intervene: Pre-crash systems & reversible protection systems

- **Passive Safety**
  - Safety systems soft level
  - Safety systems hard level
  - Minor accident
  - Severe accident
  - Post-crash: Rescue systems & services

**Examples**
- Accident prevention and collision mitigation: Haptic and acoustic interaction support for Lane warning, Distance & Speed Warning
- Brake Assistant Active vehicle controls
- Emergency braking
- Collision avoidance
- Reversible restraints

- **Occupant Protection**
  - Airbags
  - Vehicle crashworthiness
  - Materials (energy absorption)
  - Intelligent restraint system

- **eCall**
  - Improved response services
  - Emergency vehicle clearing

**Measures to avoid accidents**

**Measures to mitigate consequences**
The „virtual safety belt“ concept

Foresighted Driving

Intersection safety

Electronic Horizon

Hazard Messaging

Safe Speed + Safe Following

Lane Support

Pre-crash Systems, Reversible Protection Systems

Collision Mitigation

Blind Spot

Lane Change Assistance

100 ms
10 ms

The Virtual Safety zone

The Virtual Safety zone

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Co-operative Systems
The Potential

» The potential benefits include:
  ‣ increased road network capacity
  ‣ reduced congestion and pollution
  ‣ shorter and more predictable journey times
  ‣ improved traffic safety for all road users
  ‣ lower vehicle operating costs
  ‣ more efficient logistics
  ‣ improved management and control of the road network (both urban and inter-urban)
  ‣ increased efficiency of the public transport systems
  ‣ better and more efficient response to hazards, incidents and accidents

Vehicle-to-Infrastructure Communication (V2I)

Vehicle-to-Vehicle Communication (V2V)

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Cooperative Systems Safety Applications

<table>
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<th>Infrastructure based</th>
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<td>Speed Alert</td>
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<td>Longitudinal Collision Prevention</td>
<td>Road Departure Prevention</td>
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<td>Road Departure Prevention</td>
<td>Safety Margin for Assistance and Emergency Vehicles</td>
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<td>Vulnerable Users Protection</td>
<td>Co-operative Intersection Collision Prevention System</td>
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<td>Hazard and Incident Warning</td>
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Summary

1. ITS has been contributing for many years to reduce number and severity of road accidents by offering mature solutions to make road infrastructure and vehicles safer
2. ITS is the main enabler to achieve integrated road safety by better linking road infrastructure, vehicles and users
3. Next generation of ITS solutions based on vehicle-to-vehicle and vehicle-to-infrastructure communications has the potential to increase even more road safety by reducing risk of accidents
4. A majority of ITS solutions deliver combined benefits for road safety, traffic efficiency and reduced impact on environment
5. ITS success comes from multi-sectoral partnership from public and private sectors sharing same goals
8th European Congress on ITS

ITS for sustainable transport of persons and goods in urban regions

Lyon, France, 6-9 June 2011

www.itsineurope.com

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Partners

Organised by: ERTICO ITS EUROPE
Hosted by: Rhône-Alpes
Under the high patronage of: Ministère de l’Écologie, du Développement durable, des Transports et du Logement
Supported by: ATEC ITS FRANCE

With the support of:

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Themes & Topics

Co-modal urban transport management

From cooperative systems to integrated mobility services

Electromobility

From smart concepts to successful implementation

ITS for sustainable transport of persons and goods in urban regions

Governance and business issues

ITS for adaptive and resilient cities

Information and communication: providers and users

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A unique opportunity

» to exchange information and network with 1500 stakeholders, decision and policy makers
» to share best practices and lessons learned
» to monitor progress and measure results in terms of implementation and deployment
» to exhibit state of the art technologies and innovative products and services
» to open business and partnership opportunities
» to showcase the latest ITS solutions

Be part of the ITS Community meeting in Lyon

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More information

Registrations open 4th April 2011

Do not miss the ITS week of 2011!

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Let us cooperate to bring Intelligence into Mobility!

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