



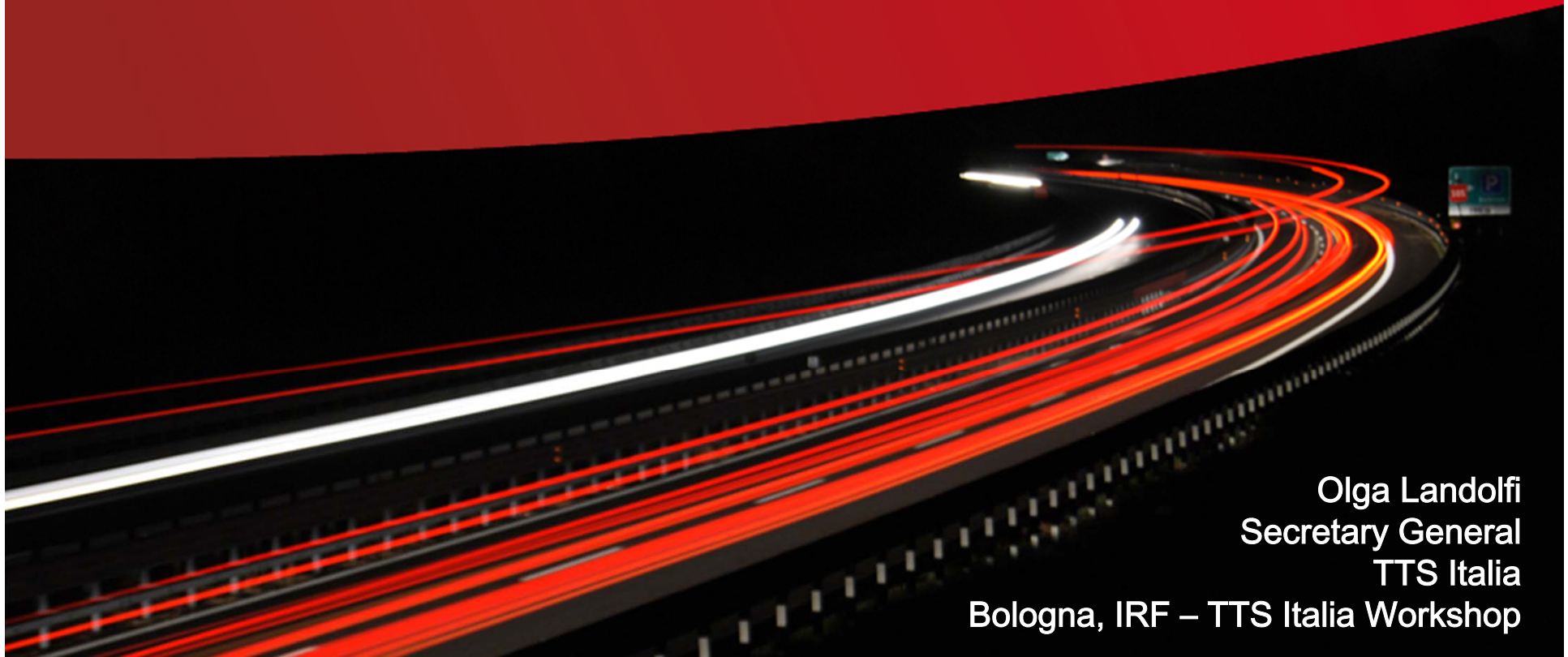
Associazione Italiana  
della Telematica  
per i Trasporti e la Sicurezza

# The Challenge of Smart Mobility in Italy

## The Italian ITS Action Plan

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Bologna, IRF – TTS Italia Workshop



## Transports in Italy: main features

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- Italy counts for 60.387.000 inhabitants, it is the fourth country in the EU for population after Germany, France and UK and the 23th in the world.
- The density of population is 200,03 persons for sq km, higher than the European average
- Italian transport network includes:
  - ✓ 168 ports
  - ✓ 20.392 km of railway network
  - ✓ 254.686 km of road network (local roads)
  - ✓ 6.668 km highway network (of which 5.724,4 equipped with electronic tolling)
  - ✓ 45 airports (ENAC)

- ➔ Internal passenger traffic modal distribution:
  - ✓ 91,86% by road
  - ✓ 5,98% by rail
  - ✓ 0,44% by water
  - ✓ 1,72% by air
  
- ➔ Internal freight traffic modal distribution (more than 50 km):
  - ✓ 61,93% by road
  - ✓ 13,02% by rail
  - ✓ 24,58% by water
  - ✓ 0,47% by air



## Critical Issues

- Road transport is prevailing respect to the other modes
- Congestions are concentrated around the urban areas and in the cities
- Uncontrolled increase of congestions both within cities and in extra urban areas
- Lower efficiency of public transport in urban areas
- Lower efficiency of freight transport with negative consequences on the whole national economic system
- Higher road accidents rate
- Higher pollution rate with negative impacts on environment



# Strategic needs and priorities

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- New infrastructures
- **Optimisation** of the use of infrastructure and logistic platforms through the adoption of appropriate control, management and information strategies
- **Better integration** of the transport networks to achieve an effective intermodality both for passengers and freights and to ensure efficient links with the other European Countries
- Improvement of **road safety** in order to reduce disparity with the other European Countries
- **Integrated management** of mobility in urban areas and multimodal real time user information



## The challenge for ITS in Italy

- Commuters in Italy:
  - ✓ 70% use the car everyday to go to work
  - ✓ 16% take more than 30 min
  - ✓ Only 24% use the bus “sometimes”
  - ✓ 140 hours/year spent in queues on ring road
- Road accidents are falling down since 2003
- But...76% of accidents occur on urban roads

**ITS solutions can give back time to travellers  
and improve safety!**



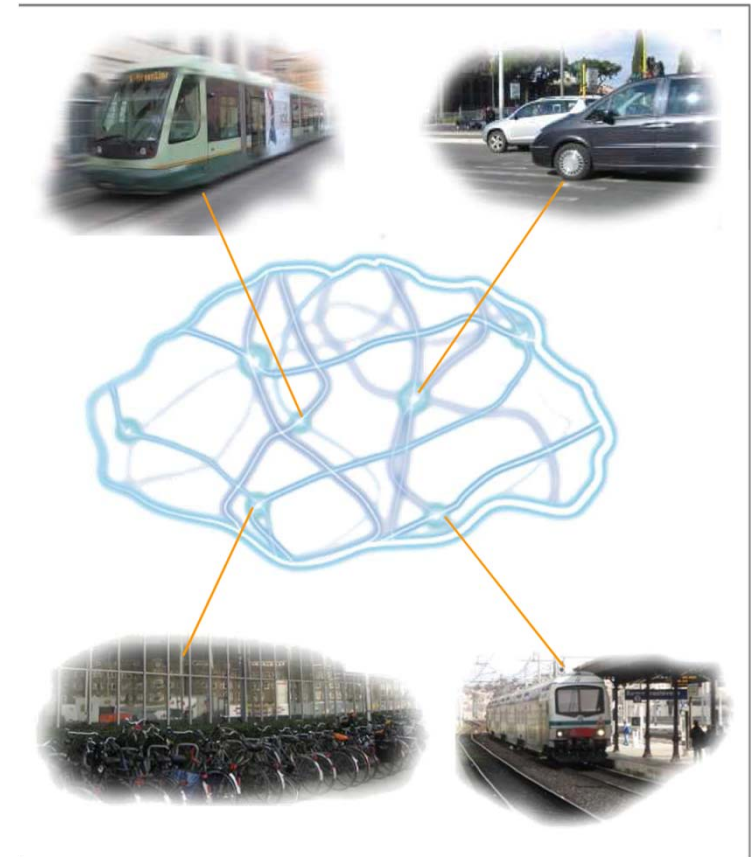
## ITS: a key tool for Italy

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- ➔ Italy started the deployment of ITS applications in the second half of the '80s and successful results began to appear a decade later in cities and along the highway network
- ➔ The major challenge faced in last twenty years has been to create the conditions for making ITS a real opportunity for Italy
- ➔ Sectors of major development:
  - ✓ Traffic management for urban and extra urban areas
  - ✓ Local Public Transport management
  - ✓ Long haul freight transport management and control
  - ✓ Automatic Tolling - the Telepass system
  - ✓ In-vehicle navigation services
  - ✓ Passengers information systems

## The current trend

- ➔ Deployment of regional supervisions able to:
  - ✓ Coordinate subsystems
  - ✓ Act as functional interface between traffic control and management
  - ✓ Combine urban/interurban systems
- ➔ Provide coherent information at interchanges: Bus/tram + train + ferries.....
- ➔ Adoption of integrated payment systems





## Example: the Province of Florence

### The traffic supervisor system

- ➔ The supervisor integrates 14 different and independent subsystems:
  - ✓ FCD
  - ✓ Traffic light control (140 intersections)
  - ✓ CCTV surveillance (137 cameras)
  - ✓ AVM (800 vehicles, 2 companies)
  - ✓ LTZ (25 electronic gates)
  - ✓ Car parks
  - ✓ .....
  
- ➔ The supervisor provides a dynamic vision and forecast for whole network



## Example: the Province of Florence

### Information services

- WEB portal
- Mobile App (IOS, Android)
- Web 2.0
- Facebook
- Twitter
- Google calendar
- WiFi on trams

**Personalised information everywhere – Special focus on vulnerable road users and young people**





## The context: Rome

An aerial photograph of Rome, Italy, showing the dense urban landscape with the dome of St. Peter's Basilica visible in the distance. The image serves as a background for the text and table.

Municipal Area	km 1.285
Population (city)	2.800.000
Metropolitan Area	4.500.000
Road Network	km 5.000
Vehicles (city)	2.600.000
cars	2.000.000
2 wheels	450.000
goods delivery	150.000
Daily Trips	6.000.000
Peak-hour Trips	600.000

- Historic heritage across centuries
- Narrow roads: no modifications
- Italian Capital City (Gov / Institutions)
- The Vatican State
- The Attitude towards private cars
- The Tourists (>23 millions per year)
- Tourist coaches: 200.000 per year



# ITS in Rome

- The **ITS Integrated System of Rome** has been deployed for the Jubilee Year and it is in operation since May 2000
- The ITS System is managed by Roma Servizi per la Mobilità, the Mobility Agency of Rome
- The **Traffic Control Centre** currently integrates the management of both private and public transport and the Traffic Limited Zone
- The ITS System enables advanced infomobility services for users as **muoversiaroma.it** mobile, a real time info service on public transport and traffic conditions through mobile phone



# The Traffic Control Centre

→ The Traffic Control Centre manages:

- ✓ Traffic lights network (1320 devices) through the UTOPIA system
- ✓ Access to Limited Traffic Zones of the historical centre
- ✓ Parking systems on road (79.000 places, 2 2000 parking meters)
- ✓ Interchange parking areas (29 Park & Ride with 12.000 places)
- ✓ UTT (Urban Travel Time) system for information on travel times
- ✓ Local Public Transport network (2600 vehicles, 325 bus lines, 7 tramway lines, 2 underground lines for a total of 1,2 billions passengers-km every year)
- ✓ Users information systems (Variable Message Signs, Internet, mobiles)

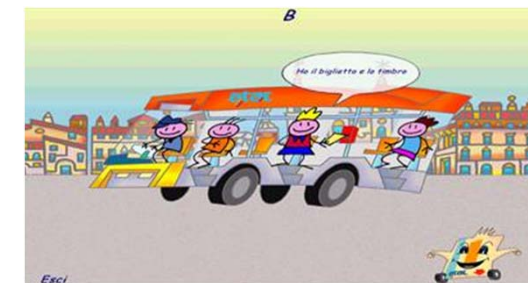




- Web Site (5.5 Mil pag/month)
- Electronic Bus Stops (300)
- On Board Bus Information (400 vehic.)
- Muoversiaroma.it *Mobile*
- Newspaper page “METRO”
- Roma Radio (The Tube station)
- Tele News Metro (underground TV)
- Awareness Campaigns



Info kiosks



WEB

# ITS in Turin

- The **ITS Integrated System** of Turin is managed by 5T, a public company owned by Piemonte Region, the Municipality of Turin and the Province of Turin
- The **5T system in Turin** is able to control all the mobility issues in the Turin area and it is recognised as one of the most advanced mobility management system in Europe
- 5T has managed the entire mobility system toward all the competition areas during the **Winter Olympic Games** in Turin in 2006





## Turin

170 intersections  
26 variable message signs (VMS)  
18 mobile VMS  
1300 traffic sensors  
50 cameras (15 intersections)

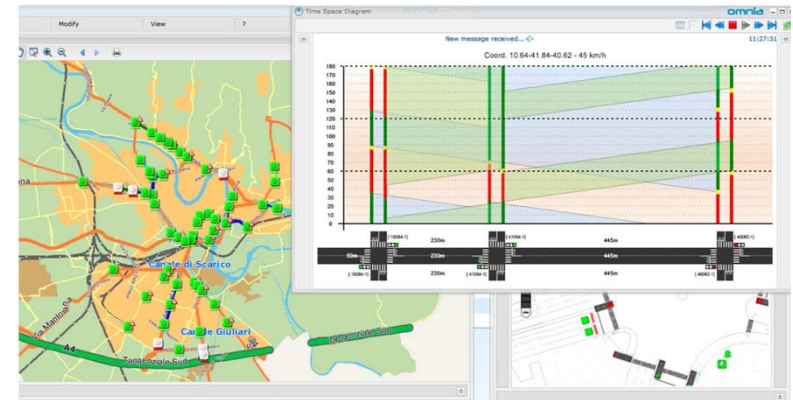
### And also

1300 GTT buses/trams  
9 electronic access control cameras  
6 speed excess lanes



# V2I Pilot Project in Verona

- The City of Verona is **currently experimenting a V2I** systems aimed at adapting dynamically the speed of equipped vehicles to benefit of the green light at intersections
- Communication V2I is bidirectional: also the vehicle transmits to traffic control centre information on traffic conditions
- The experimental phase will end in December 2012



## ITS are “smart”.....

### A positive view of ITS:

→ ITS are feasible:

- ✓ in any context
- ✓ after good planning
- ✓ in line with specific city needs
- ✓ with limited efforts (cost/time)

→ ITS can “pay for itself”

- ✓ e.g. Public Transport priority
- ✓ enforcement
- ✓ charging schemes

→ ITS provide substantial benefits

- ✓ relief from congestion
- ✓ decrease of travel times
- ✓ increase of safety
- ✓ decrease of pollution and energy consumption
- ✓ running costs savings





- We need to look for a combination of “Improvements” and “Demand Management” for obtaining robust medium/long term benefits
- We need to consider the full life cycle
  - ✓ correct planning
  - ✓ consensus building
  - ✓ positive use of technology, adopting open systems technology independent
  - ✓ efficient deployment (proper project management)
  - ✓ effective maintenance
    - of equipments
    - of traffic models

## Need of a clear policy on ITS

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- ITS European Directive entered into force on August 2010, represents a great impulse for a wider ITS deployment in our country
- Best practices clearly show the benefits that ITS can bring
- Nevertheless, Italian cases and applications demonstrates that for obtaining higher benefits, a clear policy is required, taking into account all the requirements that ITS must satisfy
- The national strategic policy objectives on ITS must take in consideration both input coming from Europe but also the priorities of the national transport policy

**TTS Italia has worked at defining a proposal for the National ITS Action Plan in response to the EU Directive on ITS**

## The National ITS Action Plan

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- The ITS Action Plan has been defined involving the main associations of the stakeholders of the transport sector through a consensus process lasted 8 months
- The proposal of the ITS Action Plan contains 19 priority actions to be realised in the period 2013-2017
- The ITS Action Plan indicates a list of action tools for the deployment
- The ITS Action Plan also points out some general remarks as key factors for ITS in Italy

**The proposal for the National ITS Action Plan has been officially presented on 3 December at “Nuovo Mondo” Conference**

## Key success factors for ITS -1

### Cooperation is essential

- **Planning of ITS** must take into account both the technological requirements but also the **organisational aspects**, clearly identifying all the actors to be involved in the cooperative development and operation of the new systems in order to make them work optimally
- **Cooperation** involves stakeholders, actors, organisations,...people....Technology is only “part” of the game
- Only through an effective **cooperation** ITS can really deliver efficient and reliable services to final consumer



## Key success factors for ITS -2

### Standards and architectures for a common language

- **Common standards and architectures** are at the basis for the development of interoperable systems and services
- **Interoperability** is yet an open issue: The Italian ITS Architecture ARTIST has not been updated and developed until 2003
- Only through the **harmonisation** of the services ITS can really represent a great opportunity both for public institutions, private companies and especially for the community





## Key success factors for ITS -3

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Benefits evaluation is key for Public Institutions to invest in ITS

- The final aim of Public Institutions that invest in ITS is to obtain concrete **benefits** for community
- The **evaluation of benefits** can help Public Institutions to demonstrate the **ROI** in a tangible way
- The lessons learnt about ITS possible impacts obtained from best practices can **foster the deployment** of ITS and, consequently, the development of the market, especially B2G
- The institution of a **National ITS Database** is useful to exchange best practices and therefore can push the development of ITS, as in USA

## Key success factors for ITS -4

Benefits evaluation is key for Public Institutions to invest in ITS

→ But open issues are:

- ✓ Evaluation of benefits is not yet an essential phase of the ITS projects, whereby it could be advisable to include benefits evaluation directly in the tender phase as a common practice
- ✓ Standard methods for evaluation are not yet available, a common toolbox needs to be developed



## Key success factors for ITS -5

### Adoption of sustainable financing schemes for investments/operation

- Identifying Revenues is a priority:
  - ✓ Parking
  - ✓ Ticketing
  - ✓ Enforcement
  - ✓ Tolling
- A key policy issue is connecting the revenues to traffic investments and operation
- The adoption of Public Private Partnership (PPP) schemes can help to foster investments
- The launch of a Nation fund for ITS is also proposed



## Key success factors for ITS -6

Robust business models are needed to push the market!

- To deploy **profitable ITS services** robust business models are necessary especially B2C
- The new mobile devices as smartphones, tablets, etc. can offer new opportunities for business
- In the near future **cooperative driving** can open new market for more personalised services to final consumers
- It is essential to **create the conditions for an open and competitive market** of the services, avoiding monopolies that can hamper the development of new ITS services and, consequently, new opportunities both for the business sector and the community



## Key success factors for ITS -7

A common vision is needed

- **Cooperation** is also essential at Ministerial level
- A **common table** involving the main Ministries interested in ITS is proposed in order to steer the initiatives in a coordinated way according to the objectives of the ITS Action Plan
- Also at local level it is time to launch and develop **best practices** that can be used as a model for similar projects and not pilot projects isolated





## Key success factors for ITS -8

### Research and Education are paramount for ITS

- In Italy a National Research Programme on Transport does not exist
- **Research** is a key success factor for the competitiveness of the national ITS sector
- It is essential to promote a **National Research Programme** on ITS especially focused on cooperative systems
- Also **education** must be fostered in order to have the right people able to design, develop, implement and maintain ITS



## Priority Area 1 – Priority Actions

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### Optimal use of road, traffic and travel data

- **PA1** – implementation of databases for traffic and travel information
- **PA2** – development of reliable and certified information services

## Priority Area 2 – Priority Actions

### Continuity of traffic and freight management ITS services

- **AP1** – development of integrated multimodal ITS services for both people and freight transport
- **AP2** – to foster the use of ITS for fleet management both for freight and passenger transport (EGNOS/Galileo)
- **AP3** – ITS for the management of logistic hubs (interports, ports)
- **AP4** – ITS for Public Transport Management
- **AP5** – nationwide adoption of interoperable electronic ticketing
- **AP6** – continuity of services along the borders
- **AP7** – adoption of smart mobility policies in urban and metropolitan areas (priority for public transport, bike sharing, car sharing, electric mobility, ..)

## Priority Area 3 – Priority Actions

### ITS road safety and security applications

- **AP1** – development of the national eCall service
- **AP2** – implementation of safe and secure parking places for trucks and commercial vehicles
- **AP3** – ITS for insurance companies and related services: black boxes and connected vehicles
- **AP4** – nationwide diffusion of ITS services for security for public transport and in the transport hubs (metros, ports, stations, airports)
- **AP5** – nationwide diffusion of ITS solutions for safety in tunnels
- **AP6** – nationwide diffusion of enforcement tools for safety
- **AP7** – nationwide diffusion of ITS for long distance freight transport control
- **AP8** – promotion of ADAS systems

## Priority Area 4 – Priority Actions

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### Linking the vehicle with the transport infrastructure

- **AP1** – development of cooperative driving systems
- **AP2** – monitoring of road transport infrastructures in adverse weather conditions and for the optimisation of maintenance operations



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