



Regional Awareness Raising Workshop on Main UN Road Transport Legal Instruments and on Intelligent Transport Systems (ITS)

Brussels, 4 - 5 July 2017



The Pivotal Role of ITS in Road Transport



- **Intelligent Transport Systems**
- Applications and Benefits
- Strategy and Architecture



Intelligent Transportation Systems (ITS)

*“The use of advanced electronics,
telecommunications and control for the
substantial improvement of transportation
systems”*



ITS Goal

- Use capacity in existing network more efficiently
- Substantially improve mobility, safety and productivity
- Reduce environmental cost of travel
- Improve economy & quality of life



Activity 1B.1

EuroMed TSP dedicated “Activity 1B.1: Assist partner countries develop Intelligent Transport Systems (ITS)”

- 1B.1.1: Organize regional workshop on European and international experience for ITS
- 1B.1.2: Prepare EuroMed “Strategic ITS Plan” and “Preliminary ITS Architecture”
- 1B.1.3: Organize national workshops to present ITS work and provide assistance to authorities, transport operators and drivers



Background

- 2003: United Nations Economic Commission for Europe (UNECE) Inland Transport Committee (ITC): use of telematics and ITS is major challenge →
- 2004: UNECE: ITS Round Table under World Forum for Harmonization of Vehicle Regulations
- IRU favours ITS applications in road transport (eCall, track/tracing to provide significant measurable safety, environmental, economic benefits.



ITS Action Plan

- European Commission COM(2008) 886 fin: Action Plan for Deployment of ITS in Europe.
- Accelerates/coordinates ITS deployment in road transport & interfaces with other transport modes.
- Outlines priority areas, actions and timetable.
- Sets framework for specifications → mobilisation of Member States & other stakeholders.



ITS 2010/40 Directive

- Ensures compatibility, interoperability, continuity for deployment and operational use of ITS.
- Into force: 27/8/2010. States comply by: 27/2/2012.
- Priority areas and actions at European level.
- Must develop specifications, binding for deployment of related ITS applications and services.



ITS Directive priority actions

- Multimodal travel information services
- Real-time traffic info services
- Provision, where possible, of road-safety minimum universal traffic info free of charge
- Harmonised interoperable eCall
- Info services for Safe/Secure Parking Areas (SSPA) for trucks and commercial vehicles
- Reservation services for SSPA.



- Intelligent Transport Systems
- **Applications and Benefits**
- Strategy and Architecture



Example ITS Applications

- Intelligent Safety and Security
- Crisis Management
- Freight Transportation
- Tourists & Passengers: Intelligent Information
- Road Energy Management
- Eco-ITS



Safety and Security: Intelligent Incident Management Strategies (IIMS)



Lessons from past applications in Athens, Southampton, Barcelona

Generate information for VMS/SMS on congestion,
incidents

- Make recommendations (e.g. on speed)
- Rerouting information & control flow

Benefit estimates

- Pay back in 1-2 years
- Reduces road deaths by 30%

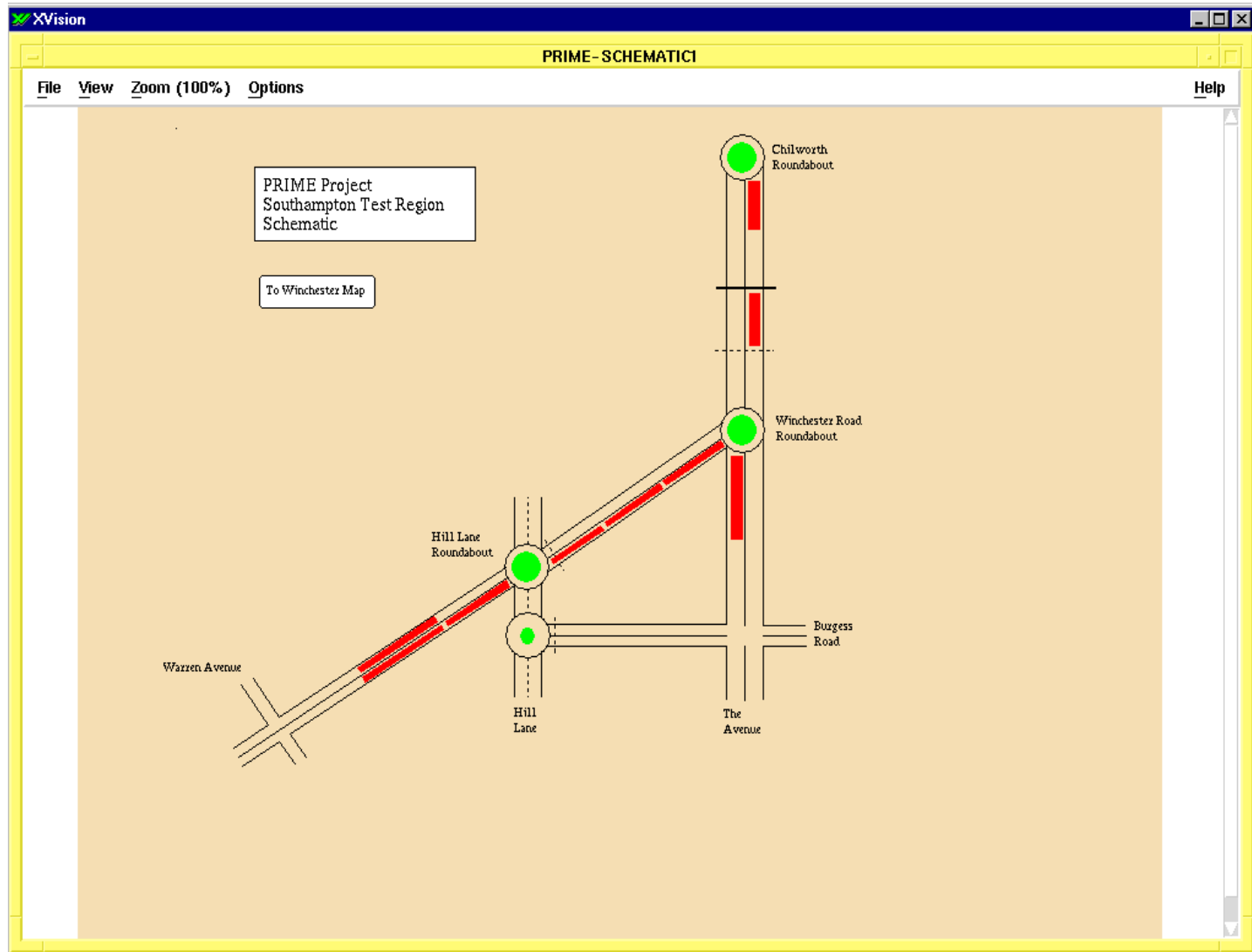


1 sec prior to crash



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Warnings to operator



Operator or site personnel verify



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Incident log verified

Microsoft Access - [Operator Log (Prime)]

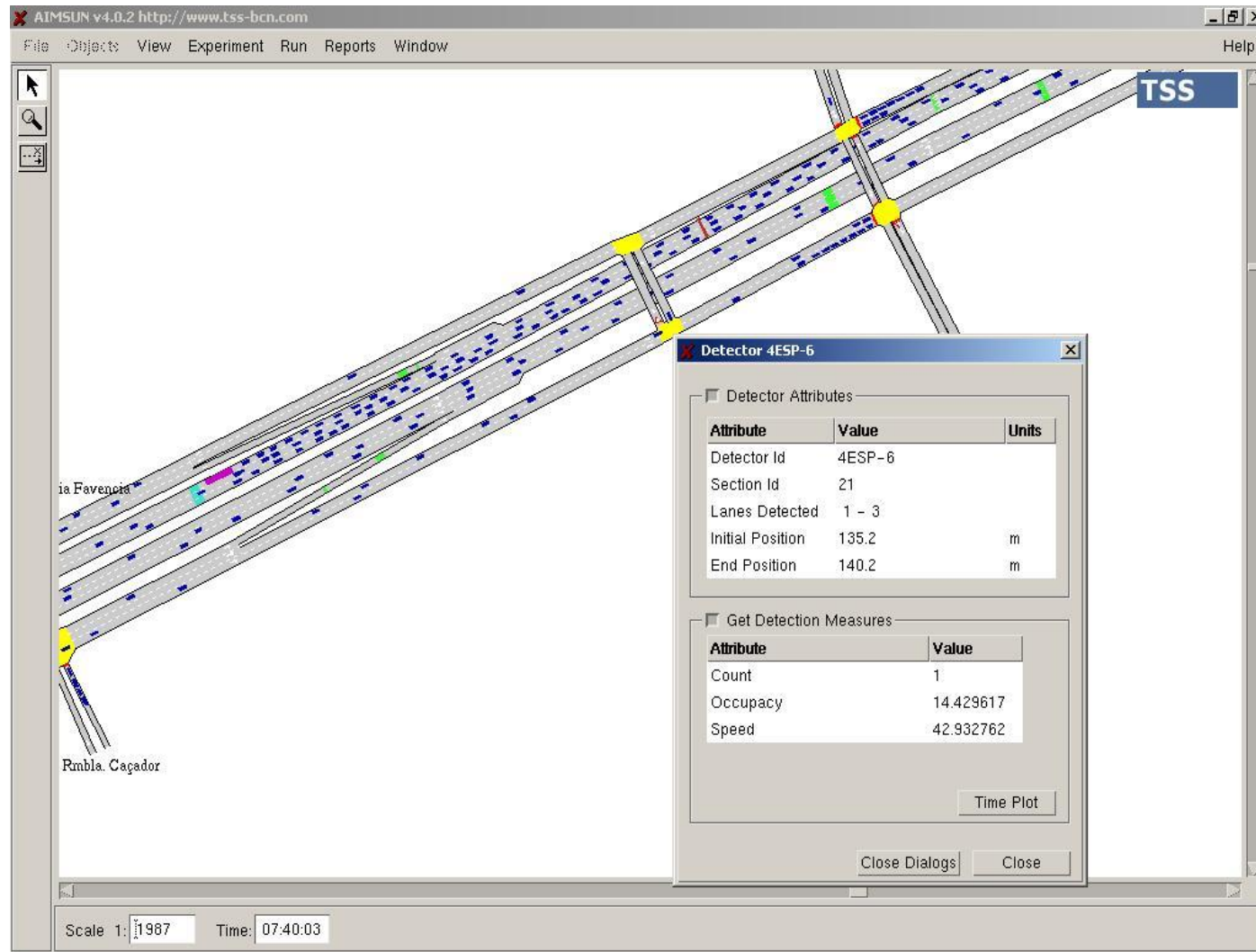
File Edit Insert Records Window Help

Add Operator Find Phone Number Find Site Ex

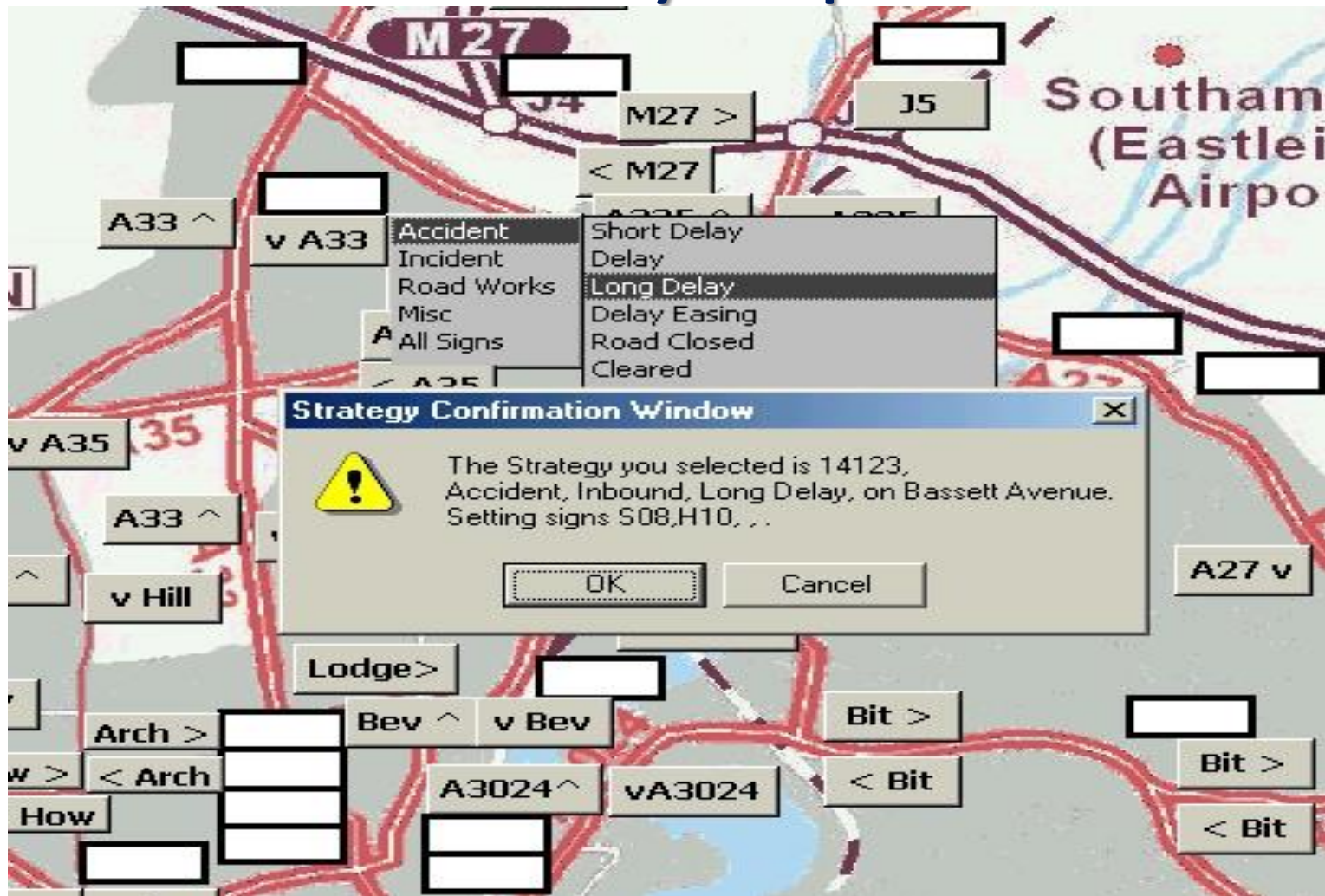
Date	Time	Phone	Operator Name	System Type	Actions / Comments	Incident?
27-Jun-01	07:00	<input type="checkbox"/>	Andy	UTC	BLCs IHRW J10241 / J06221 / J06222 / J06121 / J06111 / J06211 / P06314 / P06124 / P06125.	<input type="checkbox"/>
27-Jun-01	08:10	<input type="checkbox"/>	Trevor	U06		<input checked="" type="checkbox"/>
27-Jun-01	08:11	<input checked="" type="checkbox"/>	Andy	Information	Call from Tim Goodman info on traffic. Also will call us when Ab Loads leave Rownhams.	<input type="checkbox"/>
27-Jun-01	08:15	<input type="checkbox"/>	Andy	VMS	Manually set H10 Breakdown vehicle Ahead.	<input type="checkbox"/>
27-Jun-01	08:20	<input type="checkbox"/>	Trevor	U06		<input checked="" type="checkbox"/>
27-Jun-01	08:20	<input checked="" type="checkbox"/>	Andy	FC Police	FC checking we are aware of RTA Bassett Ave.	<input type="checkbox"/>
27-Jun-01	08:25	<input checked="" type="checkbox"/>	Andy	VMS	Changed H10 to Long Delays.	<input type="checkbox"/>

Record: 2 of 607

Simulation selects best response (r-t)



Intelligent strategy selected and automatically implemented



Strategy automatically sets VMS, SMS



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Traffic operator personal assistance



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Check incident state for clearance





Incidents can include

- Hazardous materials
- Terrorist Attack
- Natural disasters
- Multiple casualties (major traffic collisions, fire)
- Wide-area search and rescue
- Infrastructure failure



**EuroMed Transport
SUPPORT PROJECT**



Road Energy Management (REM)

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Road Energy Management - REM

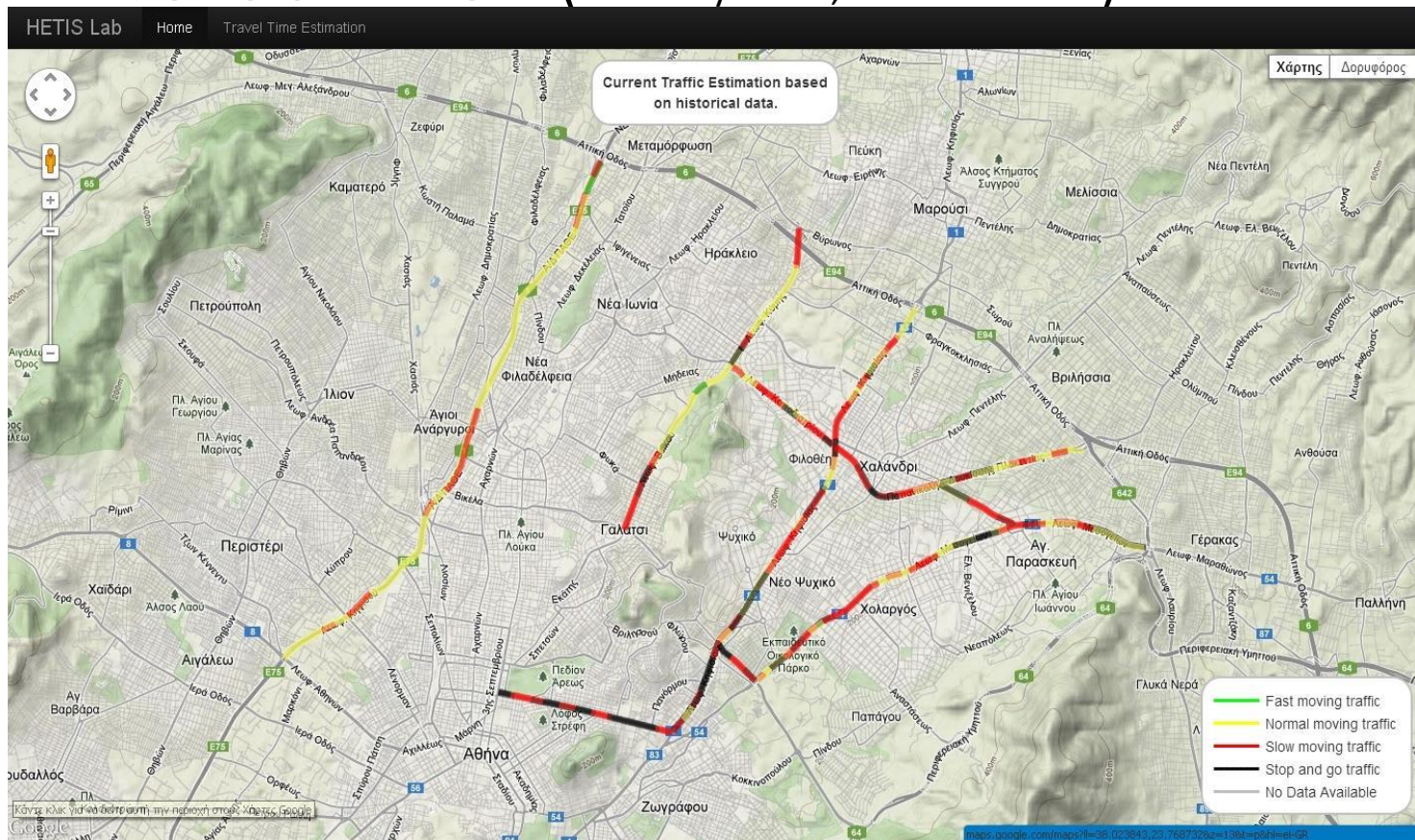
Reduce *Energy footprint: Reduce fuel consumption & impact* of incidents/ congestion

- while preserving the *safety* of motorists & freight
- while preserving network *security*
- while reducing the environmental *impact*.



REM

- HISTORICAL DATA-BASED TRAFFIC COLOURATION (Thursday 09.00, 10-month data)

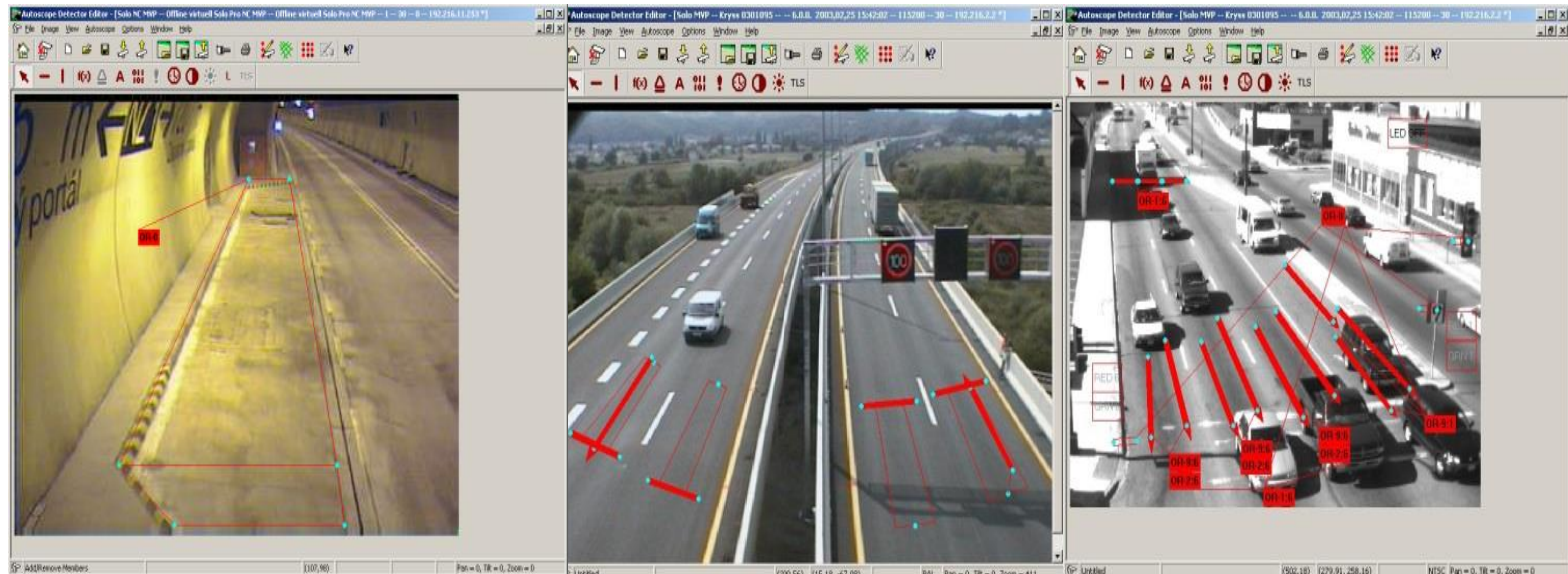




REM – GPS & MV

GPS supported by Intelligent Infrastructure:
Machine Vision (Intelligent Video)

- **Estimate Speed & Energy from intelligent camera**





REM – Radar

Athens motorway Radar installation. Data collection and GPRS transmission since 2010.





License Plate Reader (ANPR)

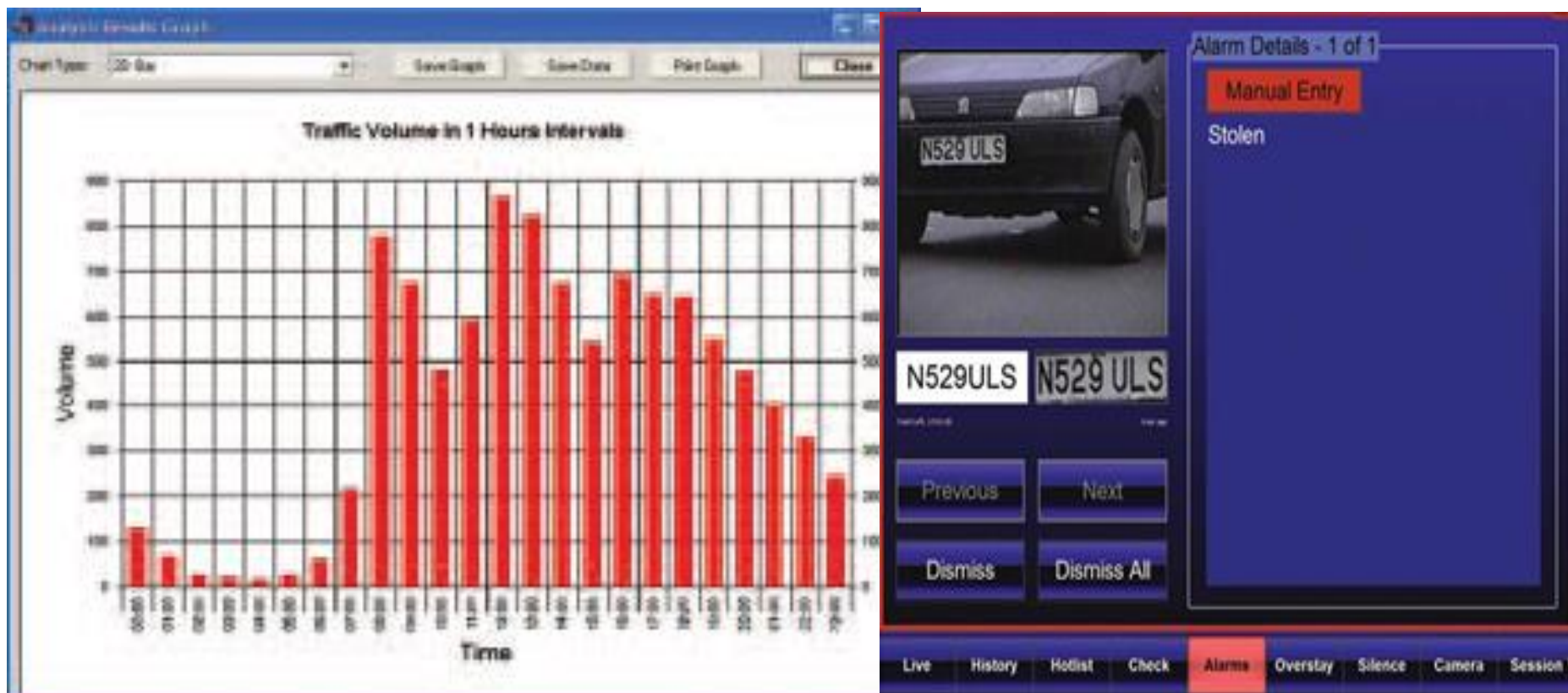
license plate reader (ANPR)





Intelligent Infrastructure: ANPR

- **Speed, Energy verified between 2 or more ANPRs**





GPS-BASED

- Safety & security alerts
- Congestion/incident info (accidents, road works)
- Fleet management
- Pollution alerts
- Greenest route / Energy consumption estimation

Can be used by:

- Vehicle drivers
- Fleet owners



European territorial cooperation Programme
Greece-Italy 2007-2013



GIFT 2.0

Greece-Italy Facilities for Transport and Logistics



Center for Business Innovation
Euro-Mediterranean Incubator
in "e-Business Management"

Greece HUBS

► 5 ports



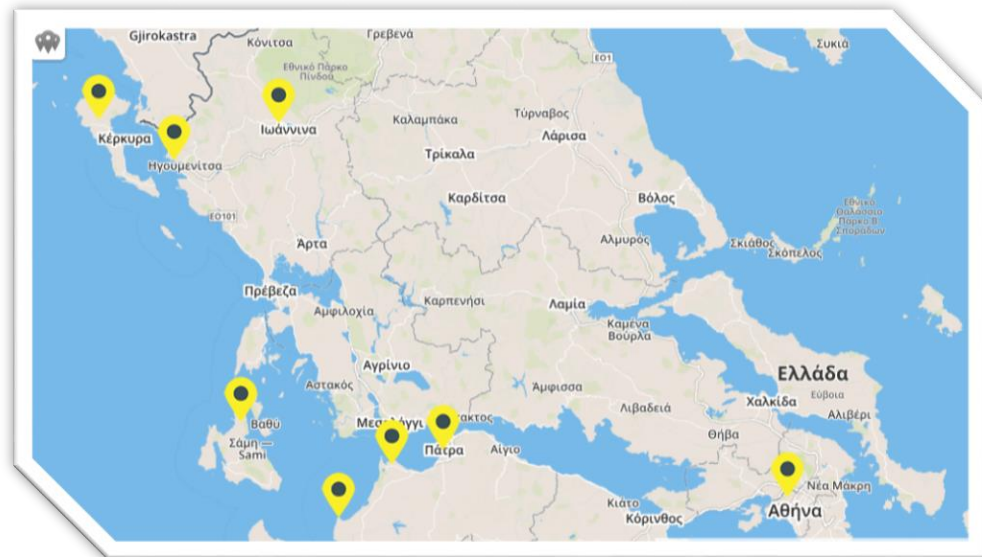
► 2 railway stations



► 2 airports



► 2 bus stations



Italy - Puglia HUBS

► 5 ports



► 5 railway stations



► 2 airports



► 12 bus stations



WEB APP - simple planner

WEB APP - simple planner

To modify a trip: drag start and end location pins on the map or use the form below to adjust trip settings.

A From Via Augusto Imperatore, 30, 73100 Lecce LE, Italia

B To Platia Georgiou A.2.14, Patra 262 21, Grecia

Depart on: 08/09/2015

9:50 AM

Travel By: ☒ Walk ☐ Bicycle

☒ Airplane ☐ Car ☐ Rail ☐ Ferry ☐ Tram

Sort by: Time

Maximum walk: 100 km 100 km 1 km 2.5 km 5 km No limit

Plan Trip Reset Trip

Trip Solutions:

1: 11:46 am - 11:08 am

2: 11:46 am - 11:10 am

First Prev Next Last

Trip Summary:

Start: Tuesday, March 10, 2015 11:46 AM

End: Wednesday, March 11, 2015 11:08 AM

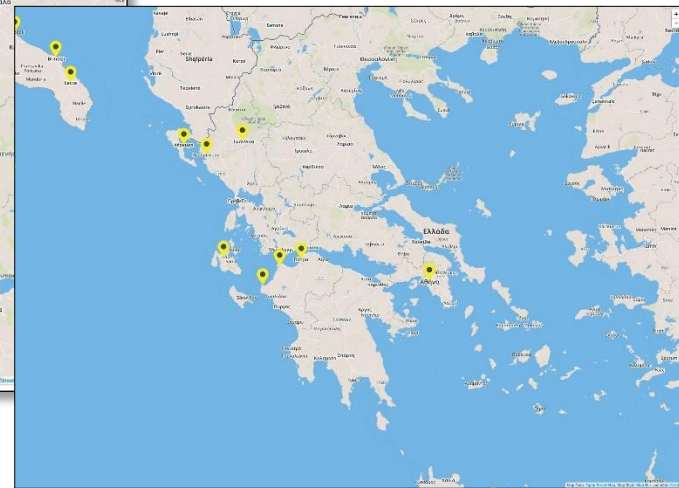
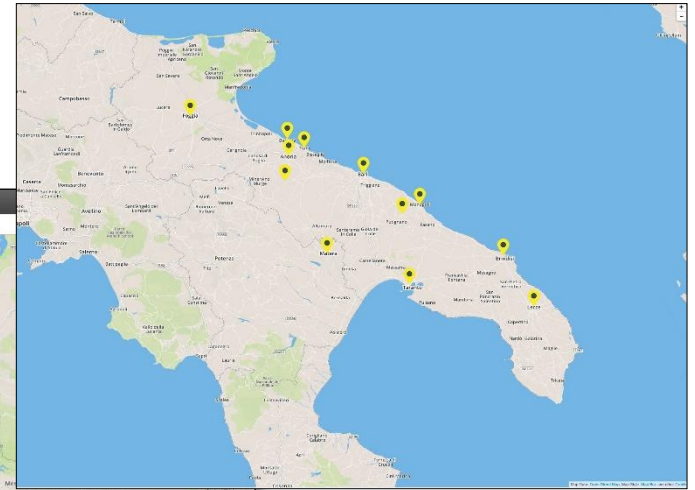
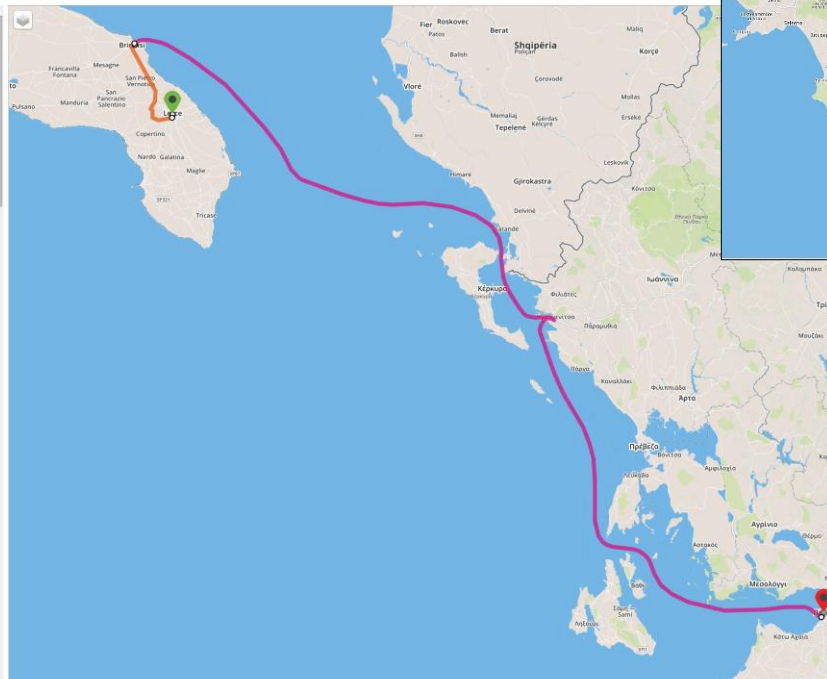
Time: 22 hr, 22 min

Total walk distance: 5.5 km

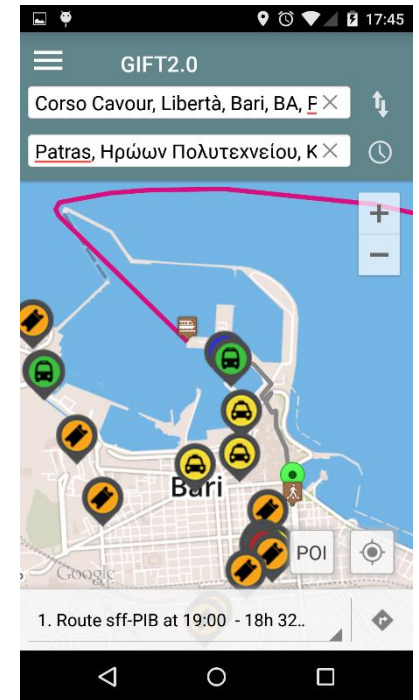
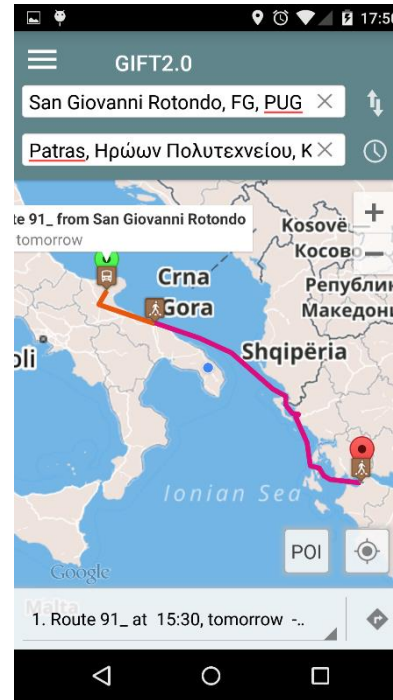
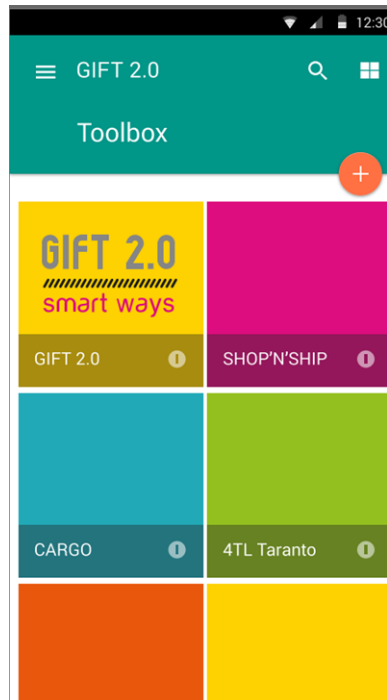
Transfers: 1

Fare: EUR 47.10

Walk 23 min - 1.8 km



Mobile APP

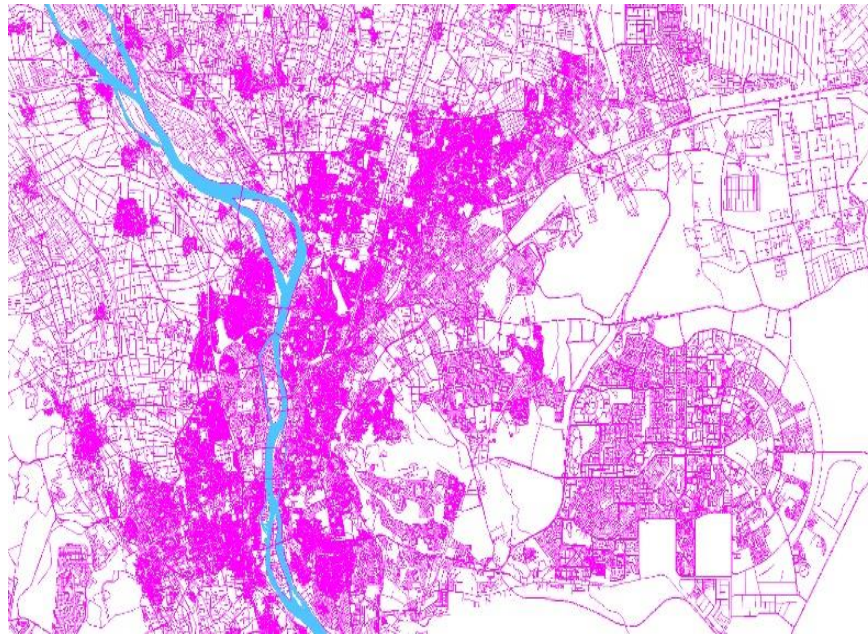




ITS Applications examples Cairo and Amman



Eco-routing (Greater Cairo)



Integration of eco-routing features in Fleet Management System (CEDARE)



Routing Features

- Travel Time Estimation
- Fuel Consumption Estimation
- CO2 Emissions estimation



Benefits from Driver/Routing Evaluation

- Reports for driver performance are produced.
- Reports incorporate fuel consumption and CO2 emission data and potential violations (e.g. routing violations).
- A decision support system for eco-driving is developed.



Safety & Enforcement (Amman)





ITS Benefits in EuroMed

- **Increased safety and security**
- **Reduced congestion and delays**
- **Reduced pollution**
- **Improved competitiveness of national/regional economies**
- **Improved quality of life**



- Intelligent Transport Systems
- Applications and Benefits
- **Strategy and Architecture**



EuroMed Strategic ITS Plan

- Will accelerate & coordinate ITS deployment in road transport, including interfaces with other transport modes in EuroMed Area.
- Will outline priority areas for action.
- For each area a set of specific actions and a clear timetable will be identified.



EuroMed Strategic ITS Plan

- Will set framework for procedures and specifications → mobilisation
- Mobilise the EuroMed States & other stakeholders.



EuroMed ITS Strategy – Objectives (1/2)

- Build ITS Framework to set the goals in digital transport strategy
- Create requirements to use modern information & communications technology (ICT) in transport



EuroMed ITS Strategy – Objectives (2/2)

- Create organizational/technical frame for digital projects in transport
- Support use of real time data
- Develop efficient planning of mobility for people and goods



EuroMed Preliminary ITS Architecture (1/2)

- EuroMed Strategic ITS Plan will require EuroMed Preliminary ITS Architecture to support EuroMed strategic objectives.
- To create ITS National Architectures for Member States, and for RTD projects.



EuroMed Preliminary ITS Architecture (2/2)

- Will provide common “language” throughout the EuroMed area so that implementation of integrated, inter-operable ITS can be planned.

ITS Objectives to be considered in EuroMed

Integrate advanced wired/ wireless ICT in transport infrastructure & vehicles to drastically improve:

- Safety & Security of transport networks
- Passenger/ freight information & mobility
- Energy and environmental footprint of transport
- Efficiency and productivity of networks & fleets
- Competitiveness of national economy

EuroMed Transport SUPPORT PROJECT



Project funded by
the European
Union

