

ROMA



Comune di Roma

TTS Italia – ITS Russia meeting Sustainable Mobility & Large Events Management in Rome

Rome – September 14, 2011



Ing. Fabio Nussio,
Mobility Agency of the City of Rome



**TTS Italia – ITS Russia meeting
Rome – September 14, 2011**



- **Based on Sustainable Mobility Strategic Plan - approved in 2009-10**
 - **Mass Rapid Transport System Expansion** Underground and Urban Railways, new tramway system.
 - **Completion of the road system** as well as PT priority, parking management and park&ride improvements.
 - **Fleet Renewal & Monitoring** public & private towards lower emissions with New Fast Lanes for Public Transport
 - **Sustainable Mobility** car & bike sharing, electric and micro-mobility, ...
 - **Technologies and ITS**
 - **Infomobility** for citizens and tourists
- ***International Co-operation : essential tool for best-practice exchange***



Short-term action strategies

While the process of infrastructures transformation is launched, **it is necessary to act immediately on the rationalization of the mobility system** through measures that require rapid viability with low or no infrastructure and low or medium impact execution.

- A. Reorganization of the primary road network
- B. Implementation Detailed Municipal Traffic Plan
- C. Reorganization of the network of the surface LPT, the tram network and corridors of mobility
- D. Review of the Rules
- E. Starting a strong action for Road Safety
- F. Development of Technological Innovations for the City mobility
- G. Development of second level services for sustainable mobility
- H. Distribution of goods
- I. Action for the Old Town

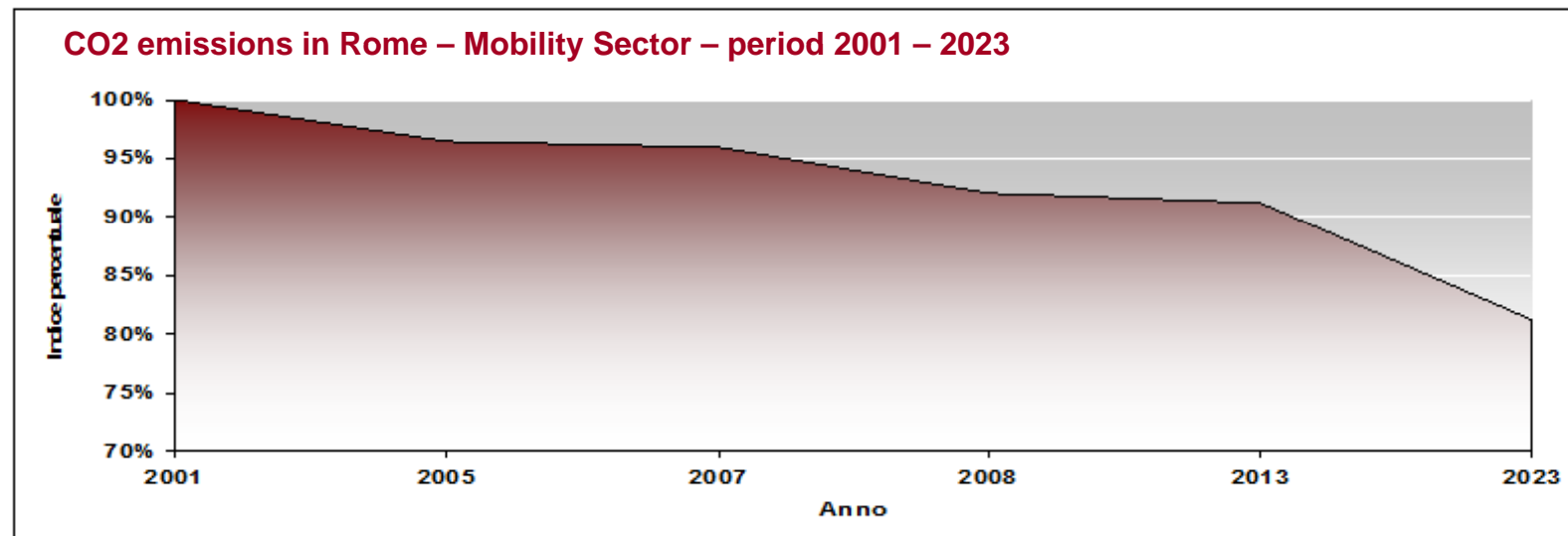
Sustainable Mobility Strategic Plan



Results for Peak hour

- ✓ 23% Reduction of the travel time on the city road network;
- ✓ 15% Increase of the modal split towards PT;
- ✓ 11% reduction of private vehicles movements.

A careful eye on climate change and air quality





Rome Mobility Center: the systems

Systems →

- Traffic signals
- Video Surveillance Cameras - traffic
- AVM – Automatic Vehicle Monitoring
- Electronic gates
- Traffic flows measurement stations
- VMS – Variable Message Signs
- UTT – Urban Travel Times
- Automatic detection of overtaking offence
- Monitoring of red light violation
- Bus Lanes Monitoring
- Speed Monitoring System (SICVe)

Data Analysis

- SIM (Mobility Informative System)
- SIT (Geographic Information System)

Infomobility

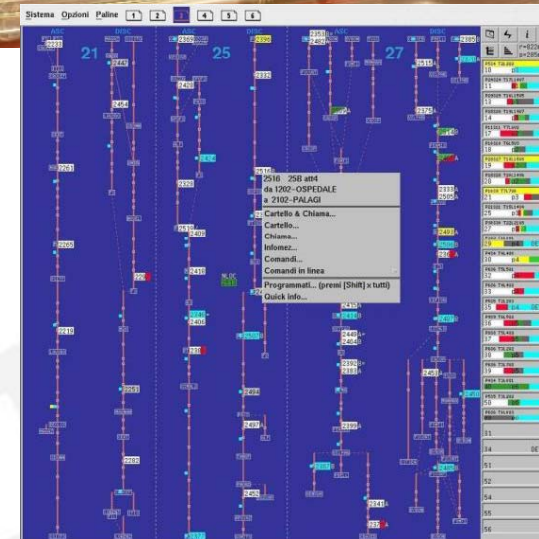
- Infopoint – Journey planner
- Moby – On board bus information
- Timetables of bus and tram
- *Atac mobile*





The Rome model for public transport

- The Rome Mobility Agency manages the bus service contracts performed by the Bus Operators
- A new type of contract has been assigned for 8 years to the Bus Operator **Roma TPL** for 450 buses, 28 M km/year, i.e. 20% of the Bus service in Rome, mainly in the peripheral net
- Monthly payments to the Bus Operator is based on an innovative AVM service certification data
- AVM System (provider: Thetis):
 - Control room
 - 450 high level Onboard systems including TV video surveillance, passenger counters, onboard announcements, TV movie and advertisement screens
 - 7 depot systems
 - WiFi and 3G data communication

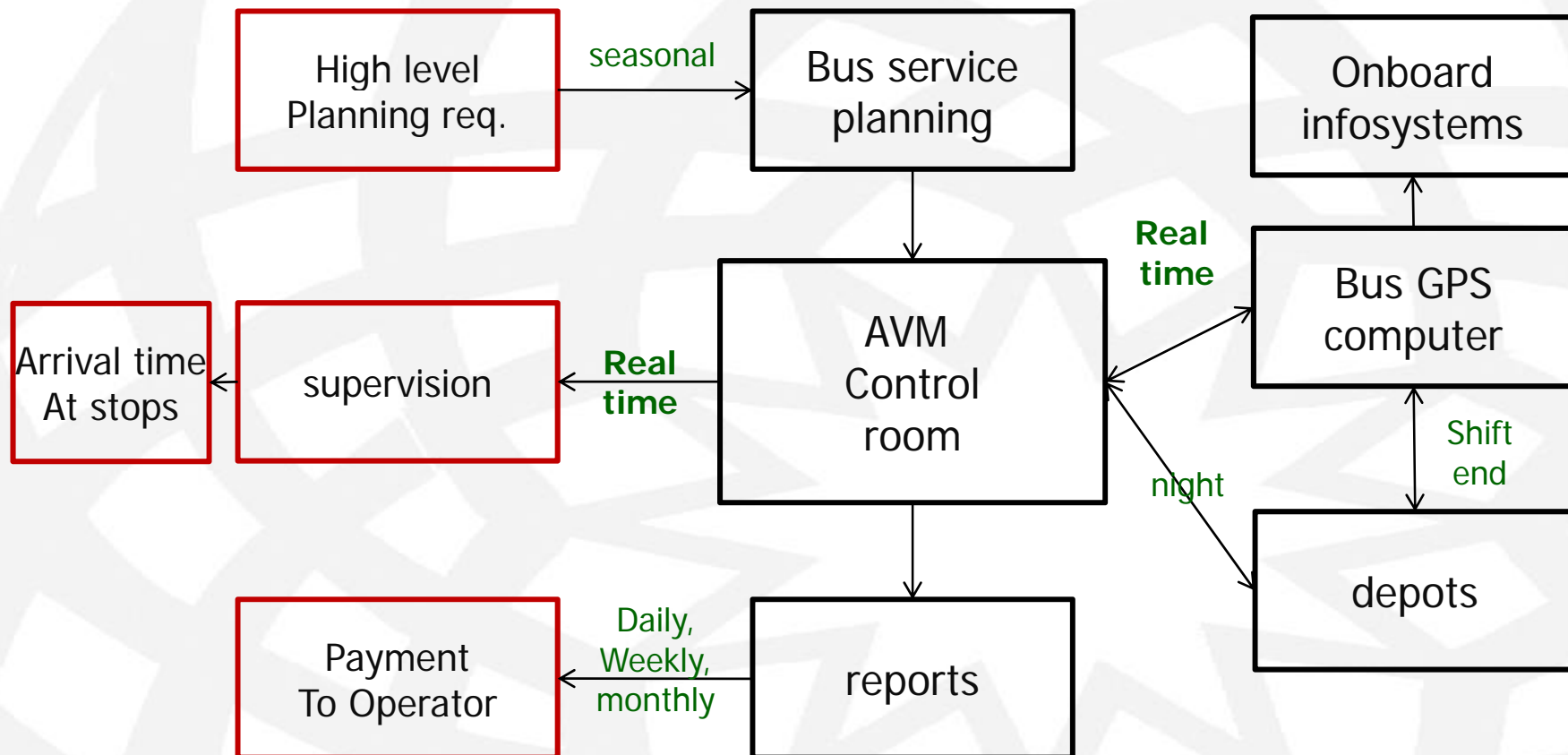




The Rome model for public transport

Rome Mobility Agency

Bus Operators: ATAC & Roma TPL
(AVM on 2200 + 450 buses)





Roma TPL onboard systems

Onboard computer
And video surveillance



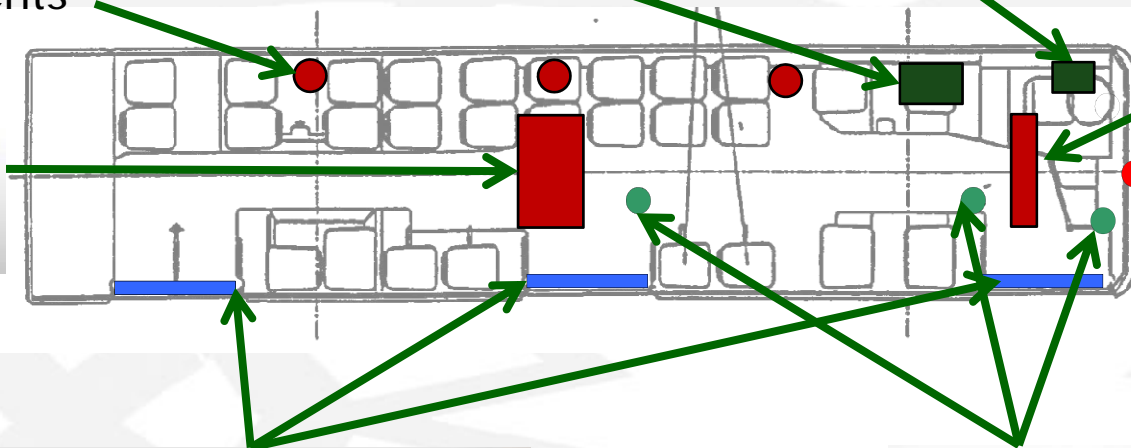
Driver terminal



Audio
announcements



Multimedia
system



LED Info display



Front
TV camera



Passenger counters

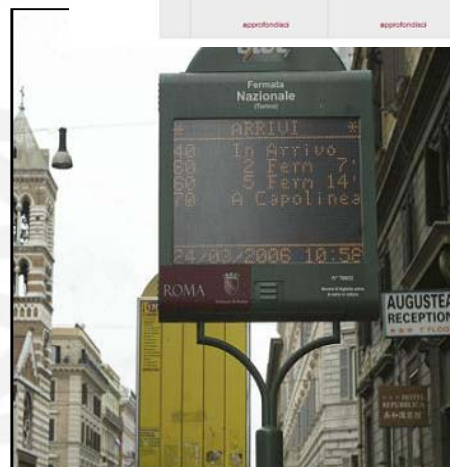


3 internal
TV cameras

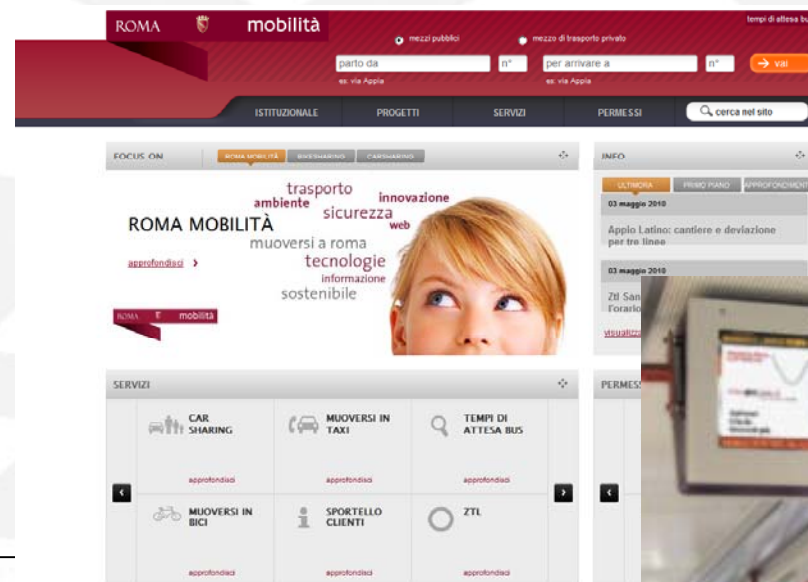


DIFFUSION OF MEDIA SERVICE:

- Web Sites (5.5 Mil pag/month)
- Electronic Bus Stops (300)
- On Board Bus Information (400 vehic.)
- Newspaper page "METRO"
- Roma Radio (The Tube station) & Tele News Metro (underground TV)
- Awareness Campaigns
- ATAC Mobile & Social networks



trasporti & mobilità





ATAC Mobile solution: infomobility application on mobile device (internet compatible)

The mobile device is a direct communication channel between Rome and citizens, tourists, city users, etc.

Free of charge! (pay only the connection with your TLC operator)

<http://atacmobile.it>





Old Town is now a Limited Traffic Zones with electronic gates

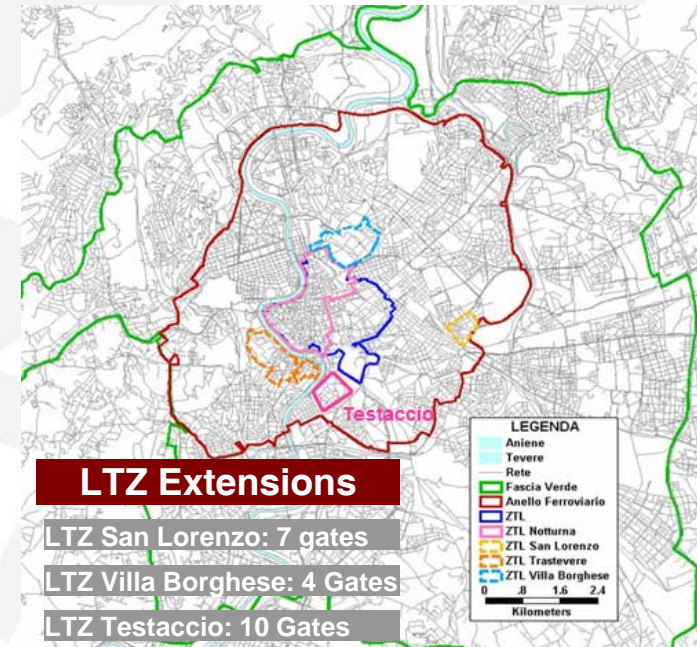
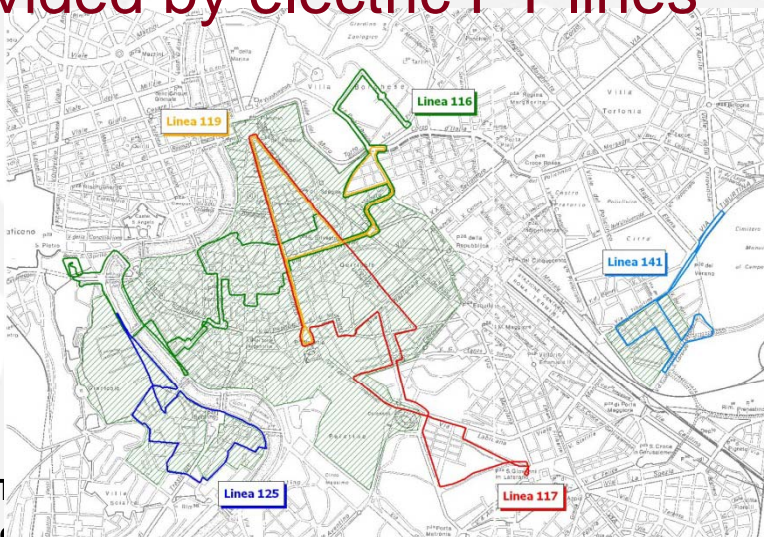
Old City Centre: 23 access gates



Trastevere: 12 access gates

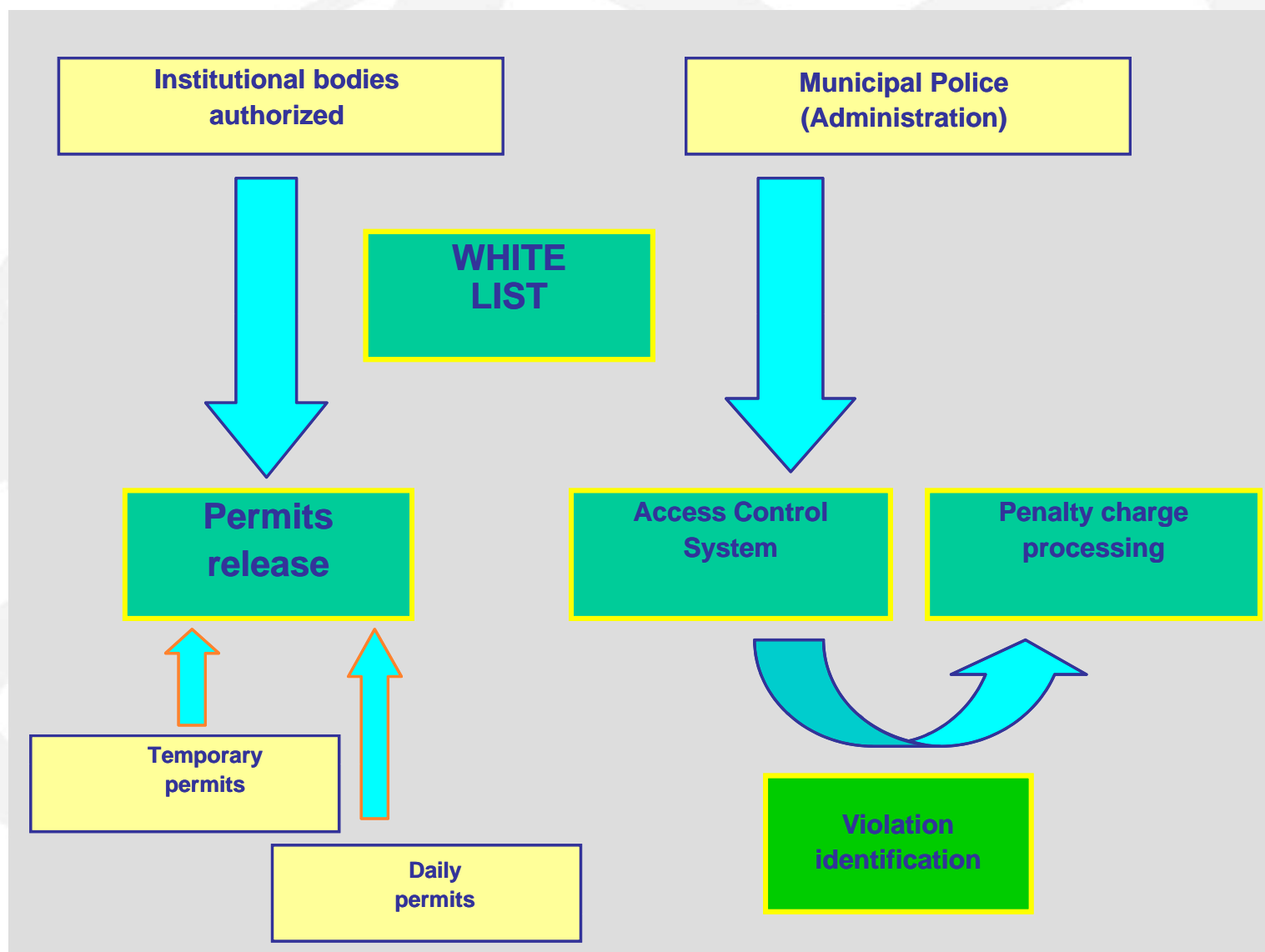


City-centre is already provided by electric PT lines





ACS scheme process





Yearly permits charge – only authorised categories

■ Reduced Mobility people:	15 €
■ Freight delivery:	550 €
■ Private taxi	55 €
■ Resident	55, 300 €
■ Non resident (private auth.)	550 €
■ Taxi	55 €
■ Public Transport	free
■ Others:	
■ public utilities	550 €
■ coaches	daily charge, 30-150 €
■ <u>Plus RP per day</u>	
■ Daily permit for authorised	20€/day



ROMA atac

Iride² Trastevere
Sistema di Controllo Accessi

Home Navigation Profile Info

Automatic plate number recognition process (Municipal Police user interface)

Riconoscimento Segnalazioni

> Ricerca

Identificatore Segnalazione (ID): 198922

> Correttore Luce

UNI certified processes (organization of standard):

- Management (communication, classification,...)
- Images authentication
- Filing system

Characters reliability: support to operators

Data
2006/04/04 00:48:06

Varco
Via Lungara alt. S.F. di Sales

Elaborazione:
ta dal varco

Tipo Veicolo
Autoveicolo
Motoveicolo
Rimorchio
Ciclomotore

Nazionalità

Report

Controllo Sintattico
Abilitazione Controllo Sintattico

CR 853

CR 853

Targa Letta

Targa

Conferma

Annula

Istituzionale

Motoveicoli



First reactions to the Electronic Gates...

Riconoscimento segnalazioni

Visualizza Stampa Regola Gamma Salva l'immagine Esci

Trova... Vai alle ore... Dati proprietario

Marca:

Modello:

Tipo: Autoveicolo

Nazione:

Codice OBE: 00000000 Fattore di correzione gamma: 10000

Applica Gamma Elimina Gamma

OBE Info

Tipo: 00 - Non classificato Sintaticamente corretta In lista nera tessere 99 - 99

Dati segnalazione: progressivo, data, varco, tipo

57817787 29/04/2002 7.58.12 Passeggiata di Ripetta

Stato Elaborazione

Immagine proveniente dal varco (non ancora controllata)

Precedente Cancella Istituzionale Cancella violazione Conferma violazione

Start BTele MopUPS Professional Editi... SIRIO - Gestione ZTL



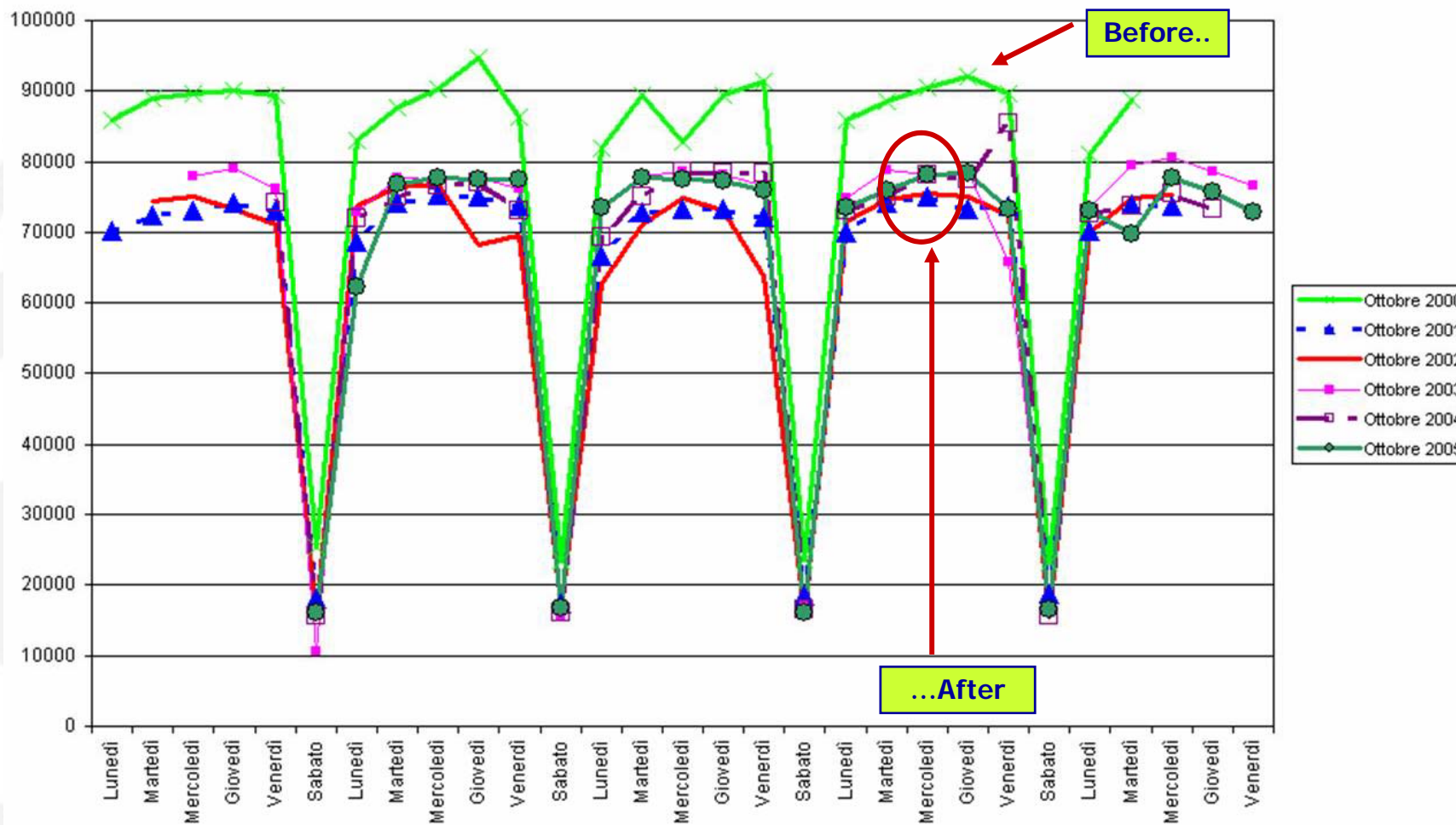
October 2001 – 2005 daily access demand and comparison with October 2000 estimated demand

Access flows reduction

-18%

Daily average accesses

70.000





Some ACS+RP main results

Access vehicle flows:	- 15/20%
Average speed (inside) :	+ 4%
T.P. passengers (local) :	+ 5%
Two wheels (access):	+10/20%
Residual illegal transit:	10-15.000 /wk
Pollution concentration	

local reductions, partly compensated by
the “two wheels” and afternoon effect”

Robust technology (Availability = 99%, Faults = 1%)

Night peaks in leisure areas: part of historical City
Centre, Trastevere, San Lorenzo



POLICY

- **1989: Decision to create limited traffic zone (ZTL)**
- **1994: Enforcement of traffic zone**
- **1998: Pay Access Introduction**
 - Payment for permit: 340 EURO
 - Residents free, Business hours, Uniform user profile for authorised
- **6/2000: Access system approved by Central Bodies**
- **3/2001: Official approval for service operation by Ministry of Public Works**

TECHNOLOGY

- **1996: Realisation of the access control system prototype**
 - 10 gates, Control centre (basic functions), Investments: 1 Meur
 - **1996-1998: System s.w. development,**
 - Technological demonstration (400 equipped cars)
 - Investments: 1,5 Meur
 - **1999: Design & procurement of the full system**
 - 22 gates (29 lanes), 35.000 on board unit and smart card, Control centre, Investments: 4.8 Meur
 - **8/2001: e-gates switched on to test activities**
 - OBE and smart-card distributed to residents and handicapped
- **October 1st, 2001: Electronic enforcement against violations switched on**



ROMA CAPITALE

The European Co-operation in ACS & RP

www.curacaoproject.eu

www.progress-project.org



CURACAO



CIVITAS
Cleaner and better transport in cities
CATALIST



THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

CURACAO Promoting progressive pricing **CASE STUDIES**

Rome

Introduction
The city of Rome is home to some 2.8 million people, 1.85 million cars and more than 800,000 motorcycles and motor scooters. The main mode of choice in Rome is 50% private vehicles, 15% PTW, 33% public transport and walking/cycling. The pressures of so many people and vehicles have created traffic congestion and environmental degradation.

Why was urban road use or charging introduced in Rome?
The pricing policies in place in Rome include both payment for congested parking and payment for accessing certain areas of the city. The main objective pursued since the implementation of access policies in Rome, going back to the late 1980, has been the protection of the unique cultural heritage of the city from the impacts of traffic pollution. The turning point was the establishment of limited traffic zones (LTZs) with "electronic gates" in October 2001. LTZs are used to restrict vehicle access to residents and essential users (many of whom must pay a yearly charge) and are supported by paid parking schemes in surrounding areas in order to foster access to cars, increase the supply of public transport as much as possible. The revenues must be used to address the environmental externalities rising from traffic pollution and to invest in new public transport infrastructure.

What are the features of the Rome LTZs?
The scheme implemented in Rome foresees that in principle people or residents working inside the LTZ area can have access by car if they register and purchase a permit. There are a number of exemptions, including for local public transport, taxis and disabled people. The historical city centre LTZ (Zona Centro Storica) came into effect in October 2001, encompasses 23 gates on access roads to the city centre. These optically detect the plates of vehicles through automatic plate number recognition (APNR) technology: a picture of the plate is taken and sent to the control centre.

Access Management

Access management means the management of all vehicles entering a specific area in order to improve mobility for all the users. It means control of private vehicles but also improving the access for public transport vehicles with the overall aim of reducing congestion and pollution and at the same time improving public transport service and the use of sustainable means of transport.

The CIVITAS CATALIST project offers cities the opportunity to apply for funding to participate in a city-to-city exchange. See back page for details.

CIVITAS and better transport in cities

City Exchange: Access Management

Access Management

Access management means the management of all vehicles entering a specific area in order to improve mobility for all the users. It means control of private vehicles but also improving the access for public transport vehicles with the overall aim of reducing congestion and pollution and at the same time improving public transport service and the use of sustainable means of transport.

The CIVITAS CATALIST project offers cities the opportunity to apply for funding to participate in a city-to-city exchange. See back page for details.



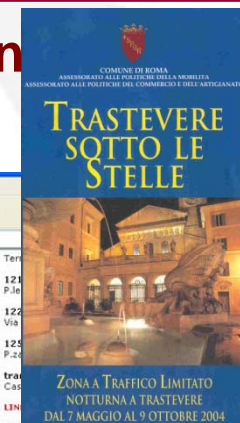
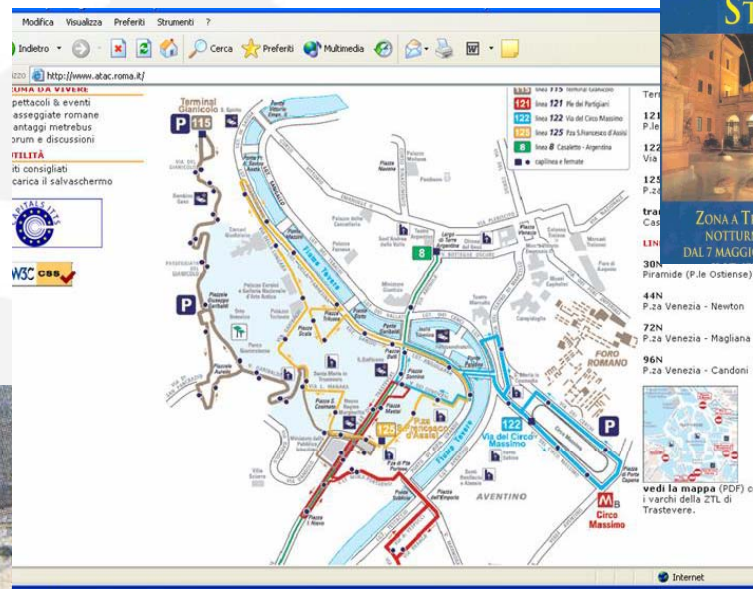
LTZ “Trastevere”: an Integrated Approach

Information

LTZ – electronic gates



New LPT Lines



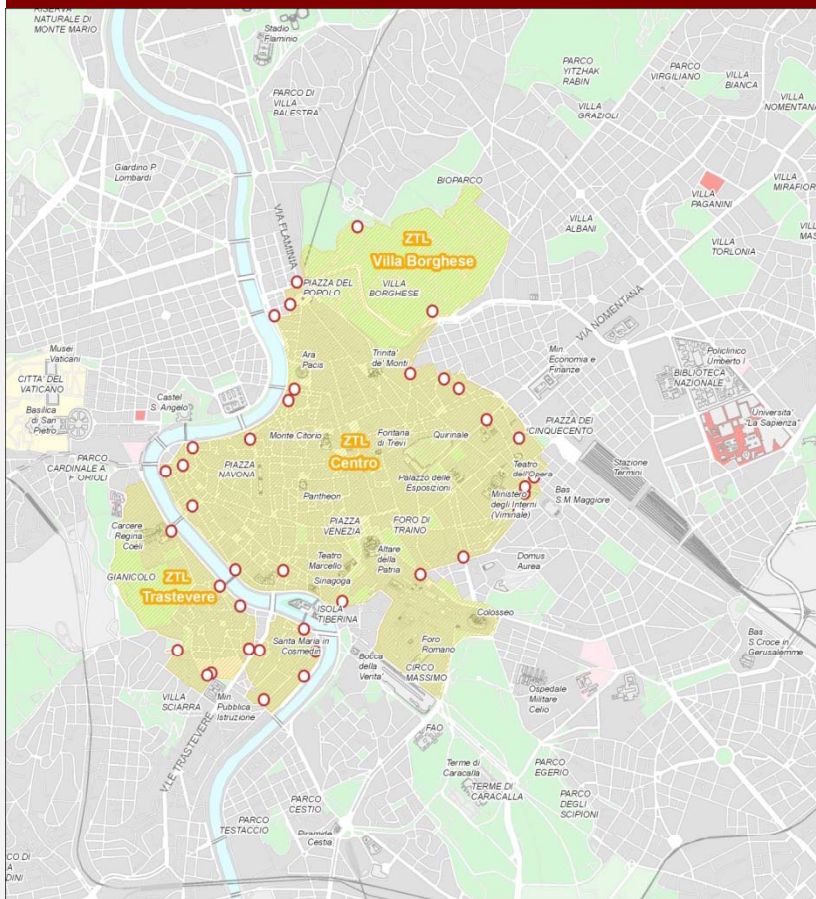
New Parking - 221 slots



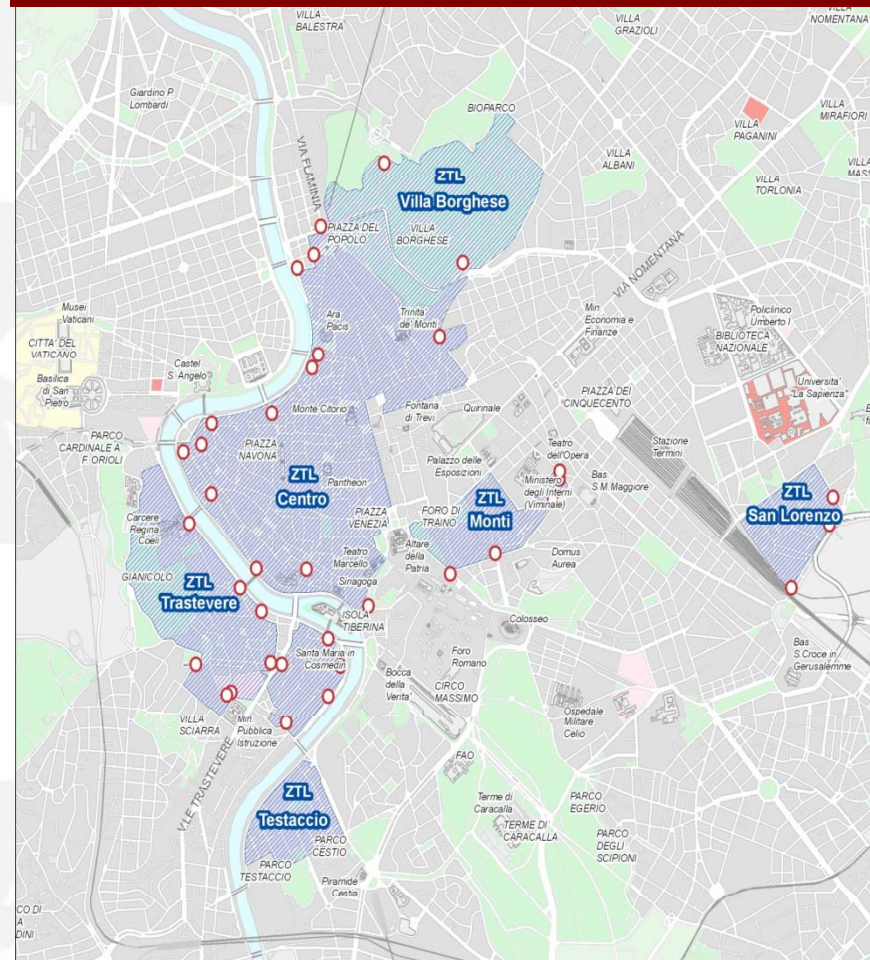
LTZs day and night in Rome: undoubtedly a success...

...But how to inform city users?

- **Daily LTZs: historical centre, Villa Borghese, Trastevere**



- **Nightly LTZs: centre reduced, Monti, Villa Borghese, Trastevere, San Lorenzo, Testaccio**





A service for city users: Mini - VMS in “old” and “new” gates





Traffic restrictions in ZTL's

Information on timetables of the various ZTL (Limited Traffic Zones) in Rome.

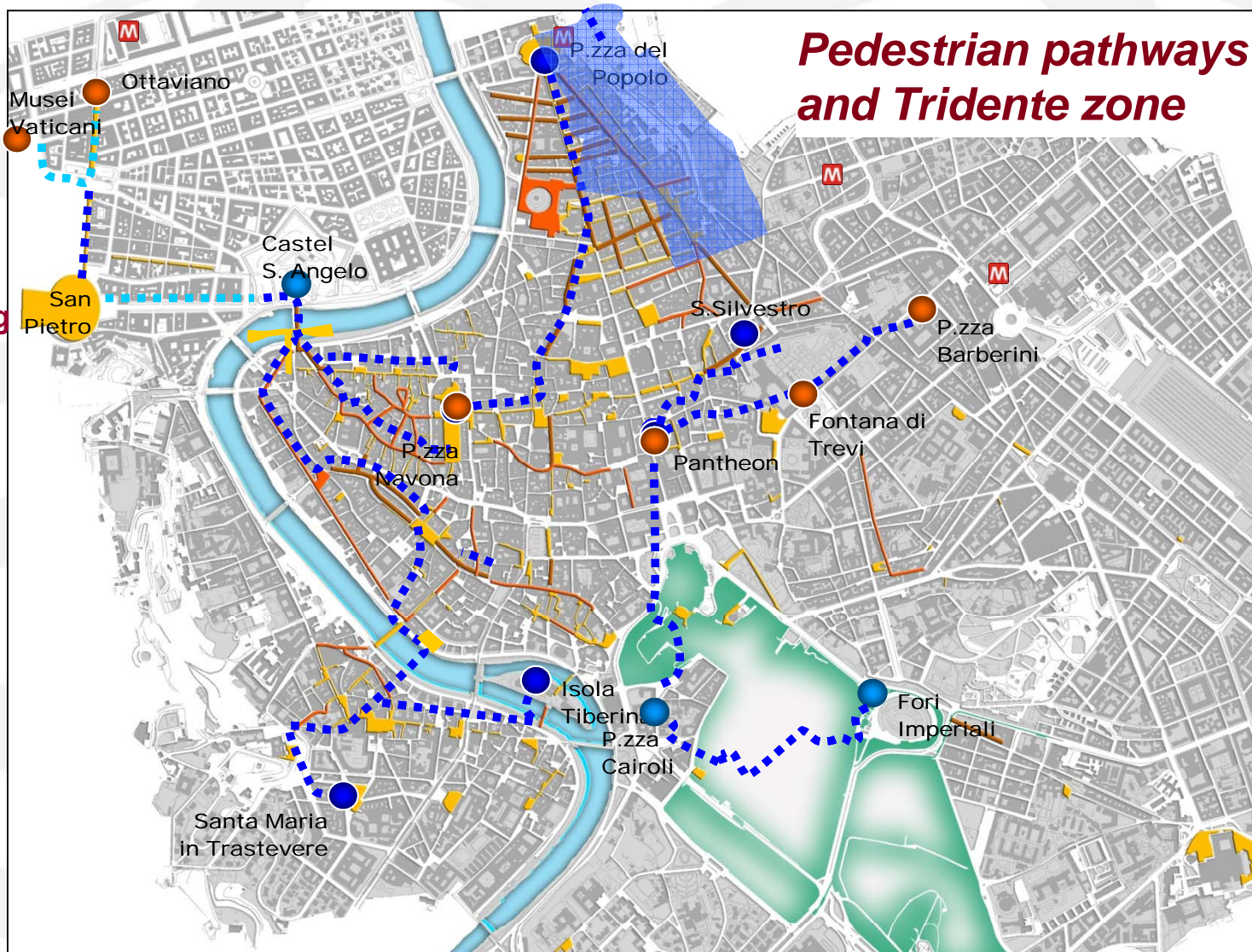
The timetable information access is also grouped according to the day of the week or per ZTL, providing real-time information on the status of the individual gate in the different Zones (whether or not they are active at that time).





Short-term strategy for pedestrian OLD TOWN

1. Definition of areas and routes closed to traffic – avoidance of flow traffic;
2. Review of regulation for access and parking of vehicles for mobility of people and goods
3. Development of vehicles sharing systems (cars, vans, bicycles)
4. Progressive introduction of electric and hybrid vehicles.
5. Realization of pedestrian areas and pathways





Indirect benefit of ITS: Bus Lanes Monitoring



To improve surface public transport service, ATAC is implementing ITS technologies for **removing and fining vehicles** that are not allowed to travel **on bus lanes**.

The first **three stations** have been installed: the used system is similar for the automatic control of LTZ access.

System improvement will enable the application of this control also to moped and motorcycles.

Via dell'Amba Aradam



Via Nazionale – Largo Magnanapoli



Via Nazionale – via Milano





Indirect benefit of ITS: UTT (Urban Travel Times)

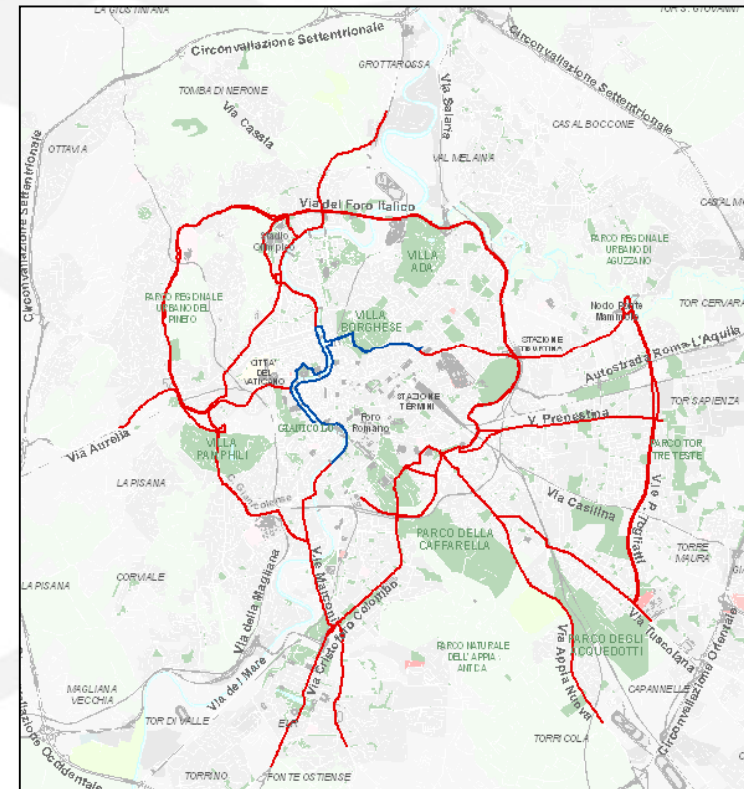


OBJECTIVES

- **Monitoring travel times** in order to **evaluate the level of service**
- Offering traffic **real time information** through different distribution channels

UTT (Urban Travel Times) monitoring system of travel times in urban context

- **130 Km** monitored in the city
- Travel times on **12 routes**
- Data updated every **5 minutes**





UTT (Urban Travel Times): what is?

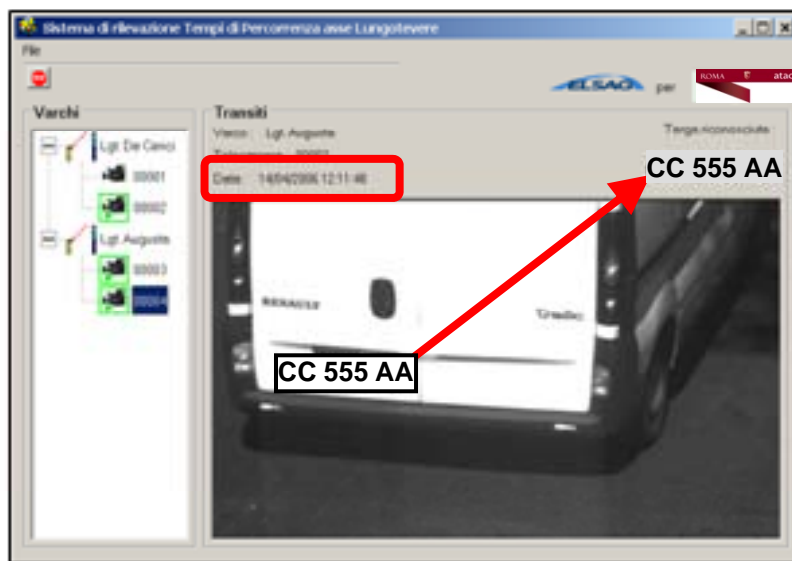
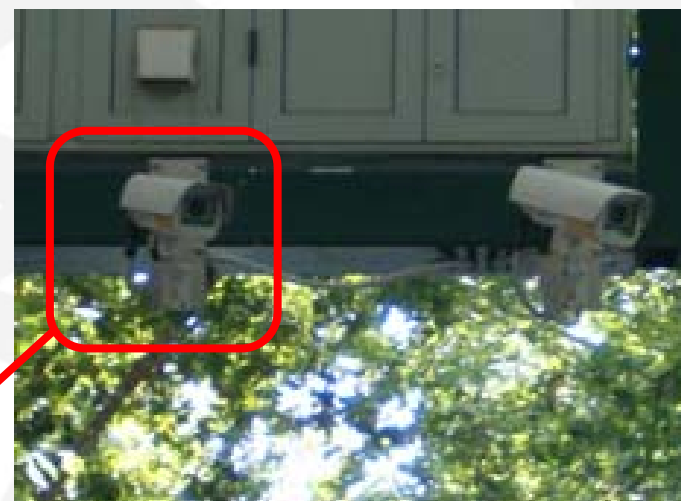


PLATE RECOGNISED
AND TIME RECORDED
AT THE ENTRY SECTION

Targa: CC 555 AA
14-apr-06 11:50:39

PLATE RECOGNISED
AND TIME RECORDED
AT THE EXIT SECTION

Targa: CC 555 AA
14-apr-06 12:11:48

**TRAVEL
TIME
21 mins
9 secs**

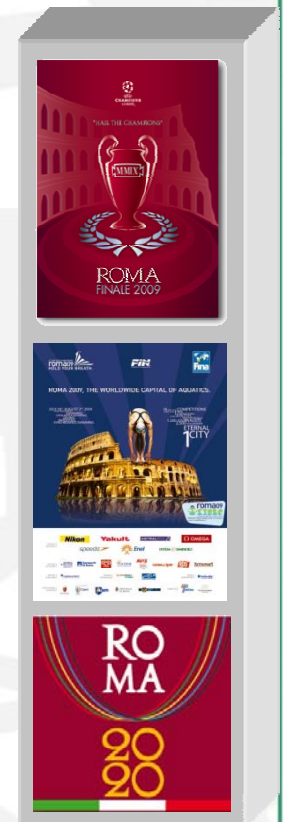


Management of Large Events

■ Planned Large Events:

- Great Jubilee Year 2000
- Leisure Events
- Sport events:
 - UEFA Champions League Final – Rome 2009
 - 13th FINA WORLD CHAMPIONSHIPS – Rome 2009
- John Paul II's beatification (May 2011)
- Roma 2020 Olympic Games Candidature

■ Unplanned events: John Paul II's death and funerals (2005)





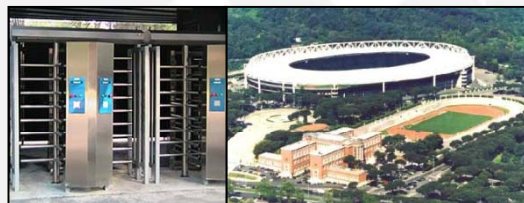
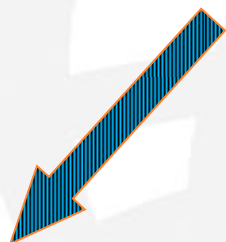
Champions League Final: Champions Card



Personal Data



Loaded onto
the chip of the
card



✓ Stadium



✓ Public Transport
Free access for 3 days



✓ Capitoline Museums
Free access



the IBOCS project: extension of ITS-TAP for the Olympic Buses



IBOCS: Intelligent Bus Operations and Control System



STADIUM Project: basics



ITS FOR LARGE EVENTS

The stadium project
(Smart Transport Applications
Designed for large events with Impacts on
Urban Mobility) aims at improving
the performance of transport services and
systems made available for large events
hosted by big cities.

The project demonstrates Intelligent
Transport System (ITS) applications
at three major events:
the South Africa World Cup (2010),
the India Commonwealth Games (2010)
and the London Olympics (2012).




Implementation & results

Local demonstration and evaluation will prove the usefulness of innovative travel management schemes supported with state of the art technologies.

An integrated handbook to support all those involved in the organisation of transport services for large events will be published.

A reference group of experienced cities will cooperate with a group of cities that are currently preparing for the organisation of major events.

stadium Handbook

Over and above the activities geared to the demonstrations, the ultimate objective of this project is to provide Local Authorities responsible for transport in candidate cities to host large events with a set of guidelines and specific tools to implement the required traffic management system.

Such a tool will feature the function of an interactive data base as a decision support system at different stages of the decision/planning/implementation process.



stadium demonstrations

South Africa • Soccer World Cup 2010

Due to the relevance of the minivan transport sector (para transit) in South Africa, the demonstrator will aim to improve its performances through the development of an ITS application supporting a demand-responsive transport service (DRT). The DRT platform will be integrated with a system able to provide information for taxis and buses as well as passengers and will be open to future integration, e.g. with ticketing, multi modal systems, terminal management etc.

The proposed solution will be implemented on a fleet of minivan taxis and demonstrated in Cape Town during the FIFA 2010 World Cup. This will provide the municipality and the Department of Transport the possibility of integrating the taxi service with local public transport using a telematics tool for the management of the service. This demonstration will open a wide range of possibilities to improve the local transport system providing an innovative technological control centre.

India • Commonwealth Games 2010

The India demonstrator will be deployed and tested during the XIX Commonwealth Games (Delhi 2010). This involves the planning of Public Transport services, in particular bus transport and its integration with feeder services consisting of auto rickshaws (para transit). The bus services will be monitored in real time via interfaces with GPS positioning systems.

London • Olympic games 2012

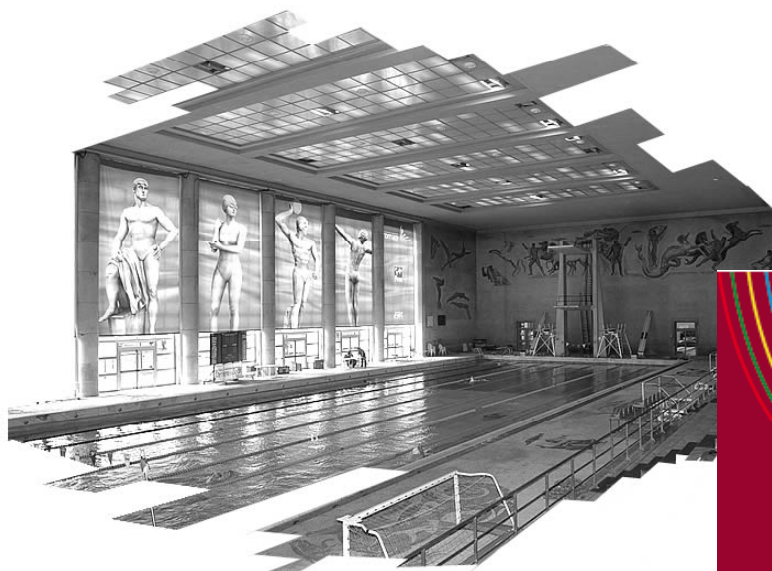
The London demonstrator will be deployed and operationally tested during the Games of the XXX Olympiad in 2012. The system is based on visual scene analysis tools to support the monitoring of localised passenger and vehicle congestion and the propagation of congestion across and within multi-modal transport networks.

The proposed demonstrator is to have elements deployed to a number of locations within a cross-section of the London transport system.



ROMA CAPITALE

The Olympic City – Rome 2020



***A city hosting the Olympic Games,
Always remains an Olympic City.***

ROMA



Comune di Roma

Thank you for your attention !



Ing. Fabio Nussio,
Responsible of International Cooperation
Service Mobility Agency for the City of Rome
00143 Roma - Via Vigna Murata, 60
Tel.: (+39) 0646956854, Mobile (+39)-348-8814800,
e-mail: fabio.nussio@agenziamobilita.roma.it
website: www.agenziamobilita.roma.it



TTS Italia – ITS Russia meeting
Rome – September 14, 2011