



# The New Mobility Centre in Rome: from traffic to integrated mobility management

**CiViTAS**

Cleaner and better transport in cities



**Event** CIVITAS Forum, Workshop II - Mobility centres and their advantages

**Date:** October 4, 2007

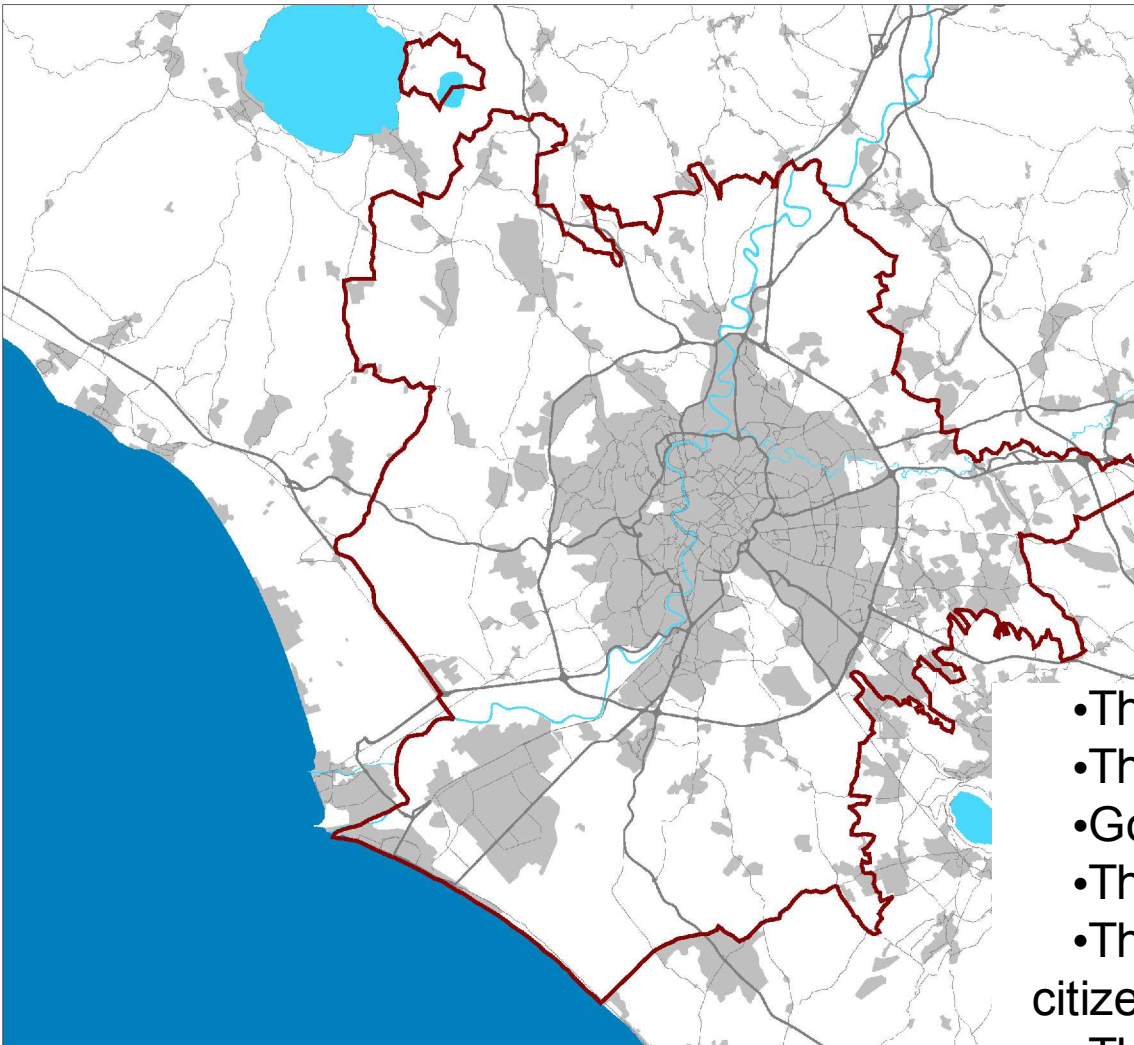
**Location:** Kaunas (LTU)

**Speaker, Organisation:** Fabio Nussio – Head of International Affairs – ATAC, Mobility Agency of the City of Rome



THE CIVITAS INITIATIVE  
IS CO-FINANCED BY THE  
EUROPEAN UNION

# The context: Rome



Municipal Area	km 1.285
Population	2.800.000
Road Network	km 5.000
Vehicles	2.400.000
cars	1.900.000
2 wheels	400.000
goods delivery	150.000
Daily Trips	6.000.000
Peak-hour Trips	600.000

- The historic and cultural heritage
- The status of Italian Capital City
- Government and Institutions
- The Vatican City
- The Attitude (70 vehicles/100 citizens)
- The Tourists (>23 millions per year)
- Tourist coaches: 200.000 per year

# Mobility Agency: the Mission

Controlling, monitoring and regulation of public and private mobility

Assets Ownership and Management

Parking Design, Planning and Management

Design and Planning of Private and Public Networks

Managing Ticketing, Authorisations and Permits

Planning and Managing Mobility of "Great Events"

Communication & Infomobility

Sustainable Mobility Policies & Environment





## Rome: The impacts of the mobility problems

### Traffic inducing :

- Congestion
- Pollution
- Safety risks

### Impacting on:

- Health
- City attractiveness
- Economic growth
- Quality of life



## From the problem to the solution: the Management of Mobility issues.

- **Traffic Demand Management** (Urban traffic Masterplan, PT priority, access limitations, area pricing)
- **New “Hard” Mobility Infrastructures** (Underground and Urban Rails)
- **New “Mobility Corridors” and Reserved Lanes** (Surface Transport)
- **Fleet Renewal & Monitoring** (bus and cars, towards lower emissions)
- **Sustainable Mobility (EC CIVITAS Initiative) package** (car sharing, car pooling, mobility soft measures, awareness)
- **Technologies and ITS** for mgmt, monitoring & enforcement



# Managing Traffic – Restriction Zones



Municipality Area – 1285 km<sup>2</sup>  
Emission Control “Blue Label” (yearly)

External Ring (GRA) – 344 km<sup>2</sup>  
Tourist Coaches Regulation

Green Belt – 154 km<sup>2</sup>  
Pollution emergencies,  
Multi-modal nodes, Park&ride

Rail Ring – 48.4 km<sup>2</sup>  
Emission restrictions, Pay parking schemes

LTZ – 5.5 km<sup>2</sup>  
Stop to all vehicles (except permit holders)

Pedestrian – 0.5 km<sup>2</sup>  
Zero Emission Area (walking & electric)



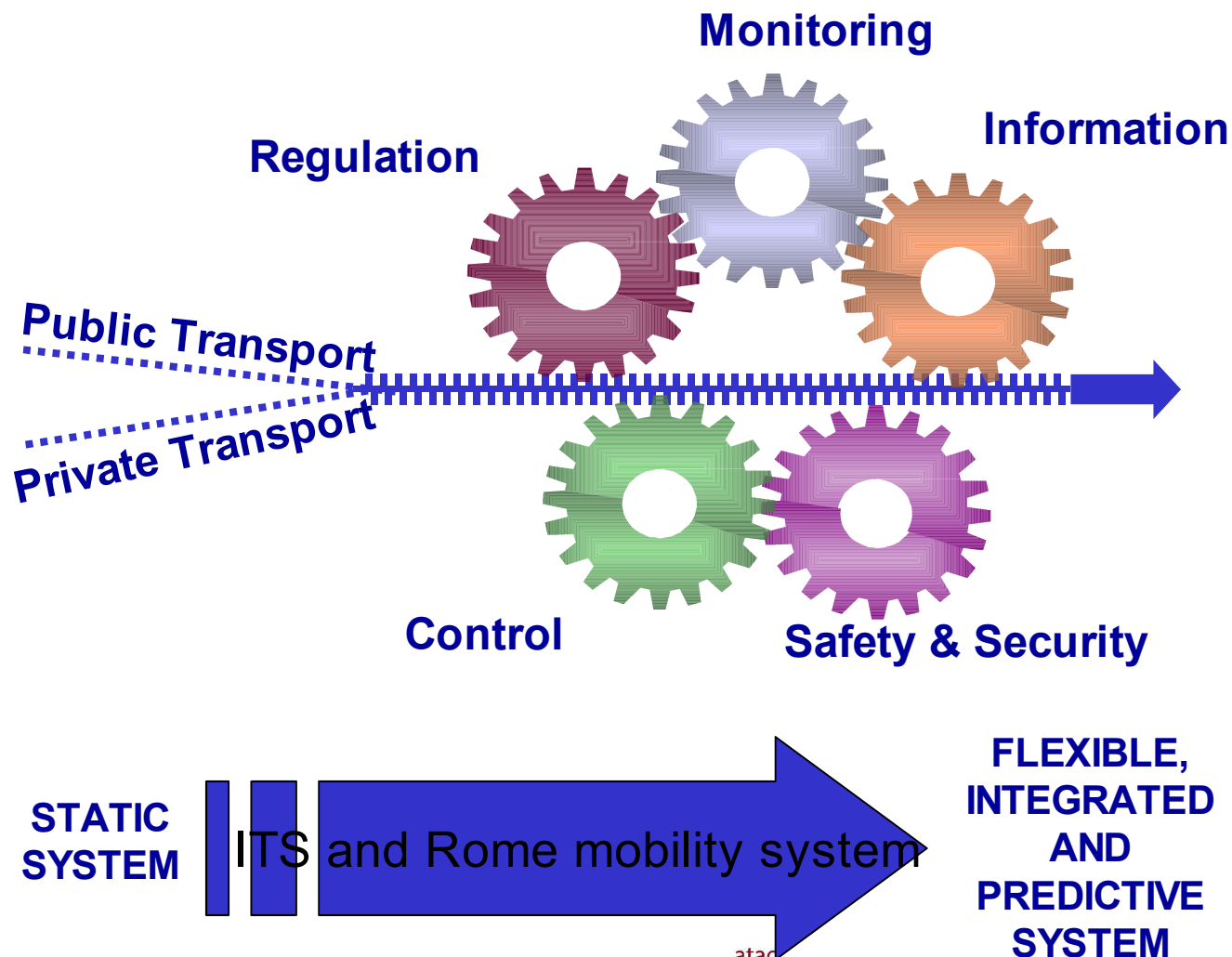
# Evolution of PT infrastructural offer

Investment Plan of 3.000 MEuro until 2011, 9.200 until 2020

	2006	2012	
■ Urban railways (km)	112	123	(+10%)
■ Underground (km)	36	47	(+30%)
■ Bus Corridors (km)	13	130	(+900%)
■ Rail Network (km)	206	395	(+190%)
■ Stops (n.)	365	586	(+160%)
■ Seats/km (ml)	5.8	8.2	(+140%)



## ITS technologies: Rome Mobility Centre





## Integration process: Business Intelligence (BI) for Mobility

- Business Intelligence (BI) system for Public and Private Mobility. Architecture composed by:
  - Data Warehouse Database
  - OLAP (analysis infrastucture)
  - Data Mining
  - Reporting
  - Interfaces among different systems
  - Administration & management
- Open, flexible, distribuited, scalable architecture based on open-source sw;
- Able to guarantee the data-warehouse integration with the specific layers of the geographic information system (GIS).



## Integration: the new Rome Mobility Centre

- ✓ **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
- ✓ **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*
- ✓ **Development** →
  - Automatic detection of overtaking offence
  - Monitoring of red light violation
  - Bus Lanes Monitoring
  - Speed Monitoring System (SICVe)





## Electronic gates subsystem

### Historic City Centre: 23 access gates



1<sup>th</sup> October  
2001

### Trastevere: 12 access gates



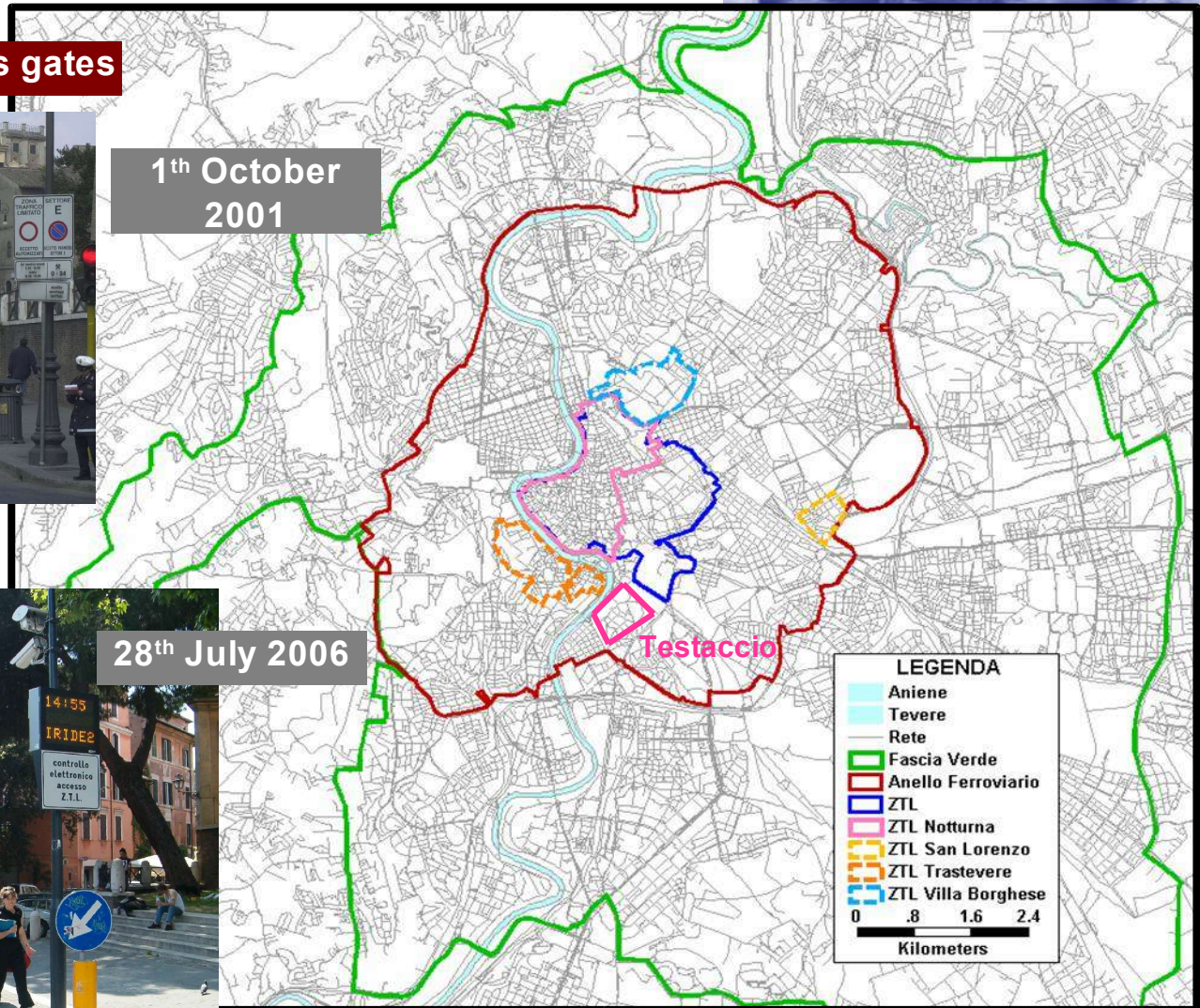
28<sup>th</sup> July 2006

### The LTZ

LTZ San Lorenzo

LTZ Villa Borghese

LTZ Testaccio





## LTZ – IRIDE 2: web-user Interface

ROMA atac

Iride<sup>2</sup> 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

3/787

CR 853V

Data  
2006/04/04 00:48:06

Varco  
Via Jungara alt. S.F. di Sales

Elaborazione:  
Data dal varco

Tipo Veicolo  
Autoveicolo  
Motoveicolo  
Rimorchio  
Ciclomotore

Nazionalità  
I

Report

Controllo Sintattico  
Abilitazione Controllo Sintattico

CR 853  
CR 853

Targa Letta  
Targa

Conferma  
Annulla

Istituzionale  
Motoveicoli

UNI certified processes  
(organization of standard):

Management (communication,  
classification,...)

Images authentication

Filing system

Characters reliability:  
support to operators



## LTZ Historical Centre: Access flows

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

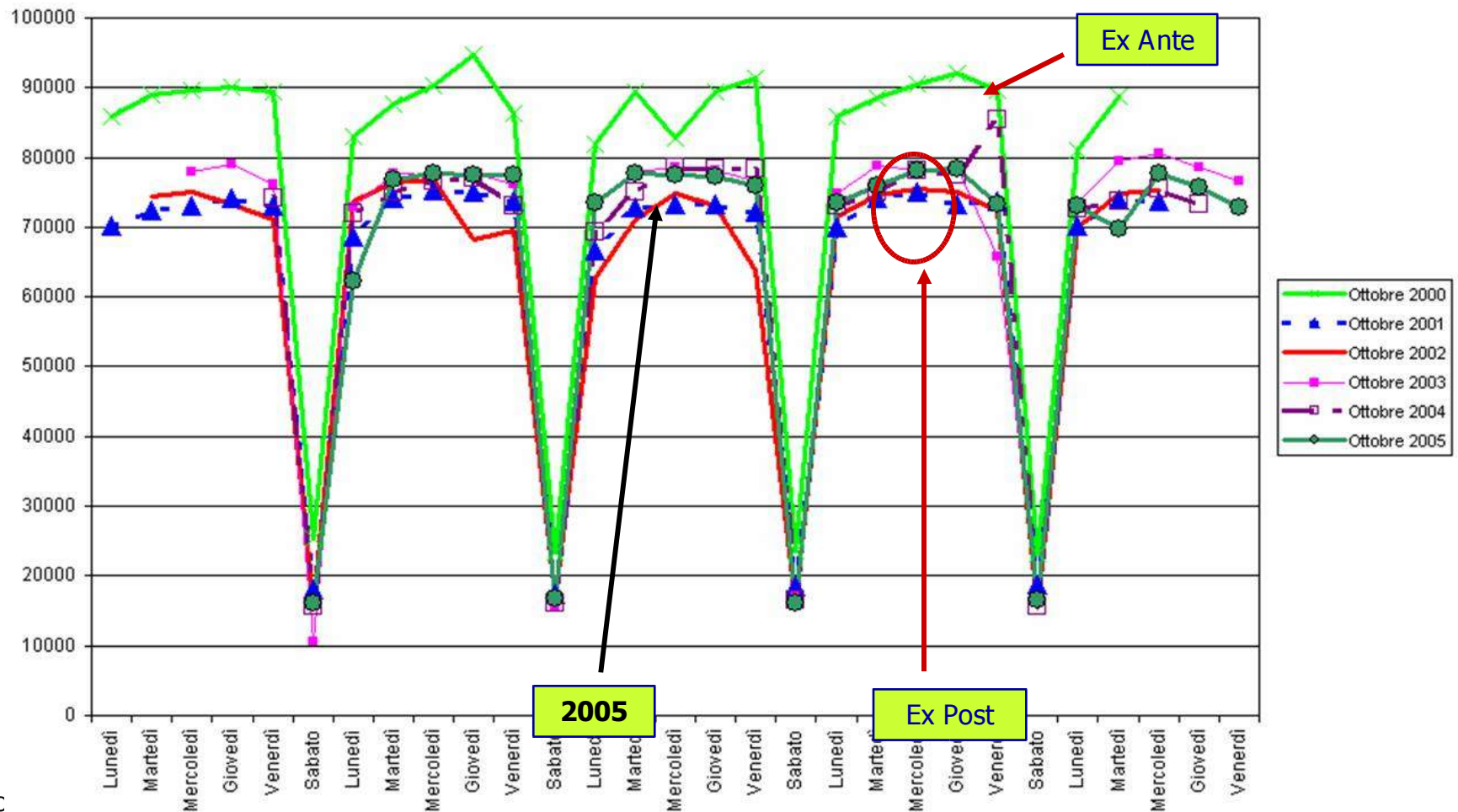


**Access flows reduction**

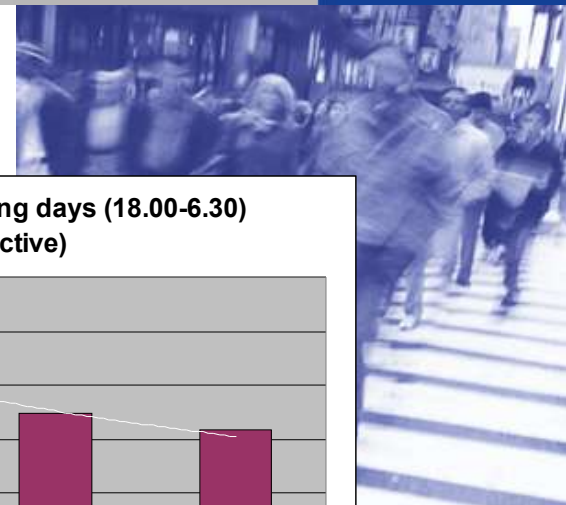
**-18%**

**Daily average accesses**

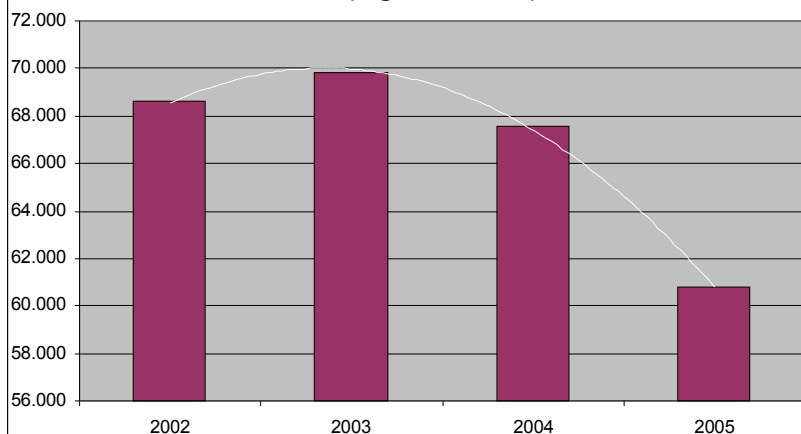
**70.000**



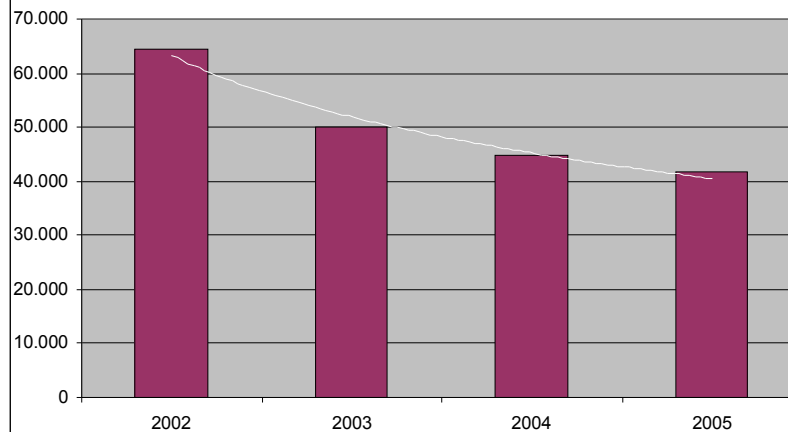
## Access trends by period of the day



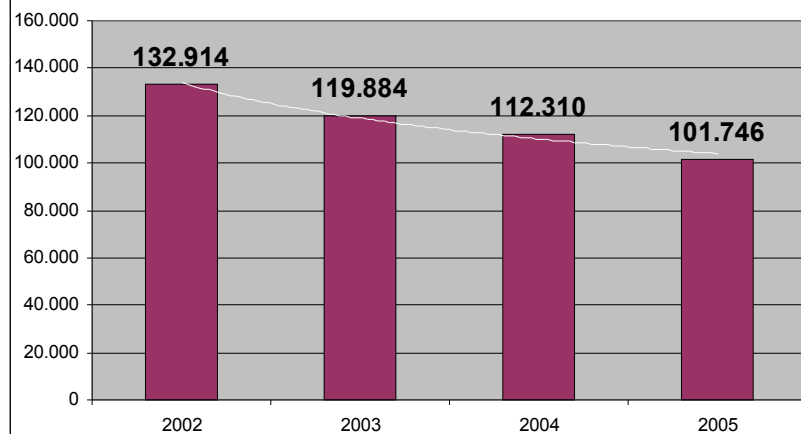
**Monthly means of the working days (6.30-18.00)  
(e-gates active)**



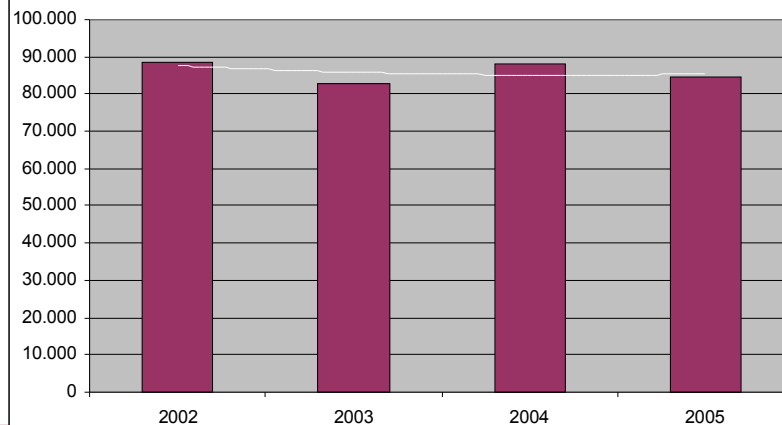
**Monthly means of the working days (18.00-6.30)  
(e-gates not active)**



**Monthly means of the working days (24 hours)**



**Mean of the Sundays (24 hours)**





## Bus Lanes Monitoring



In order to improve surface public transport service, ATAC is implementing the use of ITS technologies for **removing and sanctioning vehicles** that are not allowed to travel on bus lanes.

During the year 2006, the first **three stations** have been installed as experimental, implementing the system that is in use for automatic control of LTZ access.

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



Via Nazionale – via Milano

Via dell'Amba Aradam

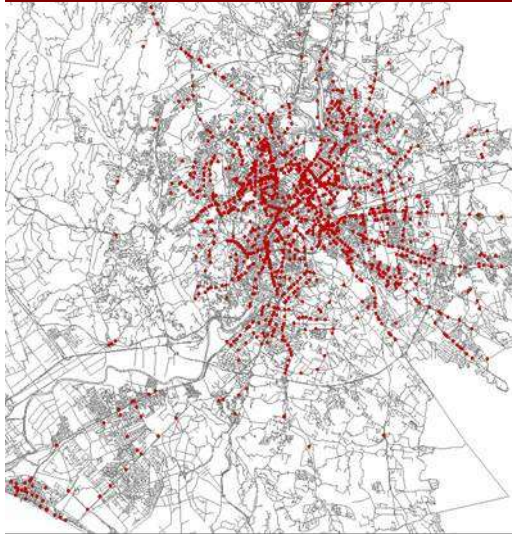


Via Nazionale – Largo Magnanapoli



# Traffic lights and signals

## Maintenance of technological assets



<b>Traffic signals</b>	<b>1320</b>
<b>coordinated</b>	<b>376</b>
<b>actuated</b>	<b>734</b>
<b>fixed times</b>	<b>163</b>
<b>Lights</b>	<b>23000</b>
<b>Loops</b>	<b>2500</b>
<b>Light columns</b>	<b>1225</b>
<b>Light signs</b>	<b>940</b>
<b>APL light signs on portal</b>	<b>140</b>

### PHOTO&V DEVICES

### ANALYSIS & PLANNING WITH SIMULATION MODELS

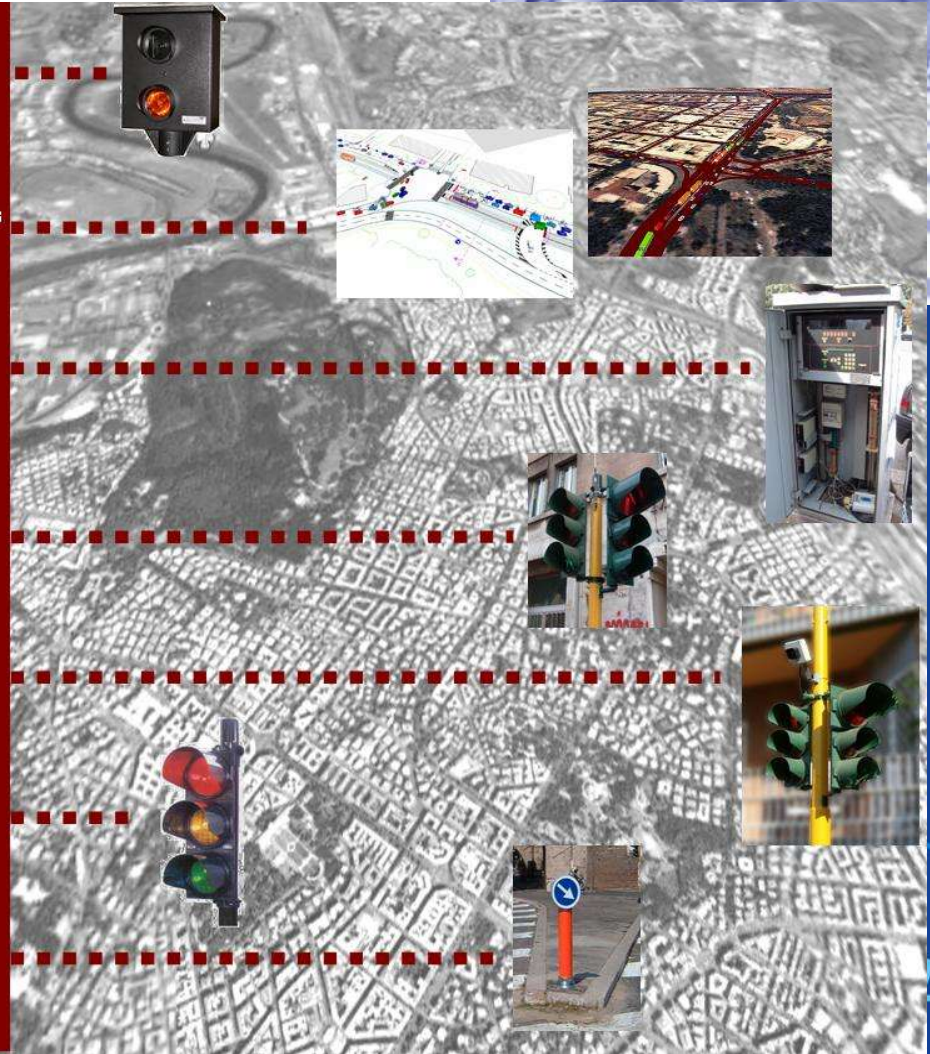
### DYNAMIC VEHICLE ACTUATION CONTROLLERS

### TRAFFIC SIGNALS COORDINATION CONTROLLERS

### ACOUSTIC DEVICES

### LED LIGHTS

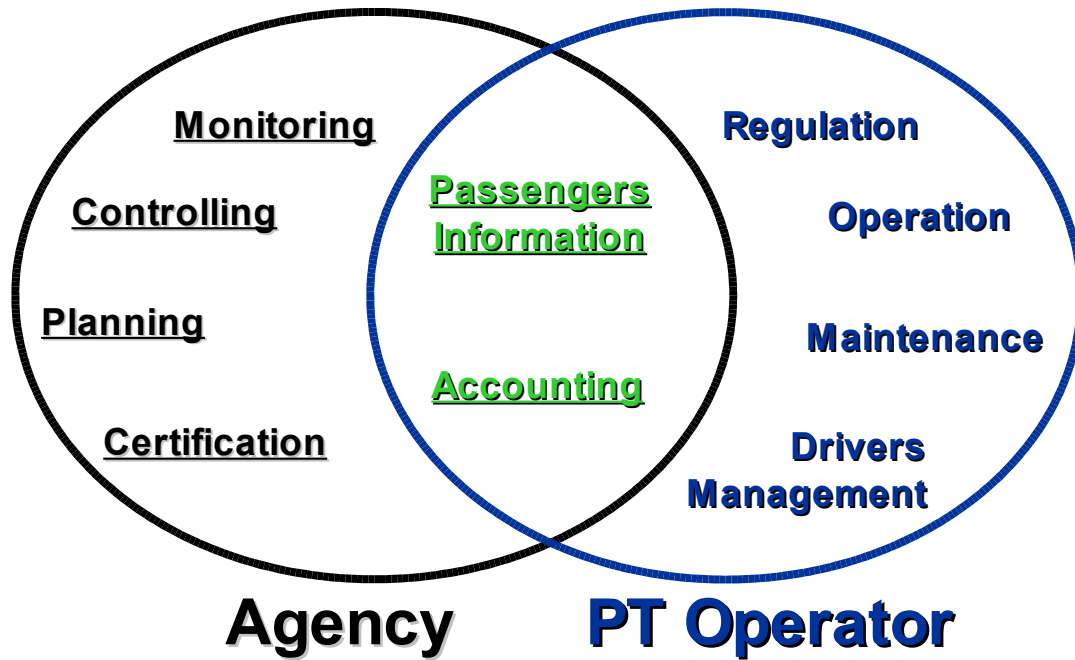
### NEW LIGHT COLUMNS





# AVM Systems (Automatic Vehicle Monitoring)

Supporting “core business” processes

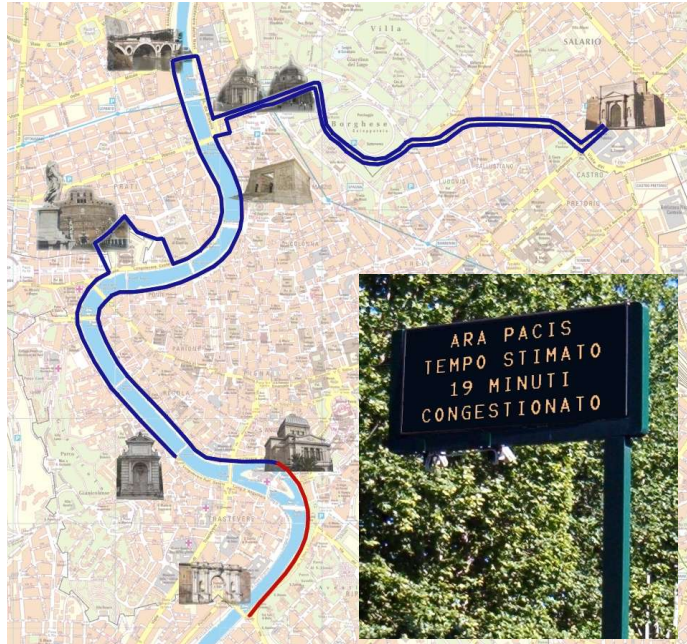


- 2400 monitored vehicles
- 13 depots
- 4 Companies
- ATAC & Municipality
- 300 Electronic displays





## UTT (Urban Travel Times)



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

### THE SYSTEM TODAY

- **15 Km** monitored in the old city centre to become 40 in 2008
- Travel times on **5** routes
- **10 cameras** installed
- **6** equipped **stations**
- Data updated every 5 minutes
- Messages displayed on VMS
- Monitoring near “Old City Centre LTZ” and “Trastevere LTZ”

### OBJECTIVES

- **Monitoring travel times** for **evaluating the level of service** that is offered by transport network and **find possible problems** due to the occurrence of anomalous situations (accidents, demonstrations,...)
- Offering **real time information** through different distribution channels about traffic on monitored routes, thus allowing the users to modify their routes according to network congestion



## UTT (Urban Travel Times)

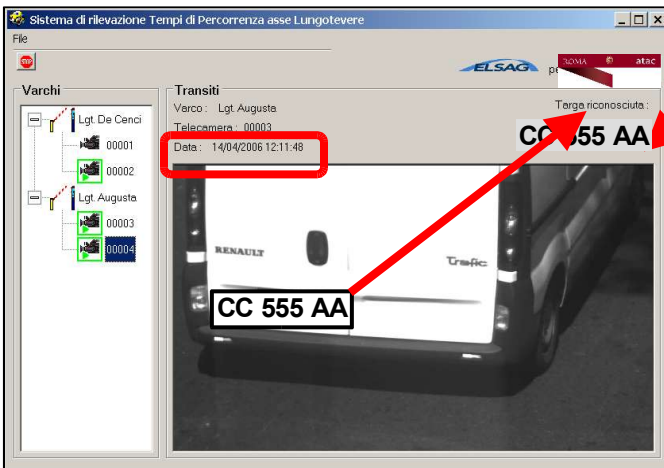


PLATE RECOGNISED  
AND TIME RECORDED  
AT THE ENTRY SECTION

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

PLATE RECOGNISED  
AND TIME RECORDED  
AT THE EXIT SECTION

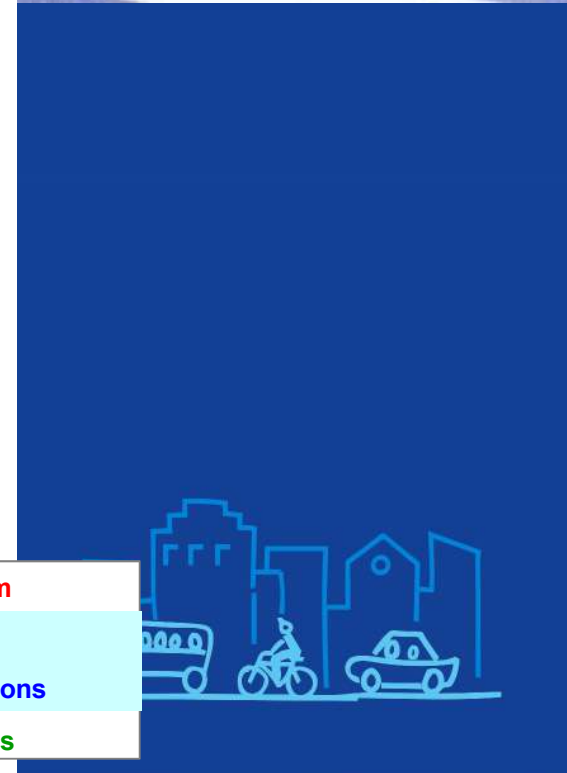
Targa: CC 555 AA  
14-apr-06 12:11:48

TRAVEL  
TIME  
21 mins  
9 secs





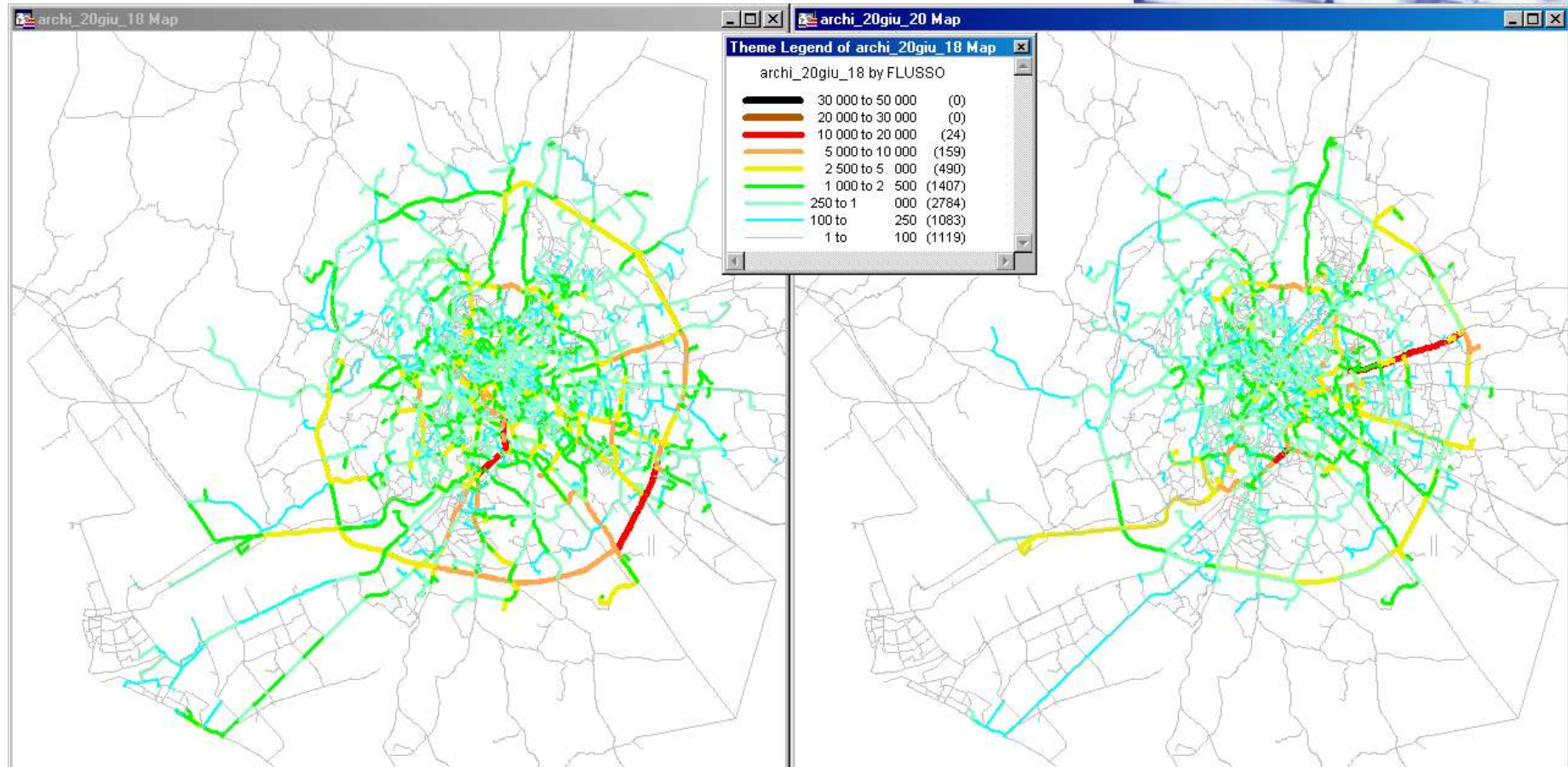
## ITS in Rome – Monitored road network



- Utopia subsystem
- Existing
- Planned extensions
- Other subsystems

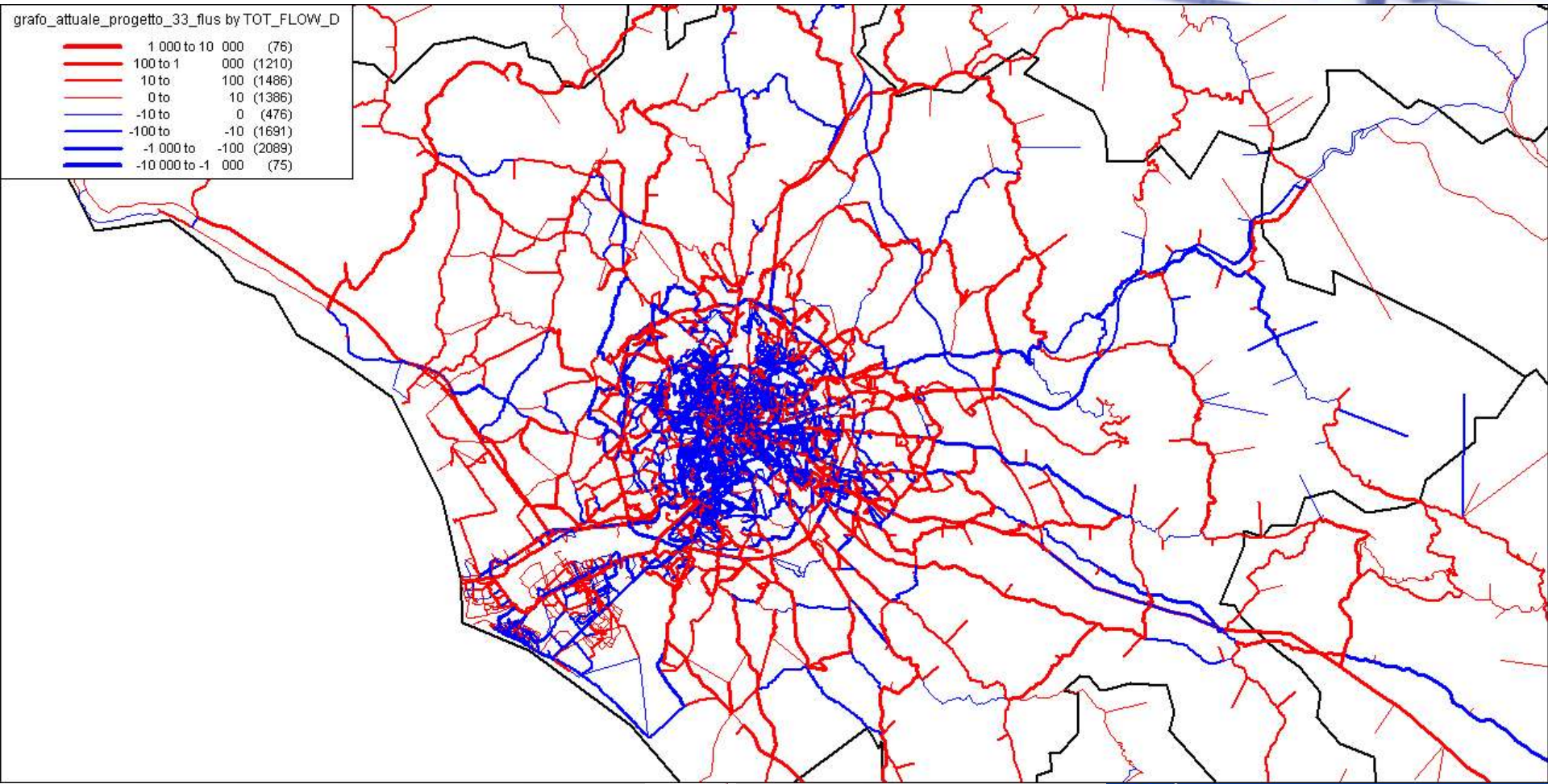


## Real-time traffic analysis



# ATAC Planning toolkit

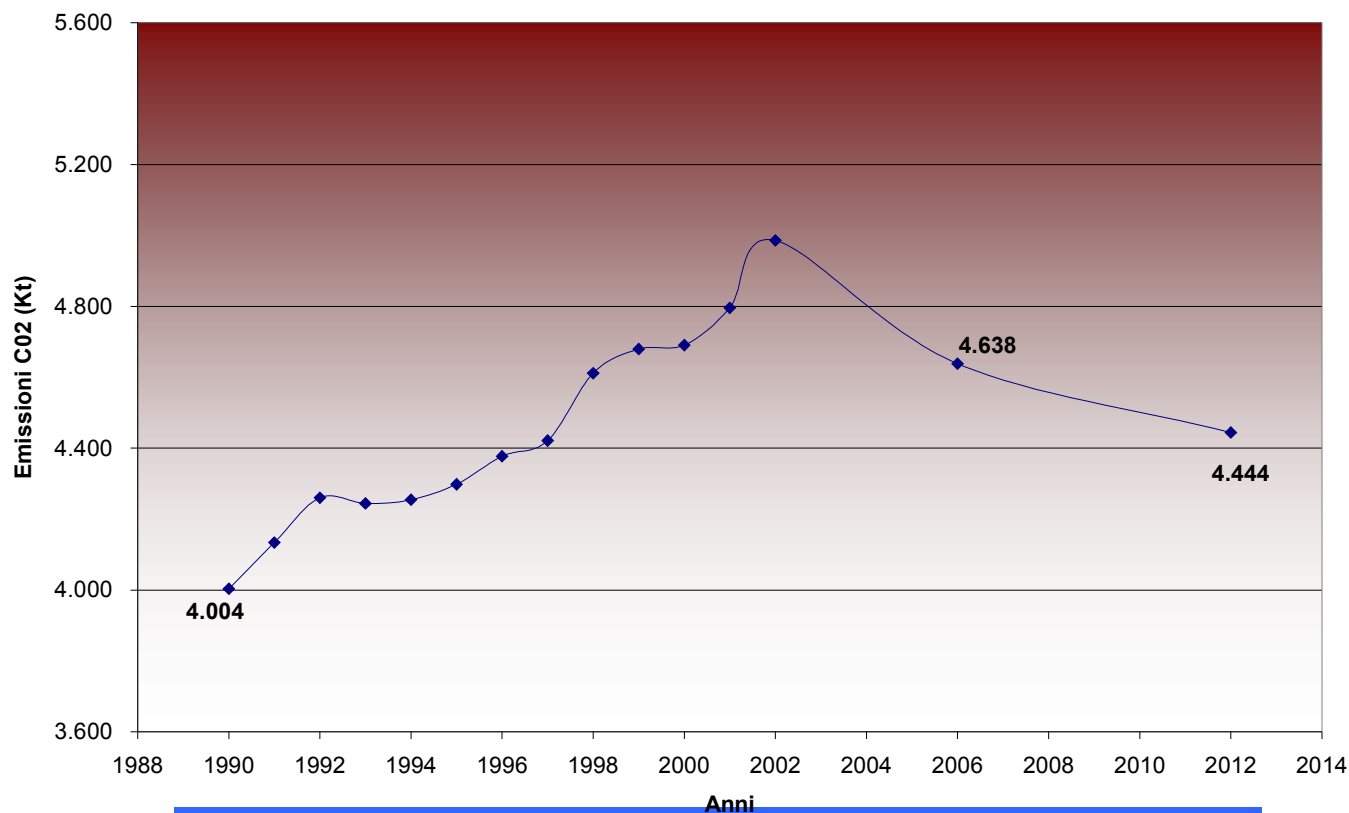
## 2006-2011 Peak hour: Traffic flow comparison





## ATAC Planning toolkit

### The evaluation of CO2 variations 1990-2012



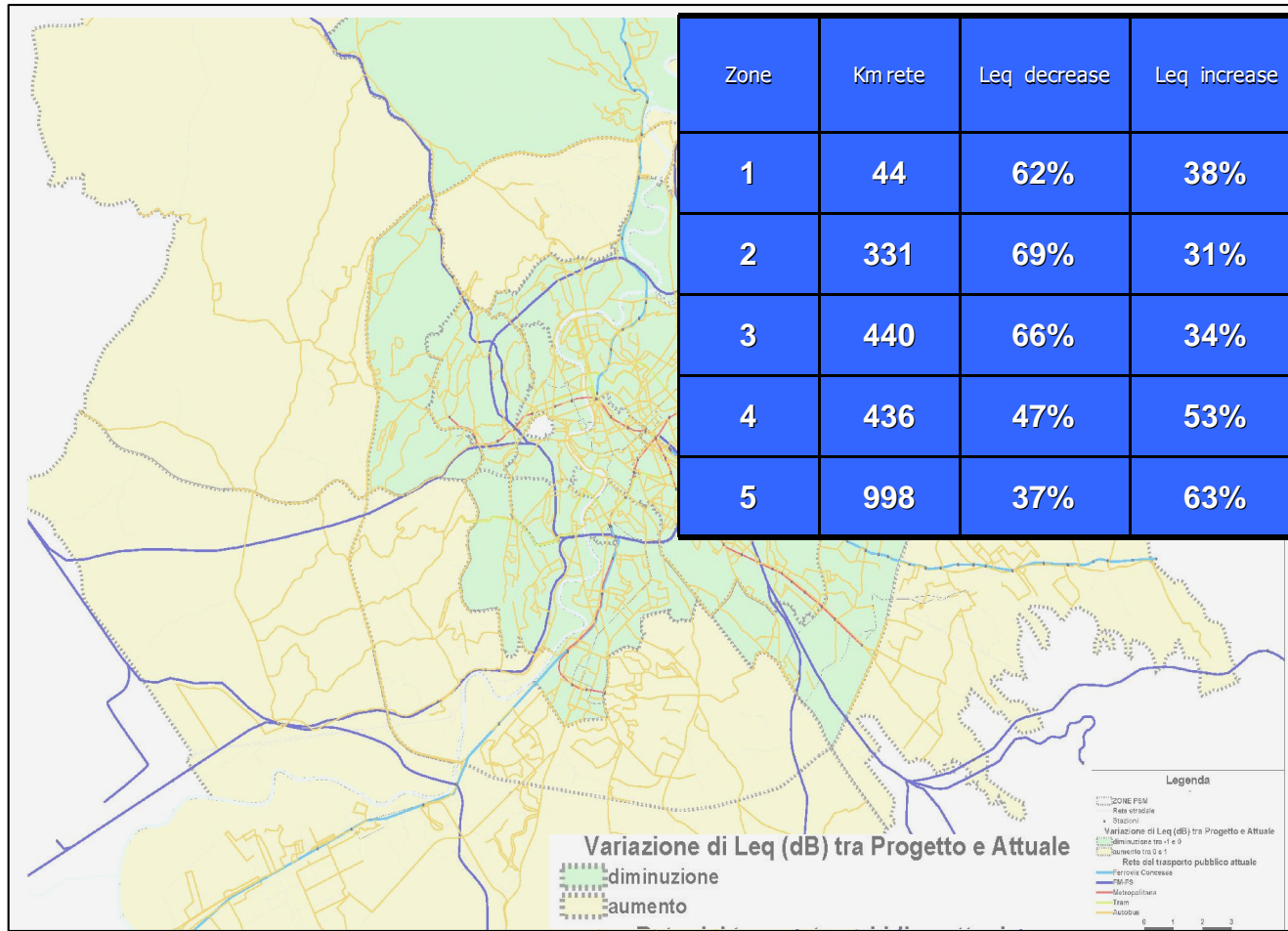
**...To be noted that, even with the huge expected efforts, emissions from mobility in Rome are far from the Kyoto objective (-6,5% of 1990 value)!**





# ATAC Planning toolkit

## ... And the noise Leq variation!



## ITS in Rome: Information & InfoMobility

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



Info kiosks



WEB



## Infomobility – ATAC Mobile



ATAC Mobile project: infomobility prototypal application on mobile devices (palmtop and smart phone)



**AIM** → Produce a **new interaction mode with the citizen** in which the **mobile devices** is a direct communication channel between ATAC and Rome citizens: ***A city on the move!***

- Traffic bulletin
- Travel times
- Video surveillance cameras images
- Events (works, closures, demonstrations...)
- Forecasts on arrival times of public transport to each stop





**atac**  
**mobile**





Come in into the future: switch to  
Info on [www.atac.roma.it](http://www.atac.roma.it)



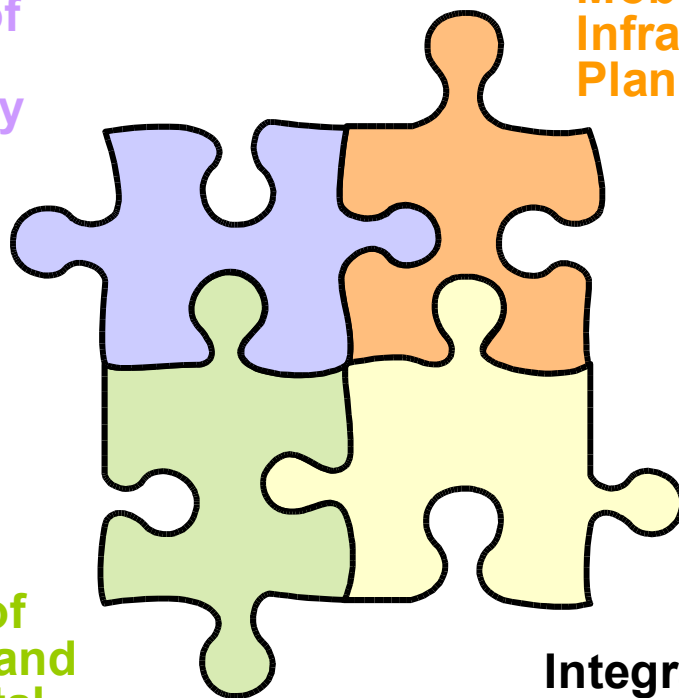
## The Mobility Centre in Rome: Integration into a unique picture...

Management of  
Public and  
Private Mobility

Urban and  
Mobility  
Infrastructure  
Planning

Monitoring of  
Congestion and  
Environmental  
Threats

Integration and  
Use of New  
Technologies





## Thank you

ATAC SpA

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[www.atac.roma.it](http://www.atac.roma.it)



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