Conference On Implementing Sustainable Urban Travel Policies in Russia And Other CIS Countries
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TRAFFIC ENGINEERING AND MANAGEMENT IN TURIN

Presentation by
Giancarlo GUIATI
Gruppo Torinese Trasporti
Italy
Traffic engineering and management in Turin, Italy

Moscow, 1°October 2004

Giancarlo Guiati, President of Gruppo Torinese Trasporti, Torino
Gruppo Torinese Trasporti

- Public transport in Turin and its metropolitan area, and in other 220 municipalities in Piemonte
- Rail transport in Turin metropolitan area
- Realization of the 1° subway line in Turin
- Management of great part of Turin parking areas
- Participation in several public transport companies
- 190 millions of passengers/year
- 5,262 employees
- in 2003-2005 investments for 1.187 millions Euro
A global strategy for urban mobility management

- Infrastructure
- Vehicles
- Demand management
- Intelligent Transport System (ITS) technologies
ITS in Turin metropolitan area

5T is an integrated system for traffic and transport management and control. Its main goals are:
➢ improve traffic flow in the urban area and reduce congestion
➢ improve the performance of public transport services to promote sustainable urban mobility
➢ provide real-time information services to improve travel conditions in the urban area
➢ reduce the atmospheric pollution caused by traffic

GTT and Turin City Council founded a company named Telematic Technologies Transport Traffic Turin devoted to develop and manage all ITS applications.
Town supervisor

- takes info from all systems
- estimates what could be the “user equilibrium” point in the specific situation
- sends to all subsystem the strategies to be actuated for traffic control and pollutant reduction (cooperative control)
Urban traffic control

Today 140 intersections
In 2006 300 intersections
Urban traffic control

Traffic light intersection in real time
Public transport management

UHF radio Network

Fleet - 1300 vehicles

P.T. control room

5T control room
## Parking control & VMS (Variable Message Sign)

<table>
<thead>
<tr>
<th>Parkings</th>
<th>parking places nr.</th>
</tr>
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<tbody>
<tr>
<td>PALAGIUSTIZIA</td>
<td>989</td>
</tr>
<tr>
<td>VENTIMIGLIA</td>
<td>336</td>
</tr>
<tr>
<td>RE UMBERTO</td>
<td>130</td>
</tr>
<tr>
<td>ARBARELLO (Cittadella)</td>
<td>245</td>
</tr>
<tr>
<td>GALILEO FERRARIS</td>
<td>422</td>
</tr>
<tr>
<td>NIZZA</td>
<td>375</td>
</tr>
<tr>
<td>FONTANESI</td>
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</tr>
<tr>
<td>VALDO FUSI</td>
<td>500</td>
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<tr>
<td>MAROCCHETTI</td>
<td>63</td>
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<tr>
<td>D'AZEGLIO/GALILEI</td>
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<tr>
<td>LINGOTTO</td>
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<td>STATI UNITI</td>
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<tr>
<td>ROMA</td>
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<tr>
<td>BODONI</td>
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<td>MADAMA CRISTINA</td>
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<tr>
<td>BOLZANO</td>
<td>858</td>
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</table>

### 5T control room

![5T control room image](image1)

### 22 VMS

![22 VMS image](image2)
Parkings managed by GTT

GTT manages about 4000 parking places in equipped areas

<table>
<thead>
<tr>
<th>In buildings equipped parking areas</th>
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GTT manages also 56,000 on street parking lots

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Routing VMS

26 VMS

9 mobile VMS
If you send an SMS with bus stop number
You receive in a few seconds arrival times of services for that bus stop

If you send an SMS with “P” letter
You receive in a few seconds information about free room in parking places

Path planning
Arrival times at bus stop
Parking places availability
Traffic and transport bulletin
Traffic management system results

5T system reduces the waiting time at traffic lights of private vehicles in the area controlled by the system.

Car waiting time at traffic lights

Flow [veh/h]

Waiting Time [s]

5 sec. Reduction for each intersection

2001

2003
...in a glance!

The traffic management system increases the commercial speed of public transport controlled lines and reduces the car-travel time in the controlled area

**RESULTS IN TURIN**

- Increase of PT Commercial speed: +17%
- In-car travel time reduction: -20%
Videosurveillance on board

Special video camera systems are currently operating on 150 GTT buses (310 at the end of 2004): in the event of a crime taking place on board these buses, the images recorded by the cameras are made available to the authorities for criminal investigations.
100 emergency call devices are in operation at GTT’s bus stops. The devices permit citizens to alert GTT’s operations centre immediately in the event of a threat to public safety. GTT’s staff may inform the emergency services, while video cameras photograph the scene.
Turin’s taxis fleet of about 1500 vehicles has been equipped with an on-board safety device permitting the driver to send an alarm to the radio taxi operations centre in the event of a threat to safety on board.
Electronic access control

The centre of the city, for which access is limited only to authorized vehicles, is equipped with an access control system based on electronic access points controlled by video cameras.
Electronic access control

Laser sensor + telepass (transponder)

2 cameras and infrared lamp

Loop
Electronic access control
Electronic access control: results

In controlled area since 3 months from the project start:

- **34%** traffic flow reduction, with trend of about 50% within 6 months
- **10%** increase of public transport commercial speed
Reserved lanes control

A new project based on video camera installed on bus windscreen has been started in order to improve public transport commercial speed. A video camera system is being installed on 160 buses and will be completed within 2004. It takes pictures of the not authorized vehicles plates in reserved lines. The numberplates are sent to the control centre to be fined.
GTT has set up a staff of 55 agents to improve public viability through:

- Fining vehicles left in no parking areas, and nearby bus stops
- Fining non-authorized vehicles on public transport reserved lanes

GTT’s agents support and cooperate with Municipality traffic policemen
Car sharing service is available in Turin since 2003 and it is managed by GTT Group. It aims to promote sustainable urban mobility reducing use of personal cars.
Traffic Operation Centre (TOC) is the control centre, integrated in 5T system, where:

- Olimpic mobility will be planned and managed
- all information about traffic and transport regarding the “Olimpic area” will be collected and broadcasted
Thanks for your attention and Welcome in Torino in 2006 for the Winter Olimpic Games

Gruppo Torinese Trasporti: www.gtt.torino.it