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Facilitating transportation policy making through an organized traffic data content

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Overview of the presentation

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3. An Observatory for transport and traffic planners and operators
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1. Introduction

Background

Travelling within cities and metropolitan areas: Ever increasing demand on transportation systems + existing congestion, high energy consumption, pollution.

What do we need the most?



Strategic mobility management

+ large amounts of information for decision support

Aim of the paper

1. Describe current transport set up in Athens (traffic information availability and provision)
2. Propose a standardized approach on traffic information flow
3. Present an Observatory for transport planners and operators (Viajeo Service C)

The “Viajeo” project - general

Title: “International Demonstrations of Platform for Transport planning and Travel Information”

Programme: FP7

Duration: September 2009 – November 2012

Goal: To design, implement, demonstrate and validate a technological open platform, which will:

- Support transport operations
- Plan a wide range of traveller information services
- Deliver dynamic information through integrated traffic data collection and management
- Deliver solutions for cross-modal journey planning, dynamic route guidance, improved personal mobility, etc.
- Provide standardized interfaces to support the data exchange among a variety of entities that provide mobility services

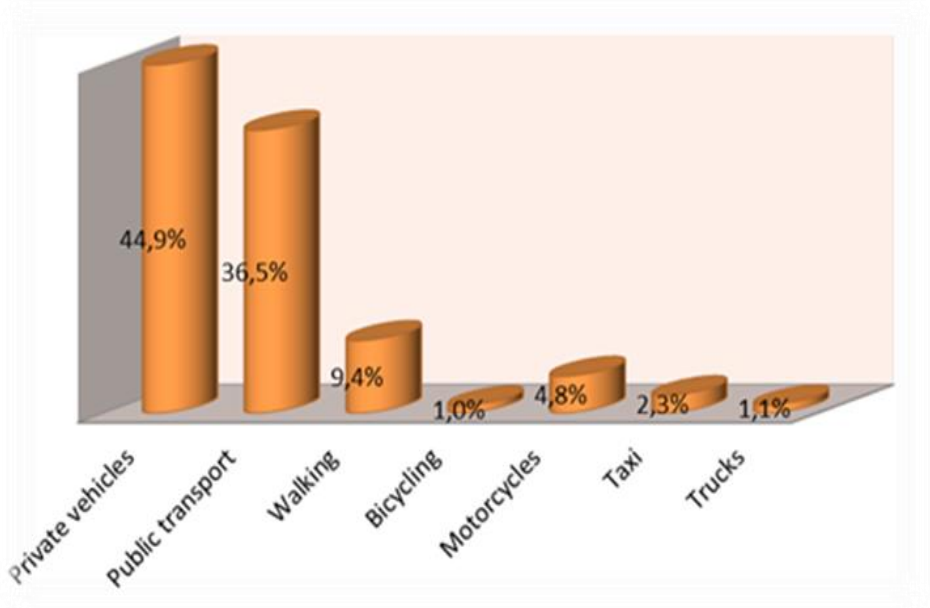
The “Viajeo” project – Athens pilot site

Three (3) implemented services:

1. Service A: taxi fleet management and traffic information – dynamic assignment, navigation and alerts on traffic incidents for taxi drivers
2. Service B: end-user multimodal trip planning and traffic information (web and mobile phone applications)
3. Service C: Observatory for public authorities and traffic planners.

2. The case study of Athens

Set up



Traffic data collection and provision:

- Athens Traffic Management Centre (ATMC)
- Traffic Management Centre of Attiki Odos S.A.
- Hellenic Statistical Authority
- Athens Urban Transport Organization (OASA

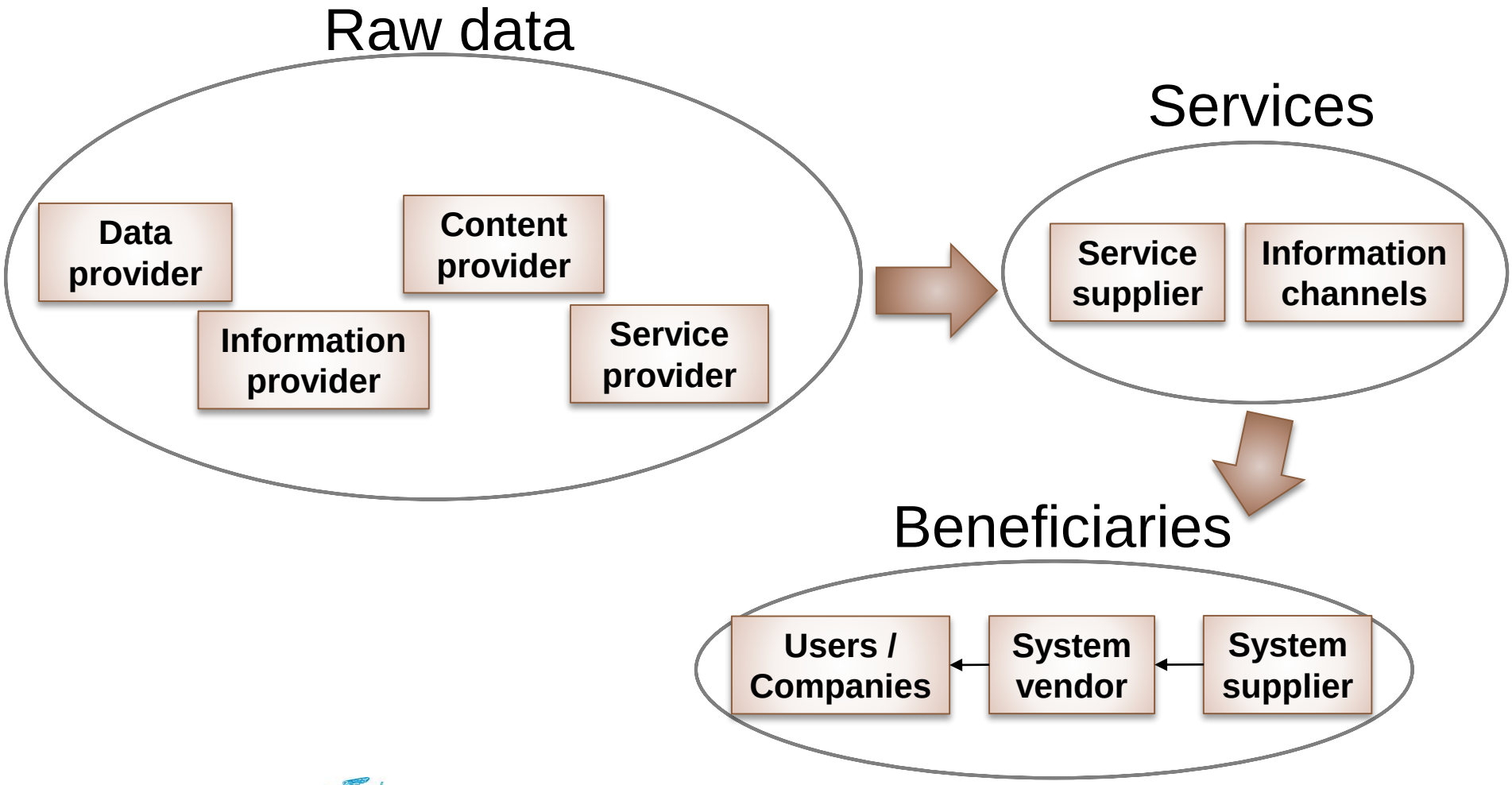
Needs and priorities of local traffic planners and operators

(Based on Viajeo survey)

- Better planning of the public transport network
- Better surveillance of drivers (i.e. bus lane trespassing)
- Higher use of Intelligent Transportation systems (ITS)
- Provision of high – quality traffic information:
  - Support to decision making
  - Processing (indicators)
  - Expansion of road network equipment, existing software for data processing and network for data transmission

3. An Observatory for transport and traffic planners and operators

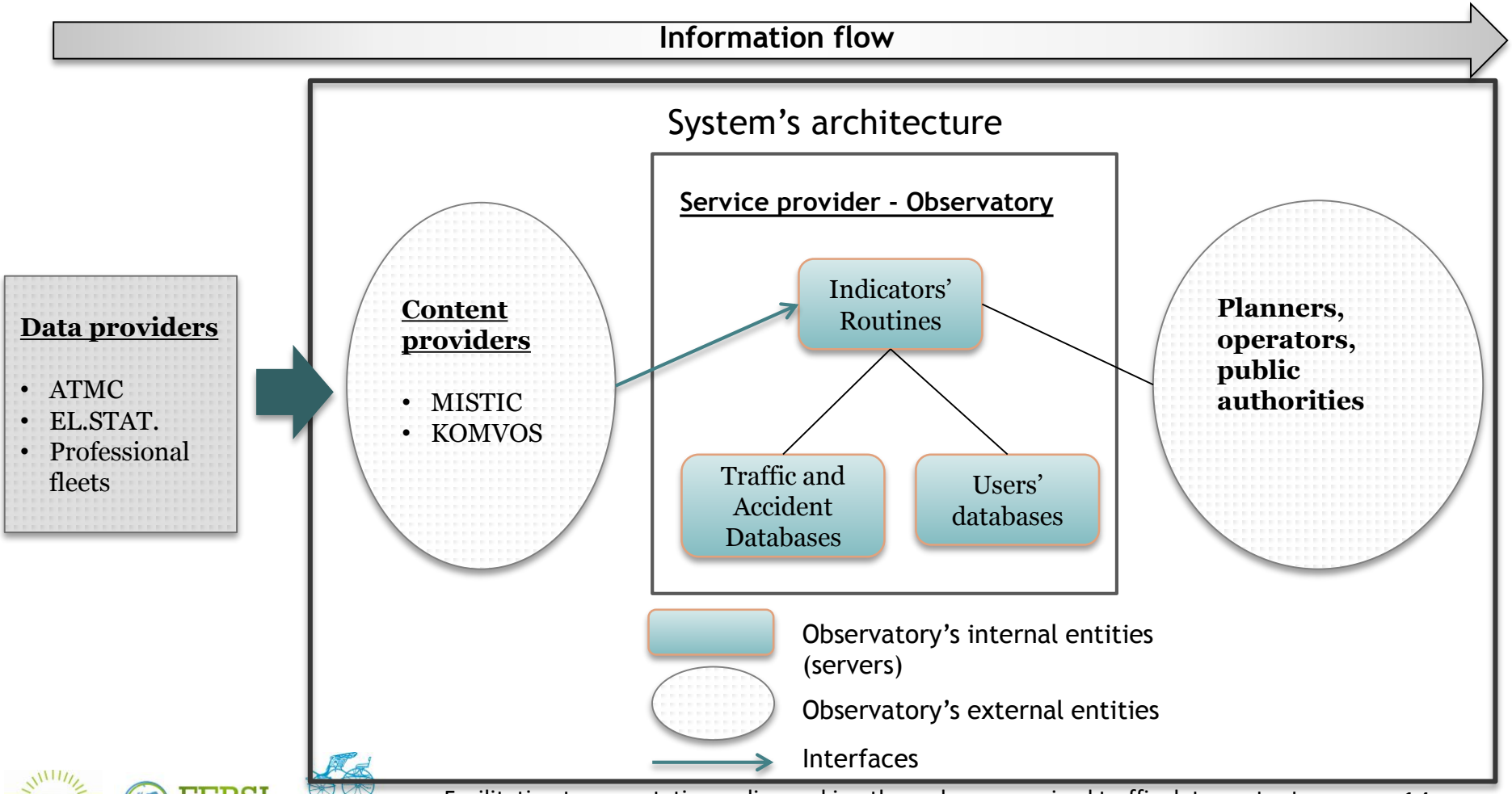
The value chain of information flow



The proposed standardized approach

Raw data collection and maintenance	• Traffic Management Data Dictionary
Data processing and revision	• MISTIC
Aggregated data communication	• DATEX II
Secondary data generation	• Standard traffic indicators
Information provision	• Customized web forms
Knowledge development	• MCA, CBA

Observatory system and service architecture



Traffic and transport indicators (1)

No	Indicator	Description
1	Number of reported accidents that include injuries	Number of accidents that include fatal, heavy and light injuries.
2	Region road safety indicator per 10,000 vehicles or per 100,000 residents	Total number of reported accidents of motor vehicles that include injuries (deaths, heavy, light) per 10,000 vehicles or per 100,000 residents.
3	Region road safety indicator per road type/paving type/etc.	Total number of reported accidents of motor vehicles per 10,000 vehicles (or 100,000 residents) and per road type (i.e. national road, rural road, municipal or community road, highway, speedway, other). Similar indices refer to paving type, environmental conditions, paving conditions, paving state, night lighting, type of vehicles involved, accident type, manoeuvre type that caused the accident and type of traffic control.
4	Indicator of accidents per million of vehicle km	Total number of reported accidents of motor vehicles per 1,000,000 vehicle kilometres.
5	Death rate per 10,000 vehicles or per 100,000 residents	Ratio of reported deaths from motor vehicle accidents to number of vehicles or residents.
6	Pedestrian death rate per 10,000 vehicles or per 100,000 residents	Ratio of reported pedestrian deaths carried away from motor vehicles to number of vehicles or residents.
7	Region accident weight indicator per 10,000 vehicle or per 100,000 residents	Number of persons injured during motor vehicles accidents per 10,000 vehicles or per 100,000 residents (injuries categorized heavy and light).

Traffic and transport indicators (2)

No	Indicator	Description
8	Region accident weight indicator per vehicle kilometres	Number of people injured in road accidents per 1 million vehicle kilometres. Injuries can be considered as fatal, heavy and light.
9	Network segment accidents weight indicator	Number of people injured (fatally, heavily or lightly) for a specific time period in a specific road segment.
10	Severity of accident	Number of accident including deaths in relation to the total number of accidents.
11	Road safety indicator based on the average speed	Number of total accidents reported in a specific road segment for a specific time period, categorized by the average speed.
12	Road safety indicator based on the road density	Number of total accidents reported in a specific road segment for a specific time period, categorized by the density of the road segment.
13	Road safety indicator based on the traffic flow	Number of total accidents reported in a specific road segment for a specific time period, categorized by the traffic flow.
14	Average traffic flow on a specific journey	The average traffic flow on a specific journey.
15	Total time spent on a specific journey	The time taken to travel between 2 specified points, by a specified route, including any time taken by involuntary stops and delays.

Traffic and transport indicators (3)

No	Indicator	Description
16	Average journey speed	The average distance travelled per hour, calculated over the whole journey
17	Average journey time	The sum of the average journey times on all the sections of the journey.
18	Peak hourly factor indicator	The hourly volume during the maximum-volume hour of the day divided by the peak 15-minute flow rate within the peak hour.
19	30th maximum value of the hourly volume	The 30th maximum value of the hourly volume in a specific road segment during the period of one year.
20	Yearly variation of the volume	Percentage of increase or decrease of the Medium Daily Hourly Volume of a road segment for the same day between 2 successive years.
21	Average Annual Daily Traffic	Fraction of the total number of vehicles going through a specific spot or segment of the road during a year to the total number of days of the year.
22	Annual Daily Traffic	Fraction of the total number of vehicles going through a specific spot or segment of the road during a specific time period to the total number of days of the period.
23	Monthly variation of traffic	Comparison of the traffic flow in a particular road segment in various months in the same year or in the same month during different years.

Use of the Observatory (1)

www.viajeo.imet.gr

April 9, 2012

Login Register

Observatory
for Public Authorities and Traffic Planners
Hellenic Institute of Transport

Viajeo

Power By
H.I.T. Portal

Home

The Project **VIAJEO "International Demonstrations of Platform for Transport Planning and Travel Information"**, funded under the **7th Framework Programme of the European Commission**, aims at designing, implementing, demonstrating and validating a technological open platform in order to facilitate data sharing and exchange from different sources and provide data processing and management to support a variety of urban mobility services. The open platform will allow the integration of diverse components and it will pilot tested in four demonstration cities worldwide: Athens, Sao Paulo, Beijing and Shanghai.

For more information, please visit the project's official website: http://www.viajeo.eu/

Within **VIAJEO's Athens pilot**, three services are being implemented. Service A refers to **taxi management**; Service B to **multimodal journey planning**; and Service C refers to the establishment of an **Observatory for public authorities and transport planners**. The objective of the **Observatory** is to provide to traffic planners, public authorities, transport companies and other relevant stakeholders a well-organized *data mechanism* and *content* that will help them to estimate the status of the **transportation system in Athens** and support their policy making process. This will be achieved by providing data and indicators about traffic and transport conditions.

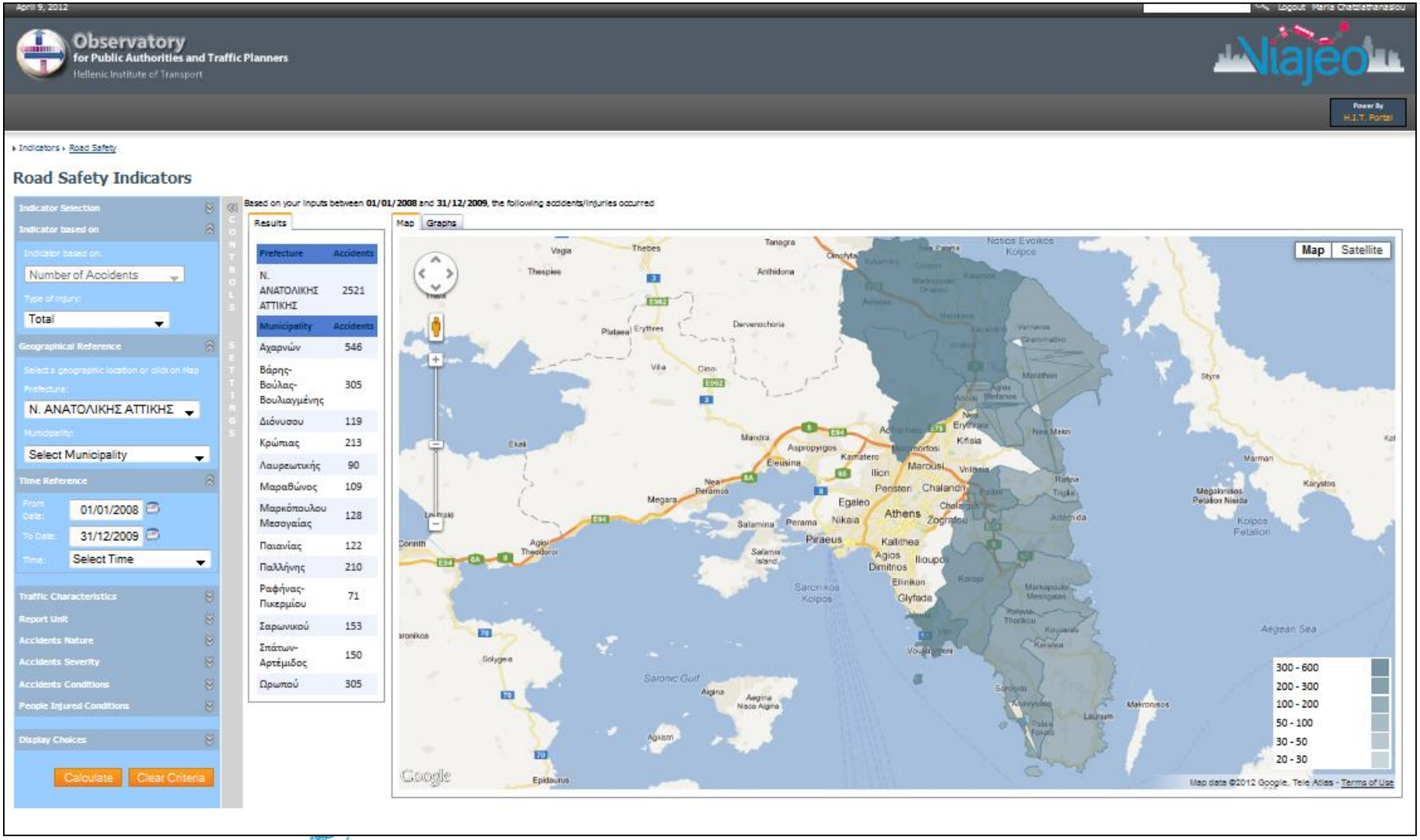
The core component of the **Observatory** is the indicators, which are defined in order to be able to capture a sound picture about the traffic and transport conditions in **Athens** that will be further used for traffic planning and decision making. The indicators mainly refer to traffic and accidents, and are clustered in four categories:
a) **Road safety indicators** (related to the number of reported accidents and injured persons);
b) **Infrastructure and vehicle ownership indicators;**
c) **Road traffic indicators for specific journeys** (related to traffic flow, speed and duration of the journey); and
d) **Other traffic indicators** (mainly referring to basic traffic indicators, such as peak hourly factor and Annual Daily Traffic).



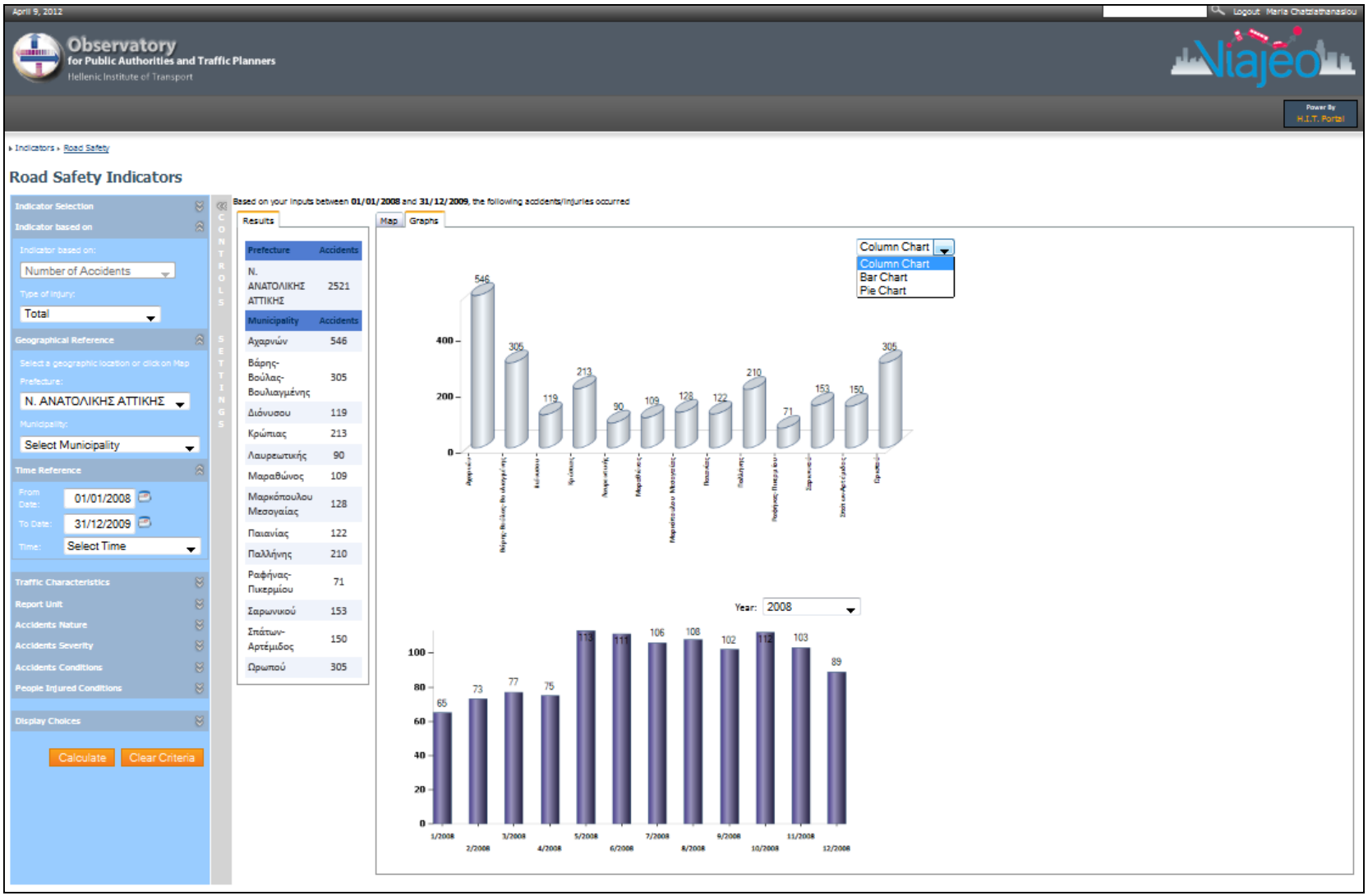
- Road Safety Indicators
- Infrastructure and Vehicle Ownership Indicators
- Road Traffic Indicators
- Other Traffic Indicators

Data Request Form

Use of the Observatory (2)



Use of the Observatory (3)



4. Conclusions

Contribution to standardization

- National standards + market standards (SIMONE) for raw data collection
- European standards for data exchange (DATEX II)
- Indicator's specifications based on commonly agreed definitions

Stimulating transport policy making

- Clear definition of the issues that the policy making should address (justifying interventions and investments).
- Input for policy/strategy to be formulated (i.e. multi-criteria analyses), assessed and successfully implemented.
- Tool for monitoring and evaluating the applied policy measures.
- Scenarios building and assessment, guiding future investments and major transportation infrastructures.

Concluding remark

The observatory provides a single-source, easy-to-access, aggregated, accurate, comprehensive and up-to-date set of data, thus responding to the demand of modern transport planning for data availability and provision

Thank you for your attention!

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For more information please visit the Observatory's official webpage:
www.viajeo.imet.gr