A Six City Case Study: OPTICITIES approach to Smart Urban Mobility

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Overview

An innovation project coordinated by Grand Lyon

With 6 European cities: Lyon, Madrid, Birmingham, Göteborg, Turin, Wroclaw

Major ITS stakeholders: Spie, Volvo trucks, Vedecom, PSA, Renault, Cityway, Hacon, Icca, Neurosoft……

Academic partners: UPM – Madrid, CHALMERS Sweden, Politecnico di Torino (PDT), CNR France

The most important European networks on urban mobility and ITS: EUROCITIES, ERTICO, UITP

3 year duration starting November 2014
13 M€ budget funded by the European Commission (FP7) and the 25 partners
Set up high level services for travellers and urban logistics, addressing user needs and urban mobility public policy,

Support mobility policy and an open market for business development around urban ITS, through a contractual framework between public and private actors

Define standards and architecture to foster interoperability among cities and among travel modes
WHAT IS OPTICITIES?

OPTICITIES’ vision is to help European cities tackle complex mobility challenges.

OPTICITIES’ strategy focuses on the:
- Optimisation of transport networks through the development of public/private partnerships
- Experimentation of innovative ITS services.

OPTICITIES is aiming high, intending to develop and test interoperable ITS solutions in six different cities in order to provide urban citizens with the best possible journey conditions and to optimise urban logistic operations.
OBJECTIVES OF THE PROJECT

OPTICITIES is organised to deliver the following objectives:

Establish a European standard of multimodal urban data set.

Develop a contractual architecture for public data access and exchange.

Enhance network operators’ supervision capacity and management efficiency.

Develop, experiment and assess innovative services for sustainable urban mobility.

Enhance users’ accessibility to mobility services.
INNOVATIVE DEVELOPMENTS

- Optimisation of urban traffic regulation Coordination of all transport modes
- Provision of real-time information for all modes, anytime, anywhere
- Freight delivery optimisation Fleet management services

Real-time urban mobility Monitoring systems
Urban mobility portal
City’s mobility data set
**KEY DELIVERABLES**

**NEEDS**
- Local transport solutions on one mobile interface
- Best solutions to go from A to B
- Best routes in case of incidents along a trip

**SOLUTIONS**
- Multimodal Urban Navigator
- Urban Freight Navigator

**Urban Mobility Public policies**
- Foster modal shift
- Optimise traffic management
- Increase car occupancy rate

- Multimodal Urban Navigator
- Predictive and multimodal management tools
- Real-time car pooling

**Service providers**
- Autonomous business models
- Deploying services in any European city

- Access to public and private mobility data
- Standardised Urban Mobility Dataset and interfaces

**European cities**
- Identify promising tools
- Implement best practices

- Deployment guidelines
- OPTICITIES Stakeholder Forum

**IMPACTS in participating cities**
- Modal shift: 6% towards soft and public modes by 2020
- Public space management: gain of 3.6 million m² public space
- Traffic congestion decrease and optimised road network operations: gain of 1.5 million tons CO₂ per year
- Development of European ITS market for urban information thanks to interoperable solutions
- Optimisation of urban freight operations thanks to Urban Freight Navigator
PILOT CITIES

LYON
DATA CREATION AND USE
Freight data
Web 2.0 data
DECISION SUPPORT TOOLS
Traffic prediction into traffic management systems
TRAVELLER INFORMATION SERVICES
Multimodal urban navigator
Interface with in-car systems
Real-time car pooling
FREIGHT INFORMATION
Urban freight navigator

GOTHENBURG
DATA CREATION AND USE
Roadworks data
DECISION SUPPORT TOOLS
Soft modes priority
TRAVELLER INFORMATION SERVICES
Multimodal urban navigator

WROCŁAW
DATA CREATION AND USE
Freight data
FREIGHT INFORMATION
Dangerous goods and oversized vehicles information

BIRMINGHAM
DECISION SUPPORT TOOLS
Traffic prediction into traffic management systems

MADRID
DATA CREATION AND USE
Data for large cities
DECISION SUPPORT TOOLS
Multimodal management
TRAVELLER INFORMATION SERVICES
Multimodal urban navigator

TORINO
DATA CREATION AND USE
Web 2.0 data
DECISION SUPPORT TOOLS
Multimodal management
TRAVELLER INFORMATION SERVICES
Multimodal urban navigator
Real-time car pooling
PARTNER CITY: BIRMINGHAM

Largest authority in Europe

Geographically at the heart of the UK’s road and rail network

Population 1,073,045 (2011 estimate)
9.8% rise on 2001 census,
- faster rate of growth than rest of West Midlands region and of England

Regional centre of the West Midlands
- 30 million vehicle miles per year on the region’s roads
- more than 3.5 million vehicle miles per year (1.5 million on major roads)
OPTICITIES – Why are we in this?

Birmingham Connected

BCC Aspirations

Where OPTICITIES will take us
What we want out of the project:

Outputs that can be developed from R&D into day to day operations

Improved Data Management

Integration with other projects: OTN; BCC Data Portals

Our Delivery Partners:
  - Amey
  - Cloud Amber
The Project Role of Birmingham City Council

Development of a Decision Support Tool for traffic management

Based on predictive traffic information

Analysis of historic traffic flows using artificial neural networks to allow us to make predictions up to 1 hour ahead

Simulates human operator - ‘we did this last time we saw something similar, and it worked’

Grand Lyon are using analytics and modelling approach
Urban Mobility Portal

Brings together transport data from a range of sources, bus, rail, traffic, in-vehicle

Utilises Open Data

Built on Existing Open Standards

Allows other implementations – private sector
Our approach:

4 Strategic Corridors: UTMC compliant

Builds on UTC Major Scheme investment to:

Manage congestion

Manage Incidents and Events

Proactive Management not Reactive
Experimentation

Amending traffic signal timings and plans

Providing information, through Apps, VMS etc.

Combination of both

Primary Corridor Routes
OPTICITIES Expected Impacts:

- More efficient integrated multimodal network management
- Upgraded methodologies and tools for traffic planning
- Progress towards open systems for traffic solutions enabling a faster market deployment of ITS in urban areas.
- Improved understanding of people mobility behaviour and freight movements
Integration of public transport and soft modes in traffic planning and operations

Improved user experience in multimodal transport services

Support the use of standards to achieve open traffic systems to accelerate dissemination.

Identify possible follow-up actions
THANK YOU FOR YOUR ATTENTION!

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