Málaga, December 2014

Executive Summary

TITLE:	**LED services and location optimization.**

PAPERS RELATED:

- D. H. Stolfi, and E. Alba, Un Algoritmo Evolutivo para la Reducción de Tiempos de Viaje y Emisiones Utilizando Paneles LED, *MAEB2015*, To appear

ABSTRACT:

In this work the Yellow Swarm architecture is proposed with the aim of reducing travel times, greenhouse gas emissions, and fuel consumption of road traffic. Yellow Swarm consists of several LED panels placed around the city in order to suggest different deviations to vehicles so that traffic jams can be prevented. We have worked with real maps imported from OpenStreetMap into SUMO traffic simulator and calculated the optimum time window for each deviation proposed. The results show that our system has been able to deliver reduced travel times (24.6 % maximum), greenhouse gas emissions (24.1 % maximum), and fuel consumption (12.6 % maximum).

GOALS:

1. Instance generation inspired in radio network design.

2. Solving the optimal info panel location problem.

3. Analysis of the obtained results and their impact on real world traffic flow in cities.

4. Review and design of information services for LED info panels.

5. Propose information services with impact on current cities.

6. Review of the state of the art.

7. Design and implementation of information services infrastructure to vehicle.

CONCLUSIONS:

1. Instances of cities with real traffic flows can be built.

2. Results show our proposal of smart mobility is very useful and low-cost.

3. It is an effective solution even at low using rates.

4. We are able of reducing not only travel times but also greenhouse gas emissions and fuel consumption.

RELATION WITH PAST DELIVERABLES:

PRE: D5.5.1 (advisable reading)

PRE: D5.6.1 (advisable reading)

PRE: D5.6.2 (advisable reading)