

ERNEST final conference - Florence, June 27th, 2012



CLEAN

eleCtric mobiLity to analyse tourist bEHaviour in
urbAN areas



Agenda

- Brief Summary
- Project Partners and Regions involved
- Overview and priority objectives
- Progress of activities
- Next steps

Brief Summary

CLEAN is based on an integrated and interdisciplinary approach that brings together **environmental and sociological monitoring**.

The idea at the basis of the CLEAN project is to use **electric vehicles for tourist mobility** in urban centres to monitor and reduce the environmental impact of tourism mobility.

Vehicles host high tech equipment (a mobile laboratory) and samplers are located in static points **to monitor and map tourist behaviour** and related environmental impact.

Tourists are provided with free vehicles and are requested to test them during normal tourist activities (while the systems collect data automatically) and to complete a specifically designed **questionnaire** on their experience.

Data collected during the research are used as the basis of a **scientific and sociological study** into tourist behaviour and impact.

Project Partners and Regions involved

Cooridinator: **Grand Hotel Mediterraneo** *Italy / Tuscany*

- **Hotel Calzaiuoli** *Italy / Tuscany*
- **Hotel Villa Fiesole** *Italy / Tuscany*
- **Hotel Athenaeum** *Italy / Tuscany*
- **Hotel Kursaal** *Italy / Tuscany*
- **Girona Local Council** *Spain / Catalonia*
- **Andago Ingeniería** *Spain / Basque Country*

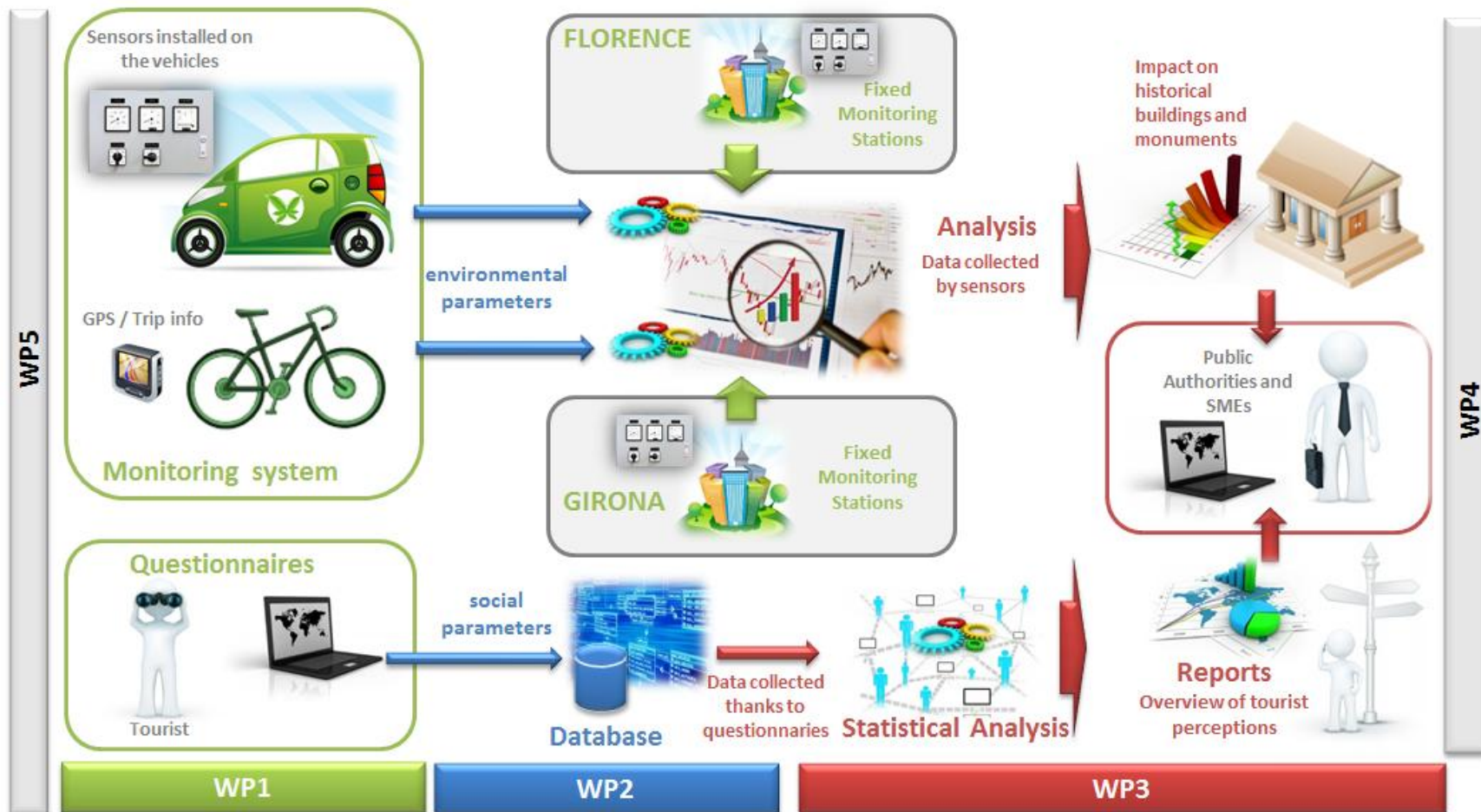
In collaboration with:

I2T3 Onlus *Italy / Tuscany*

Resolvo *Italy / Tuscany*

4Sfera

Overview and priority objectives



Progress of activities – Tuscany Region

- **Joint questionnaire to analyse the tourists behaviour**, which focuses on: Quality of Service; Places visited by tourists and areas of interest; Difficulties to use electric vehicles.

- In Florence **sensors will be accommodated on electric cars** in different environmental situations; each sampling campaign will use, at the same time, more than one SPME, each with different chemical selectivity.

SPME are **polymeric passive samplers** that trap and detect a wide range of Volatile Organic Compounds, from highly polar to non-polar, which can be then characterised using gas chromatography mass spectrometry or liquid chromatography mass spectrometry.

The SPME experimentation investigates the Florence city centre to identify **molecules that are potential harmful to cultural heritage and public health.**

Progress of activities - Girona

Phase 1: Mobile laboratory and evaluation tools

Timetable:

- Proposal approach
- Itineraries and infrastructure design
- Communication strategy
- Coordination logistics routes: reservation, welcome, material, etc.



Phase 2: Vehicles and sensors testing, development social data

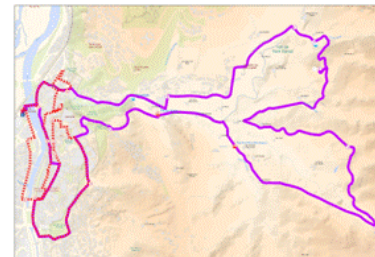
Timetable: 01/02/2012 to 28/02/2012

- Routes pilot test / marking / adjustment
- Installation of sensors

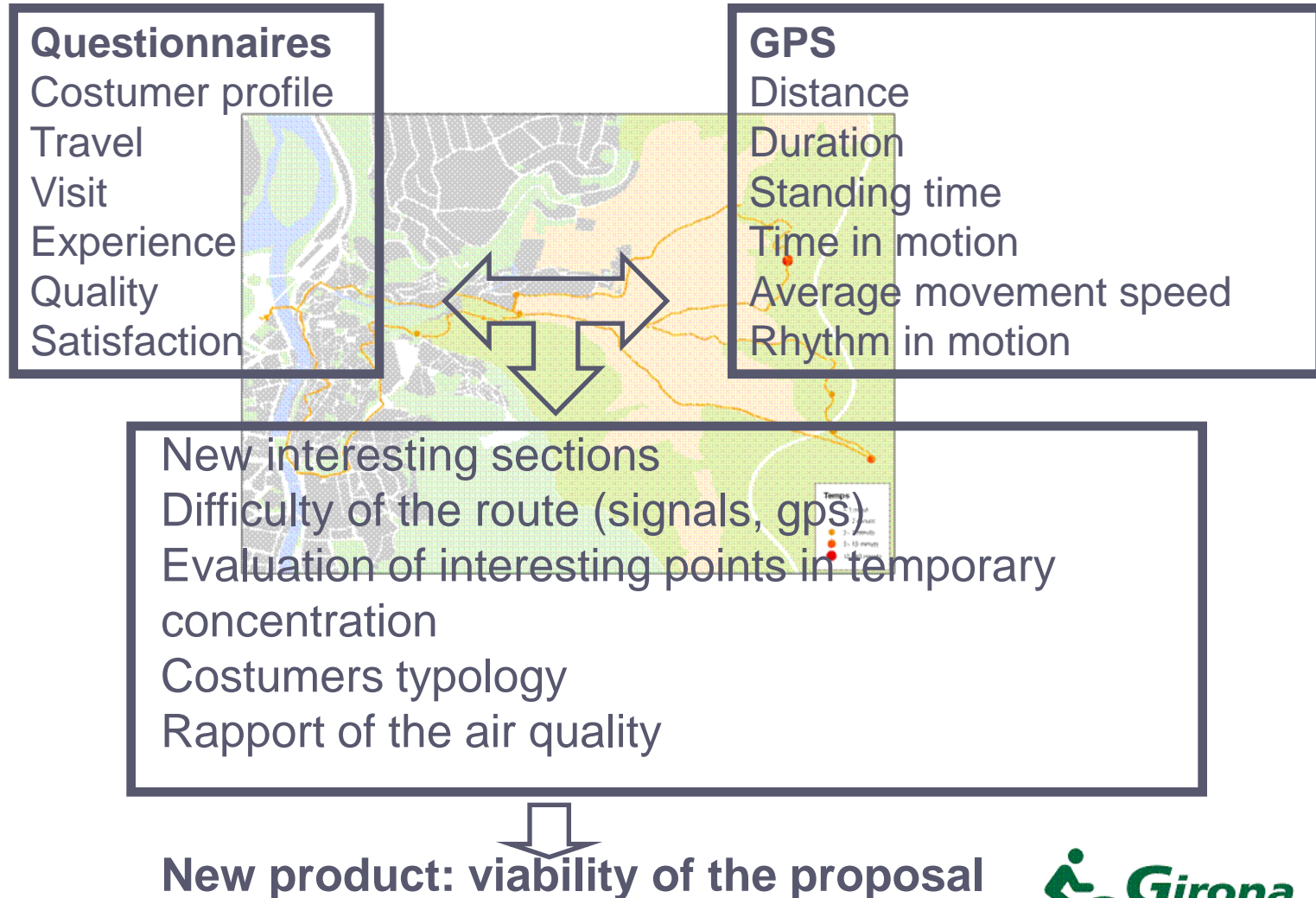
Phase 3: Beginning of pilot testing and analysis of results

Timetable: 28/02/2012 to 31/06/2012

- Pilot testing: development tourism routes
- Data collected
- Questionnaires and GPS analysis



Metodology of analysis



Progress of activities

- Effort of Andago mainly in technology development:
 - Customization of questionnaires and validation with partners
 - Technological infrastructure to collect data
 - Web form to allow the tourist to fill the questionnaires in by a mobile or pc

Next steps

- In Tuscany the pilot will start in the second half of June.

SPMEs will be installed on the electric cars to measure the pollutants during tourists' trips.

- In Catalonia the pilot started in April: 2 routes of interest were planned, one in the city centre (1-2 hours) and one that goes to the Vall de Sant Daniel (Valley of Sant Daniel). Cultural content is provided in the form of an audio guide (*road book*), recorded in four languages.

- The technological infrastructure to collect data has already been developed by Andago and will be managed by them throughout the project.