

Publishable summary

The CONDUITS (Coordination Of Network Descriptors for Urban Intelligent Transportation Systems) project aims at developing Key Performance Indicators that assist European municipalities in business decisions for Intelligent Transport System (ITS) projects and to facilitate best practice exchanges between municipalities on experiences with ITS. An important aspect of the research is further to link the performance indicators to the current traffic situation in the cities.

CONDUITS is characterized by a strong city involvement and will develop a number of tools to assist local authorities in making investment decisions on ITS. The project's objectives will be achieved through the coordination of research and development activities, so as to gather information on the programs of cities and research teams, to improve communication, and to define the mutual needs and develop better reciprocal knowledge. In addition, the results are expected to benefit a wider range of ITS stakeholders, including the research community and the ITS industry by:

- showing the most promising areas for urban ITS where research efforts should be directed;
- achieving an internationally-recognised standard measure for quantifying benefits, enabling better and faster decision making by policy makers;
- stimulating more private high-tech investment by lowering the risk and uncertainty associated with intelligent transport systems.

The overall CONDUITS objectives are:

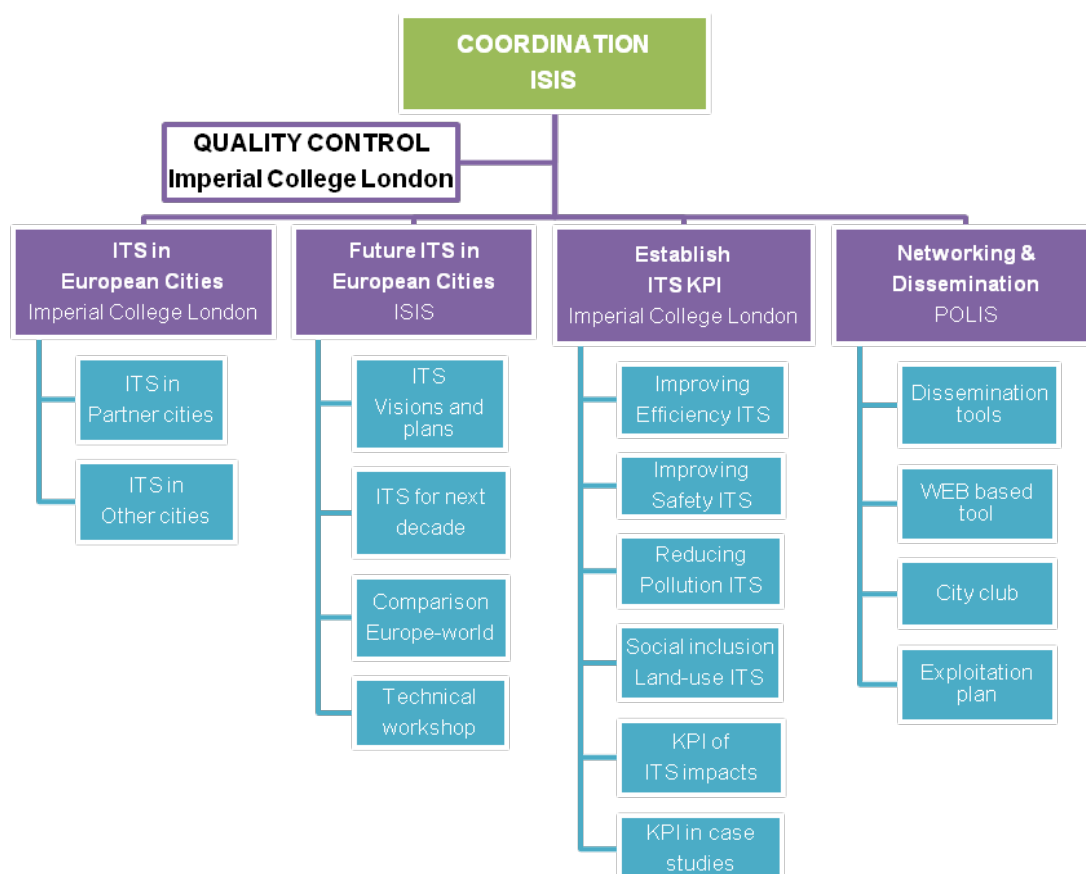
- **To establish a coherent set of performance indicators to indicate ITS good practice.** These indicators will help to understand in which areas the transport network of a city is performing well. Indicators should include all areas in which ITS applications can improve performance. Hence safety, efficiency of individual modes, sustainable transport as well as environmental issues will be addressed.
- **To understand European cities future ITS plans and to compare this to ITS worldwide.** To inform the on-going discussion in several European cities on what are realistic goals regarding the transport situation in the next decades, a comparison of the current state-of-art would be informative. It will help transport policy formation in European cities to understand where they stand in comparison with other cities worldwide. It will further facilitate politicians as well as transport engineers to build the case for investment in appropriate urban ITS systems. A key theme in European transport policy is integrated mobility: it is the aim of this project to inform in how far this is reflected in the investment plans of European cities.
- **To clarify the market for specific ITS applications and to understand the barriers to implementation.** Establishing performance indicators will further identify possible markets for ITS applications. The project will look at potential for implementing recent technological advances through targeted cases that are of interest to city partners. The project will further establish a basis to understand the interest of cities in innovative ITS research ideas. As a case in point, the project will set up a framework for an informed

discussion with several cities regarding the future priorities for innovation in traffic signal control having understood the particular context these cities are operating under.

- **To facilitate technical exchange on ITS solutions applied in major European cities.** The increasing speed of investments in advanced (and expensive) ITS architectures and, in particular, “integrated traffic control centres” require a better exchange of experiences between operators of such schemes. The project will facilitate such an exchange through a series of workshop and possibly the establishment of a city club specifically to promote best practices.

CONDUITS is coordinated by the Italian research and consultancy firm ISIS (Istituto di Studi per l’Integrazione dei Sistemi - Rome, Italy – www.isis-it.com). Mr Andrea Ricci is the Project Coordinator (aricci@isis-it.com) with the active support of Mr. Maurizio Tomassini (mtomassini@isis-it.com) . The project consortium consists also of the transport authorities of five European cities - Barcelona, Brussels, Istanbul, Paris and Rome - three universities - Imperial College of London, Technical University of Munich and Technion, Israel Technical Institute of Technology - and the networking organisation POLIS. In addition, to the project partners, a group of additional cities will be invited to join workshops and comment on the main results.

The figure below shows the overall work breakdown structure of the project.



In addition to cooperation between the consortium partners, collaboration with existing projects will be ensured through a review of previous work in ITS area. To this aim four projects will be of particular relevance in respect of CONDUITS: SIMBA, ERTRACS 2, 2DECIDE and the international Network of European and North American Capital and Major Metropolitan Cities for exchanging information and experience on Urban Mobility and Transport Policies called IMPACTS. Contact will be made with co-ordinators of these projects to discuss how collaboration can be assured. SIMBA aims to increase road transport research co-operation between Europe and the emerging markets of China, India, Brazil and South Africa by establishing a collaboration network that will bring together the key stakeholders in the field of ITS, road infrastructures and automotive developments. Therefore connections to CONDUITS surely exist as the project intends also to establish a collaboration network and lessons learned can be disseminated. The ERTRACS 2 Coordination Action will provide a platform to all relevant stakeholders for establishing a consensus on future road transport research directions, and the definition and promotion of European RTD activities such as joint technology initiatives. There is hence a link to CONDUITS as both projects aim to inform stakeholders on future of road transport and potential investment opportunities. 2DECIDE addresses one of the most important ITS deployment related challenges on European level: Support and speed up consistent decision making related to ITS deployment for road and public transport. Key ambition of 2DECIDE is to support both EU ITS policy goals as well as national ITS deployments strategies to gain the utmost benefit of ITS deployment and the related investments for a sustainable road and public transportation system. These are the reasons why CONDUITS will assure a cooperation and exchange of information with this project in any relevant areas.

The main expected outcomes consist in a **review of ITS in European cities today**, that will collect relevant information provided by partners on the current transportation system in the partner cities as well as data beyond that influence traffic demand. The consortium, in fact, includes cities of various size and with diverse interests concerning future ITS investments. Secondly, a picture of **ITS development in European cities tomorrow** will be given to understand the role and possibilities for ITS deployment in European cities in the future. Since the evaluation of ITS projects should be based on performance indexes, a **set of key performance indicators** (KPIs) will be developed. Additionally, the feasibility of a **'city club' on ITS** will be investigated during the first year of the project, then, if cities involved in CONDUITS are favourable, in the second part of the project the city club will be created.

The dissemination of the results is carried out through printed project reports and publications on the CONDUITS website (www.conduits.eu).

Work performed during the first year and results achieved

During the first reporting period CONDUITS had successfully:

1. Launched the project website (www.conduits.eu):

The domain *www.conduits.eu* has been acquired and a website for CONDUITS has been created. This contains general information on the project, detailed descriptions of the individual work packages, contact information, partner information, city pool information (with maps of Europe and the world), information on CONDUITS-related events and a web space for documents (deliverables and newsletter).

2. Formed a network of 39 cities ('city pool') throughout Europe and the rest of the world:

The questionnaire designed for the purposes of cities context analysis (WP 1) has also been used for the admission of cities to the city pool. Including the five city partners of the consortium, 39 cities have returned the questionnaire and have accepted to become city pool members; these involve 34 cities from Europe and 5 cities from outside Europe.

3. Analysed the city context and set out the background for a review of ITS in cities in Europe and worldwide:

Based on both primary and secondary research, a thorough literature review on transport problems in cities has been conducted, including a review of measures, policies and technologies that have been implemented worldwide. The importance of efficient urban transport has been highlighted, among others due to its close relationship with economic prosperity and development. However, providing efficient transport is associated with dealing with a number of problems, which have been categorised in five broad areas: land use, congestion, car dependence, environment and safety. Most cities have taken or plan to take action towards facing these, in order to achieve their short- and long-term objectives, which mainly include changing the modal split in favour of public transport, reducing emissions, decreasing road accidents. An important additional issue that has been identified is the fact that city transport authorities are very often faced with political difficulties, difficulties in communication and difficulties in sharing information.

4. Led off the definition of scenarios on future needs and ITS applications:

In order to speculate future ITS applications based on general ICT solutions, scenarios of future needs and ITS applications were defined. The scenarios defined include applications varying from cooperation of information and management systems, to autonomous vehicles and tele-presence. The basic findings indicate that although fundamental technology such as image sensing and mass data processing require further development, institutional barriers and user acceptance issues are as important and need to be addressed.