

# **THE ISSUE. Traffic, Health, Environment; Intelligent Solutions Sustaining Urban Economies.**

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## **ABSTRACT**

THE ISSUE is a project within the Regions of Knowledge scheme funded through the European Commission's Seventh Framework Programme. THE ISSUE focuses on Traffic, Health and Environment to achieve Intelligent Solutions for Sustaining Urban Economies by bringing together innovative research-driven clusters to coordinate European research and technology development in six areas. These areas are Intelligent Transportation Systems; transport impacts on urban mobility; transport greening; intermodal regional transport; safety and security of citizens; and associated economic, health and environmental impacts. THE ISSUE project particularly addresses the use of space technologies from satellite remote sensing and navigation, as well as GIS and computer intelligence technologies in transport-related sectors. This paper looks into the general presentation of the project and the first results.

**Keywords:** Traffic, Health, Environment, Transport Strategies, Technological development

## **1. INTRODUCTION**

Transport technology and policy lies in the heart of achieving sustainable urban economies. However, it appears that the consistency between the research and technologic developments and the local transport strategies is often strongly limited. This results in the poor optimization of the transport general organization in terms of transport impacts on urban mobility, on health, environment and economy, safety and security of citizens, intermodality or transport greening.

THE ISSUE sets out to understand, integrate, co-ordinate and exploit existing Research and Technology Development (RTD) programs in these themes across five regions in Europe via a consortium comprising clusters from the East Midlands Region in the UK, the Midi-Pyrenees and Aquitaine Regions in France, the Molise Region in Italy and the Mazovia Region in Poland.

In addition to the four core regional clusters, a further eight Associate Regions have recently joined the Project as part of the mentoring programme within the Project. This includes regions of Andalucia and Basque Country (Spain), Calabrie (Italy), Central Greece, Northern Ireland, North-West Region of Romania, Primorje-Gorski (Croatia), Uusimaa (Finland).

Each core cluster has set up a three-way partnership between regional authorities, academic partners, and industry contributors working to draw together the industry and academic strengths in the regions. This three-way approach, also called “Triple Helix” partnership, aims to connect the research with the needs of managing traffic, transport, and air quality that the institutional bodies are responsible for. The project addresses the potential impact of collective research action on future transport, health and environmental policies for Europe’s regional and urban administrations.

THE ISSUE particularly focuses the use of space technologies from satellite remote sensing and navigation, as well as ITS, GIS and computer intelligence technologies in transport-related sectors, to develop more effective methods of easing road congestion and improving the urban environment.

## **2. MAIN STEPS OF THE PROJECT**

The first step of the project deals with the audit of the regional research competences on the one hand, and the audit of the local transport strategies on the other hand.

The research, academic and technological capacities audit provides a vision of the regional competences and technological know-how related to THE ISSUE challenges. In each core region of the project, the actors capable of innovation are identified by mapping their technological expertise in several target fields of activity, and programs or research project they are involved in.

The local transport strategies audit aims to identify the regional strategic approaches to deliver and manage transport in a sustainable way. It identifies the institutional actors involved in local strategies, analyses the mechanisms for implementation of policy objectives, in particular through the different Local Transport Plans, and analyse how it might be possible to integrate innovative technologies in local authority strategies.

From this double audit, a SWOT (Strength, Weaknesses, Opportunities and Threat) analysis have been carried out within and between the different core regions of the project in order to state on triple helix collaborations, to determine the main institutional priorities of the analysed European regions and to identify which existing new technology will have the greatest impact on European regions in the near term if incorporated into local/regional Transport Plans.

From this first step, the second step deals with the definition of a joint action plan, which will identify the most promising research areas that fit regional priorities within the consortium partners for cooperative RTD action. This joint action plan is associated to a business plan, identifying both private and public financing sources (work programmes in current and future funding calls, through the European Commission as well as national and regional funding opportunities, private investments and venture Capital funds).

The last step is the specify implementation of the joint action plan.

### **3. FIRST RESULTS**

The project has begun in December 2011. The RTD audit, the transport strategies audit, and the SWOT analysis are completed. The consortium is currently working on the joint action plan.

Concerning the RTD Audit, even if the targeted actors and selected projects are not exhaustive, the RTD mapping brings together more than 130 organizations with a wide panel of competences and knowhow, covering all the technological themes of THE ISSUE. These identified actors are mainly from the industrial sector, however more than 30 % of them are Research or Public actors.

Most of the 8 key technological fields are covered by the 4 core regions. A strong knowledge exists in the field of navigation technologies (half of the identified actors have competences in navigation or satellite positioning), Intelligent Transport System, GIS, Embedded Systems and Security/Safety of systems. A lack of expertise appears in the field of Autonomous Systems or transport greening.

Concerning the RTD projects, more than 100 projects have been targeted among the 4 regions. RTD projects can be funded by 3 different kinds of incentives: European, National or Regional funding sources. We can for example observe that European regions have a different approach in the way to support innovation with a contrast between the importance of national aid in Midi-Pyrénées/Aquitaine and a major role given to European institutions in Molise or Mazovia. In general terms, the two triple-helix (Transports-Health-Environment and Companies-Authorities-Laboratories) are not yet enough adopted in the various RTD projects.

In terms of Transport Strategies Audit, it appears that the transport responsibilities are very different between the different core regions. More than 100 actors have been identified; among them almost 40 have been precisely described and their interactions analysed. The transport strategies and their link with environment and health strategies are declined in more than 30 plans in the 4 core regions.

The analysis of these plans has permitted to identify a number of key transport challenges and issues that are particularly relevant to THE ISSUE project in the core regions. Among them, we can mention issues linked to peak time traffic congestions (that often requires optimization

of the use of the current networks without adding additional infrastructures), modal change needs (through the creation and promotion of modal shifts, alternative transport mode network and unique ticketing for all means of transport), information for users (real time, continuously, reliable, user-friendly...) or accident avoidance and management.

The technological solutions that can answer to the main public strategies needs have been identified as well: new space and ICT in intelligent traffic management, GIS to view road congestions data through mapping, ITS technologies (V2X communication systems, space based systems, autonomous navigation, data collection etc...), ultra-low carbon technologies, creation of multimodal hubs around cities (e.g. relays parks), tools for users planning multimodal journeys, data sharing infrastructures, close circuit television coverage (acquisition and automatic processing) for safety and security enhancement...

Based on this analysis, the project will work on 2013 in order to concretely associate in the European region for each identified transport priority the associated existing technology through the joint action plan.

#### **4. CONCLUSION**

The project is bringing together scientists, engineers, development agencies and bodies responsible for managing traffic, transport and air quality in four European regional clusters using advanced space and information technologies, to develop the most effective methods of easing urban congestion and improving the impact of transport on the local economy, urban environment, climate change and the health of citizens. In addition to the results, that will contribute through the implementation of the joint action plan to the development of useful and used technologies, the methodology and the proposed approach is relevant to encourage actors of the triple helix to work together all around the world.