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<p>ERTICO - ITS Europe thematic paper</p> <p>Published on: 16.11.2011 By: ERTICO - ITS Europe Contact: Hermann Meyer</p>	<p><i>ITS for Urban Mobility: Safer, cleaner and smarter cities</i></p>
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Summary

The deployment of ITS in urban areas is crucial to solve the transport problems of today and to ensure sustainable transport in the future. The ERTICO - ITS Europe Partnership supports several activities concerned with ITS for safer, cleaner and smarter urban mobility. This thematic paper gives an overview of the European policy framework concerning urban ITS, introduces some ITS applications which are already making urban mobility more sustainable, and suggests deployment steps to be taken by regional and local authorities for the successful implementation of ITS.

In the future, ITS will provide information to the traveller, driver, traffic manager, logistics company and fleet operator to enable appropriate decisions and support. This will not only improve mobility for the citizen but also provide a milestone for the sustainability of transport in cities.

Cities face similar problems and can in many cases adopt similar ITS solutions. Nevertheless, local authorities may need some local adaption of ITS solutions answering to their specific needs. ITS is a powerful tool to help achieve policy outcomes and it is vitally important for cities to know that procured ITS applications support the traffic management tasks of cities' traffic management centres, help fulfil the expectations of their citizens in the long term, and are cost-efficient. It is useful for cities to receive advice on the quality of ITS applications and services before making tender and procurement decisions. The ERTICO - ITS Europe Partnership will continue to support cities in identifying appropriate ITS solutions to meet their challenges.

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Introduction

The ERTICO ITS - Europe Partnership has published a [thematic paper on ITS and urban mobility](#) which details the activities regarding ITS and urban mobility ERTICO is involved in. This thematic paper gives an overview of the European policy framework concerning urban ITS, introduces some ITS applications which are already making urban mobility more sustainable and suggests deployment steps to be taken by regional and local authorities for the successful implementation of ITS.

Challenges for sustainable urban mobility

The urban population of the EU-27 amounted to 73% of the total population in 2008¹, making sustainable transport in cities and urban areas an important factor for sustainable mobility in the entire European Union. As diverse as the urban areas in the European Union are, certain challenges have to be tackled by almost every urban area in order to achieve a more sustainable urban mobility. The transport-related challenges European urban areas are facing include:

- Safety-related challenges
 - Safer mobility, especially concerning Vulnerable Road Users (VRUs)
 - Safer dangerous goods transport to and across cities
- Environment-related challenges
 - Reduced emissions from urban transport (GHG, air pollution and noise)
 - Safer dangerous goods transports to and across cities to avoid damages to the environment
- Efficiency-related challenges
 - Reduced internal and external costs caused by traffic congestion in and around urban areas
- Mobility-related challenges
 - Increased awareness and improved traveller information about mobility options including all modes of transport at urban level.

European policy framework

In order to tackle, *inter alia*, the above mentioned challenges, Intelligent Transport Systems in the context of urban mobility play an important role in the legislation and strategies of the European Union. The most important European Communications, Action Plans and legislation concerning urban ITS deployment include the following:

- The ITS [Directive \(2010/40/EU\)](#):

¹ EU energy and transport in figures, Statistical Pocketbook 2010, p. 18

- The ITS Directive is concerned with the coordinated and coherent deployment of ITS within the Union including the development of specifications and standards.
- [Action Plan on Urban Mobility](#)²:
 - This Action Plan focuses on sustainable urban mobility and is concerned with ITS deployment in urban areas in regard to “Action 20: ITS for urban mobility” (for example electronic ticketing and payment, traffic management, travel information, access regulation and demand management and opportunities via Galileo).
- [Action Plan for the Deployment of Intelligent Transport Systems in Europe](#)³:
 - The ITS Action Plan which was adopted to accelerate and coordinate the deployment of ITS is especially concerned with urban ITS in regard to “Action 6.4: Set up of a European Urban ITS collaboration platform on urban mobility”. As a result of this action the “Urban ITS Expert Group” has been established by the European Commission with key stakeholders and organisations.
- [White Paper “Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system”](#)⁴:
 - The White Paper, published in 2011, is concerned with competitive and resource efficient European transport systems which includes *inter alia* “clean urban transport and commuting”. The first goal for a competitive and resource efficient transport system and to achieve 60% reduction in GHG emissions is directly connected to future urban mobility: the use of “conventionally fuelled” cars in urban transport should be halved by 2030 and they should be phased out in 2050. Furthermore, major urban logistics should be CO₂ free by 2030. In addition goals 8 (the establishment of the framework for European multimodal transport information, management and payment system by 2020) and 9 (close to zero road fatalities on road transport by 2050) are concerned with urban mobility.
- [Green Paper “Towards a new culture for urban mobility”](#)⁵:
 - In the Green Paper on urban mobility the deployment of ITS in urban areas is clearly emphasised in section 2.3 “Towards smarter urban transport”.
- [Digital Agenda for Europe](#)
 - Action 92: Apply the Intelligent Transport System Directive in support of interoperability and rapid standardisation.

² COM (2009) 490

³ COM (2008) 886

⁴ COM (2011) 144

⁵ COM (2007) 551

- [A European strategy on clean and energy efficient vehicles](#)⁶:
 - According to this communication fully electric vehicles (FEV) are said to be most promising especially in urban use.

The deployment and improvement of urban Intelligent Transport Systems is a key issue in tackling European and local transport challenges now and in the future. To conclude, both existing and future challenges of urban transport and the European policy framework demonstrate the need for interoperable ITS deployment in urban areas for safer, cleaner and smarter transport.

ITS for sustainable urban mobility

Cities can tackle their transport-related challenges with the help of ITS. For instance, transport and road safety in urban areas can be improved by the deployment of safety-related ITS systems, such as advanced driver assistance systems protecting both drivers and Vulnerable Road Users (VRUs). Such systems should be based on appropriate European or global standards. Environmental performance and efficiency of urban traffic can be improved by introducing intermodal transport management systems such as coordinated traffic control; fuel use will decrease and the available capacity can be used efficiently.

In addition, public transport management systems and real-time traveller information improve the efficiency of the urban transport system by ensuring reliable transport times and facilitating the use of different modes of transport. Intermodal Transport Control Systems (ITCS) in cities can be deployed for services such as automatic transfer protection, demand responsive transport services and real-time passenger information. The use of different modes of transport can be facilitated as well by the implementation of multimodal mobility platforms. The roll-out of mobile broadband networks and the rapid uptake of smart phones and connected tablets has put a new tool for ITS in the hands of the traveller. ITS services will increasingly ensure that the traveller has all the relevant real-time information to choose the most appropriate transport mode.

There are also important opportunities for cost savings and improved services for cities through the use of facilities managing data for multiple services and/or multiple jurisdictions, as well as cloud computing giving flexible demand responsive information services.

ERTICO is involved in many projects which are concerned with making urban transport safer, cleaner and smarter. For instance the [In-Time](#) project pilots a pan-European approach to real-time traveller information, which is expected to reduce energy consumption and facilitate the use of different transport modes in urban areas. [TISA](#), the deployment platform for the RDS-TMC and TPEG-TEC standards, depicts another important activity concerning real-time traveller information. In the future smart solutions for urban goods transport in cities such as urban freight energy efficient services (as assessed in [FREILOT](#)), the improvement of city logistics chains (as assessed in [CityLog](#)) will help to ensure sustainable urban mobility as well. Cooperative systems will be a crucial factor in tackling

⁶ COM (2010) 186

transport-related challenges⁷. Safety-related, environment-related and efficiency-related challenges in urban areas and cities can be addressed for instance through applications and services such as cooperative urban network management (as assessed in [CVIS](#)), eco-traffic management and control, and dynamic access management as examined in the projects [eCoMove](#) and [COSMO](#). Furthermore, ITS will support the introduction of electric vehicles⁸ into the market and help to achieve the goals set up by the European policy framework.

ITS has and will have an especially positive impact on the mobility of goods at urban level - often the cause of pollution, infrastructure damage and congestion. ITS provides the necessary information and management tools to optimise the usage of different modes of transport, to optimise distribution and give more efficiency to “last-mile delivery”, to achieve more efficient routing within cities and to improve loading-unloading parking management.

What is needed is to ensure the effective collection and exchange of traffic related information in the future with respect to all traveller and goods transport. Based on this ITS will provide all the information to the traveller, driver, traffic manager, logistics company and fleet operator to enable appropriate decisions and support. The deployment of the aforementioned applications and services contributes substantially towards creating safer, cleaner and smarter urban transport systems. ITS is a crucial element for sustainable urban mobility.

ITS deployment in urban areas

The institutional setting for implementation and advance planning of Intelligent Transport Systems are important factors for the outcome and the success of ITS deployment in urban areas.

ITS deployment, especially in urban areas, should always be in line with the urban planning vision and should be fully integrated within the cities’ overall transport strategy in order to realise the full potential of ITS. As pointed out in the ITS City Pioneers Toolbox and Planning Handbook there are four steps for successful ITS deployment:

- Step 1: Why ITS?
- Step 2: Which ITS?
- Step 3: How to deploy?
- Step 4: “Do it!”

First the city has to decide on local needs and goals; it has to be determined which individual challenges the city has to face and which ones should be prioritised. Second, according to these challenges, a local ITS vision/traffic management plan should be set up to enable appropriate ITS deployment which can support the city in solving its transport-related problems in the best possible way. The third step is to set up a local ITS plan which determines the ITS measures to be taken for a successful answer to the challenges

⁷ ERTICO is launching a European “Cooperative Mobility Alliance” in order to facilitate the introduction of cooperative systems. For further information, please contact [Paul Kompfner](#).

⁸ Please consult the ERTICO [thematic paper on “ITS for electrification of vehicles within the transport system”](#)

according to the goals set in the beginning. To identify proper measures and to get informed about results achieved in other implementations (cost-benefit) the ITS toolkit can be used, as it was developed by 2DECIDE to contribute to the ITS Action Plan Activity area 6.2. As a fourth and final step the chosen ITS measures have to be implemented.

Local authorities need tailor-made solutions because every city is different, facing many diverse urban mobility challenges. On the other hand, the basic problems to be solved are rather generic. This calls for global or EU-wide solutions with economies of scale complemented with “local apps” that can be downloaded as you travel. Mobile network operators, back end service providers and developer communities can enable this type of global solution with local adaptation.

However, it is vitally important for cities to know that ITS applications procured are fulfilling the expectations of their citizens in the long term and are cost-efficient. Reliability, interoperability, continuity of services and compatibility are important quality criteria for ITS applications and services. It is useful for cities to receive advice on the quality of ITS applications and services before making tender and procurement decisions.

Conclusion

The transport-related challenges European urban areas are facing concerning sustainable urban mobility are similar, but due to the individual nature of each and every city it is not desirable to focus on one ITS deployment concept that fits all, rather to create a basis which facilitates the choice of appropriate ITS measures. It has to be ensured that ITS offers a good cost-benefit-ratio and that quality criteria are met.

The development of the ITS City Pioneers Toolbox and Planning Handbook was one step taken in the past to foster ITS deployment in urban areas. ERTICO will strengthen its support for cities to find tailor-made interoperable solutions for seamless urban ITS deployment. The ERTICO Partnership has the expertise to provide regional and local governments and cities with access to ITS knowledge and with support in deploying suitable, interoperable, successful and sustainable Intelligent Transport Systems.

The ERTICO Partnership can serve as a platform for information, training and knowledge exchange for public and private stakeholders. The deployment of ITS in urban areas is crucial to solve the problems of today and to ensure sustainable transport in the future. ERTICO is developing an initiative with cities and other organisations to foster information exchange and mutual support for the deployment of ITS for bringing more intelligence into urban mobility. A crucial element of this initiative should also be to exchange information on the costs and benefits of already implemented ITS solutions in cities.

The ERTICO Partnership invites cities and related ITS stakeholders to become part of this initiative (please contact: [Hermann Meyer](#)). As a first step, ERTICO invites cities and related ITS stakeholders to a Forum on “[ITS for Urban Mobility](#)”, taking place in Brussels on 1 December, to discuss this initiative further.