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Review of intelligent transport solutions in Latvia

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Abstract

The goal of the following paper is to make a review of existing intelligent transport solutions in Latvia. The results of the review were part of the RITS-NET project, implemented in frame of INTERREG IVC programme by consortium of partners from 9 EU countries, including Latvia. The project aims at enhancing regional sustainable transport policies via an increased knowledge and understanding of the full potential of Intelligent Transport Systems (ITS) solutions and ways to deploy them. To reach the goal the state-of-the-art of intelligent transport solutions in Latvia was completed, taking into account following subtopics: Emergency Management and Incident Services; ITS for Traffic Management and Mobility; Parking and Automatic Payment; ITS for Public Transport Management; Fleet Management and Freight. On each subtopic the careful review of existing solutions were completed and described.

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1. Introduction

Modern information and communication technologies plays significant role in establishment of the sustainable transport network, usually the definition of the sustainable transport network includes direct reference to the potential users of the transport, as example “satisfying current transportation and mobility needs without compromising the ability of future generations to meet these needs” (Black, 1996) or the definition from Centre for Sustainable Transportation (Cst.uwinnipeg.ca, 2016) "sustainable transport system as one that:

- allows the basic needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health, with equity within and between generations;
- is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy
- limits emissions and waste within the planet’s ability to absorb them, minimizes consumption of non-renewable resources, reuses and recycles its components, and minimizes the use of land and production of noise".

The definitions mentioned above point on wide range of factors, which must be taken into account developing sustainable transport network, but in the center is a person, who is a user of the transport network. As one of the effective tools the use of information communication ICT could be declared. By using ICT the transport network become "intelligent" and more "friendly" to the end users. But implementation of ITS is an issue of different factors: financial abilities of the city/region/country, readiness of the end users to accept new solutions etc.

The paper goal is to make the review of the intelligent transport solutions in Latvia. In order to make review more detailed and structured the following declaration of ITS subareas was used: Emergency Management and Incident Services; ITS for Traffic Management and Mobility; Parking and Automatic Payment; ITS for Public Transport Management; Fleet Management and Freight. The definition of the areas was done based on experience from RITS-NET project (RITS-NET, 2016) and POLITE project (Yatskiv et al., 2013) both completed in frame of INTERREG IVC programme.

2. State-of-the-art of intelligent transport solutions in Latvia

Following section describes the review of the ITS solutions use in Latvia for different fields of activities: Emergency Management and Incident Services; ITS for Traffic Management and Mobility; Parking and Automatic Payment; ITS for Public Transport Management; Fleet Management and Freight.

2.1 Emergency Management and Incident Services

Emergency management and incident services are not well developed in Latvia from point of ITS. Two national emergency service institutions are responsible for managing an emergency and incidents: State Fire and Rescue Service and Emergency Medical Service. The structural units of both are located across all Latvia.

Latvia supports single emergency telephone line - 112. The single emergency telephone line is operating since 1997. From organization point of view: Central call station is located in Riga, additionally 4 regional call stations are operating. Single emergency telephone service receives around 5000 calls per day.

On 2011 the Minister of Transport signed the Memorandum of Understanding for Realisation of Interoperable In-Vehicle eCall (Eena.org, 2011). In 2016 one of the biggest mobile operators of Latvia Tele2 announced that it has prepared its communication network for the introduction of the eCall system (Telecompaper.com, 2016). According to the plans following important dates could be noted (Eu2015.lv, 2016):

- From 31 March 2018, car manufacturers will have to equip all new models with an in-vehicle technology that will communicate with the 112-based eCall interoperable service
- The infrastructure for the eCall system should be in place by 1 October 2017. Its use will be accessible to all consumers and free of charge.

2.2 ITS for Traffic Management and Mobility

Traffic and Travel Information is a key element of ITS deployment. As the part of EU Latvia shall follow and harmonize national policy with EU directives. In 2010 EU has published directive 2010/40/EU (EU, 2016), the directive refers to the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport. ITS in Latvia is still under development and most important that there is no one strategy how ITS system should be developed and implemented. But following services and ITS solutions in frame of Traffic and Travel Information area related could be mentioned here as examples:

Traffic Information

Traffic information and control centres for national road network and some big urban municipalities (Riga, Jelgava), as public services, were introduced in the last five years, having primary orientation on common needs of road users. For instance, traffic information centre of national road network receives notifications on critical traffic situations from different official bodies and road users, as well as has a direct input from the field devices. Traffic

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