INTRODUCTION

In the domain of road safety, Vulnerable Road Users (VRUs) have not benefited from the decrease in fatalities experienced by other categories of road users. While fatalities of all other categories are decreasing, fatalities among Vulnerable Road Users are stable or even increasing. According to the CARE (Citizens Consular Assistance Regulation in Europe) database 2009, inside European urban areas, pedestrian fatalities represent more than 35% of all fatalities. There is a national and European societal imperative to address the safety of Vulnerable Road Users. Mobility and comfort in traffic using a VRU-centric ITS approach combined with communication with vehicles or infrastructure can contribute to this.

THE PROJECT VRUITS

The Project VRUITS (Improving the Safety and Mobility of Vulnerable Road Users through ITS Applications) investigates how the safety and mobility of pedestrians, cyclists, Powered-Two-Wheelers and elderly drivers can be improved with ITS applications. The research includes the improvement of the usability of different applications and the integration of VRUs in cooperative traffic systems. Selected applications will be demonstrated in the Netherlands (Helmond) and Spain (Valladolid).

Figure 1: A busy street crossing.
The VRUITS project is co-funded by the European Commission (DG MOVE). It started on 1.4.2013 and has a duration of 3 years. The project will achieve the following objectives:

1. Assess societal impacts of selected ITS and provide recommendations for policies and industry on their usage, in order to improve the safety and mobility of VRUs;

2. Recommend practices on how Vulnerable Road Users can be integrated in Intelligent Transport Systems and on how HMI designs can be adapted to meet the needs of VRUs, on the basis of evidences and through field trials.

**Workplan**

In more details, VRUITS has the following major phases. The project consists of two vertical work packages: WP1, Project Management and WP7, Dissemination and Exploitation, and five horizontal work packages (WP 2-6). Figure 2 shows the structure of the VRUITS project.

**WP1: - Project Management**
**WP2: - VRU user needs, ITS prioritisation and methodology**
**WP3: - Impact assessment**
**WP4: - Recommended practices for ITS applications**
**WP5: - Innovative ITS applications**
**WP6: - Recommendations and conclusions**
**WP7: - Dissemination and Exploitation**

The main objective of this project is to determine, assess and rank the recommendations regarding ITS applications in order to improve the safety and the comfort of VRU users. WP6 starts from the results of the previous work packages, especially WP2 (scenarios), WP3 (ex-ante and ex-post impact assessment), WP4 (draft guidelines for improvement of the HMI and integration of VRUs in cooperative traffic systems) and WP5 (pilot evaluation results). WP6 makes use of the findings of the previous work packages to investigate how the full potential of ITS applications, as identified by the safety, comfort and cost-benefit assessments, can be realised – through identifying and assessing the measures which should be taken by industry and by the authorities.
FIRST RESULTS: ACCIDENT AND USER NEED ANALYSIS AND PRIORITIZATION OF ITS FOR VULNERABLE ROAD USERS

The work in the first months is concentrated on the accident analysis for VRUs and the identification of the user needs regarding ITS applications.

Work in accident analysis is concentrated on identifying the critical scenarios for different types of VRUs. Starting from an analysis of the EC CARE database, hospital databases and in-depth studies, the circumstances of the accidents of VRUs including common causal factors, pre-crash manoeuvres and collision circumstances (road-type, speed, environmental conditions etc.) to determine ‘critical situations’ for VRUs.

The user needs of VRUs regarding ITS for improving safety and mobility are examined through literature review, focus groups and expert interviews. In four countries (Austria, Spain, Finland and the Netherlands), six focus group discussions with different VRU groups representatives were held.

DISSEMINATION

The activity of dissemination and exploitation is very important and is required for the entire duration of the project. Dissemination has as its focus three dedicated project Interest Group Workshops, involving the various actors in the domain of VRU systems development and implementation.

The Workshops will have the goal to keep the stakeholders updated on project results, to receive feedback, potentially influencing the project evolution, and evaluating its achievements and final results.

Directly integrating both experts and relevant VRU groups from different European regions and correspondingly different traffic systems an up-to-date knowledge base of actual user needs towards ITS solutions allows for a generalization of requirements and demands on newly developed technologies.

Starting from an analysis of the EC CARE database, hospital databases and in-depth studies, results of previous studies examining VRU safety, the user need analysis, and an inventory of ITS applications, the ITS applications which address the critical needs of VRUs are identified.

The results of this work will be discussed in the First Interest Group workshop, which will be held on 18 September at Ertico in Brussels. The main purpose of the workshop is to prioritise the ITS applications together with stakeholders. Based on the prioritised list, the services for which the impact on safety and mobility will be assessed during the second phase of the project will be selected.

In particular, the significant results of the VRUITS projects will be assessed at the three different milestone points during the three years of the project by collecting useful feedback about the project interim results, extracting direct input from the participants from both the Users and Suppliers side. The workshops will also be the mechanisms whereby the project outcomes will be disseminated to the interested parties.
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no: 321586.
Safety and Mobility of Vulnerable Road Users
ITS applications addressing the needs of VRUs

First Interest Group Workshop, 18\textsuperscript{th} September 2013, \textbf{ERTICO}, Brussels

\textbf{VRUITS} Consortium is pleased to invite you to the 1\textdegree Workshop
Organised by the VRUITS project and co-chaired by \textbf{iMobility Forum VRU WG}

The \textbf{VRUITS} project, sponsored by the European Commission (DG MOVE), aims at providing recommendations regarding Intelligent Transport Systems (ITS) applications for the improvement of the safety and mobility for Vulnerable Road Users (VRUs such as pedestrians, cyclists, PTWs, special user groups, elder drivers).

\textbf{VRUITS} will assess the societal impact of selected ITS applications and provide recommendations for policy and industry regarding ITS in order to improve the safety and mobility of VRUs.

The \textbf{VRUITS} project wants to discuss the results of the first half year of work, on the identification of the main critical scenarios and the user needs of VRUs, by joining forces with the iMobility Forum Vulnerable road users working group and discuss the most promising ITS applications.

The \textbf{iMobility Forum} is a joint platform open for all road stakeholders interested in ICT-based systems and services. The Working Groups of the iMobility Forum are focusing on domain-specific priority areas that are important for the implementation of the European Commission policies.

Within the context of the \textbf{iMobility Forum}, aiming at well-established targets related to safety and efficient transport and road management by using Information and Communication Technologies, a new Working Group on Vulnerable Road Users safety (VRU WG) has been established.

The VRU WG aims at creating a forum encompassing all key stakeholders in the area of Vulnerable Road Users safety enhancement, and at contributing to the specific objectives and targets of the European Commission addressed within the “Horizon 2020” initiative.

During the workshop, participants will gain a better knowledge on the needs of VRUs, and on the possible applications which may improve the safety and mobility of VRUs.

The planned outcome of the workshop is a list of ITS applications, which will be assessed in more detail during the project lifetime.

For further information and to confirm your participation please contact:
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Read our Newsletter on http://www.vruits.eu/Newsletters
Programme

10:00  Participants Arrival at ERTICO ITS EUROPE premises and Registration
10:30  Participants welcome
10:40  Introduction to VRUITS project
10:50  iMobility Forum VRU WG
11:05  Road safety and vulnerable road safety in European cities
11:20  Identification of major critical situations for VRUs

Discussions and comments

11:50  VRU user needs regarding ITS
12:10  Prioritization of ITS for Vulnerable Road Users
12:30  Discussions and comments
12:50  Lunch

14:00  Group discussions: Prioritization of the applications (3 groups)
14:10  Group 1: Prioritization of ITS for pedestrians

Group 2: Prioritization of ITS for cyclists
Group 3: Prioritization of ITS for PTWs

15:40  Coffee break
16:10  Conclusions from each discussion group
16:40  Feedback form
16:50  Summary and Closing of the 1st Interest Group Workshop