

RISING: Broadcasting Localised Information

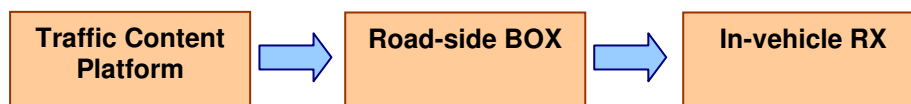
Abstract

Road safety is a major concern for all of us. Although things have improved in recent years, the number of road fatalities is still unacceptably high. In 2005, road accidents killed over 40000 people in the European Union and injured more than 1.2 million. RISING allows the reception of accurate, localised and real-time traffic information inside vehicle enabling drivers to react in time, reducing their speed, looking for alternate routes and increasing their awareness. In this sense, RISING contributes to the increase of road safety by broadcasting localised and real-time Traffic and Travel Information to vehicle drivers.

Description

Late 2004, WIT-Software established a contract with the European Space Agency (ESA) for the RISING project. The project "RISING - Road Information System for Next-Generation Cars" intended to contribute to the increase of road safety by providing localised and real-time Traffic and Travel Information to vehicle drivers by using satellite communication with Wi-Fi Technology as well as the TPEG protocol supported by the European Broadcasting Union (EBU). In this sense, RISING is a technology platform that exploits the convergence of wireless and satellite communication to help the broadcast of localised, relevant and time-sensitive traffic information to the vehicle drivers with the main goal of increasing the safety in the roads and motorways and reducing the numbers in car accidents.

RISING comprises three subsystems: **Traffic Content Platform, Road-side BOX and In-Vehicle RX**. These subsystems constitute the infrastructure that is necessary to operate the system.



The Traffic Content Platform provides a **multi-channel portal for provisioning and distribution of Traffic and Travel information**. It is simple to install, operate and manage providing a flexible solution for collecting and storing all incidents occurred on the entire road network.

Located at the last-mile of the network, the Road-side BOX enables the **broadcast of localised real-time traffic information to the vehicles moving nearby**. The Road-side BOX manages a WiFi/802.11b network of about 1.2 Km coverage length for distributing contents to the receiving equipment installed inside vehicle. The Wi-Fi technology is currently available on commercial off-the-shelf equipment such as the PDAs which makes it the elected, nevertheless, other wireless technologies like WiMAX may be adopted. The Traffic Content Platform sends traffic information to the Road-side BOX using an appropriate terrestrial/satellite network. The Road-side BOX manages the received content and broadcast it to the vehicles.

The In-vehicle RX is a Pocket PC solution able to **receive Traffic and Travel information inside moving vehicle** directly from Road-side BOX or Traffic Content Platform subsystems.

RISING is aimed to provide accurate, real-time information to all vehicles on those motorways that are equipped with the hotspots and our software. Thus, traffic participants will be enabled to react in time, reducing their speed, looking for alternate routes and increasing their awareness.

RISING currently provides the following traffic information: (i) roadwork activities, (ii) accident notifications, (iii) traffic congestion, (iv) speed recommendation and (v) weather conditions.

The goal of WIT-Software is two-fold:

1. Get advantage of the acquired know-how

In the scope of the RISING project, WIT-Software acquired relevant know-how that would be advantageous for new European projects (FP7) targeting cooperative systems using Vehicle-to-Infrastructure (V2I) and Vehicle-to-Vehicle (V2V) communications. Our communication solution is unique and efficient for pushing data information into mobile devices by using Wi-Fi networks. This can be used not only for pushing information to moving vehicles but also for pedestrians (e.g. broadcast tourist information, advertising, etc.). Many applications could be implemented using the acquired knowledge.

2. Roll-out of project, RISING II on FP7

RISING is a new way for delivering location-based information using wireless internet access points. Our goal is to implement a pan-european roll-out of the RISING project by installing an infrastructure of hotspots in the motorways and within cities providing traffic and travel information. Additionally, new value added services should be developed. For instance, use the RISING platform for providing parking information; rail, bus and boat timetables; tourist information (local attractions, points of interest), localised advertising (restaurants, hotel and accommodation, camping, shopping, gas stations, companies), useful contact numbers, etc. All these localised information could be received on moving vehicles or by pedestrians using their own mobile device (mobile phone, PDA, satnav).

This infrastructure could also provide other services for large-scale events like the Olympic and Paralympic Games.

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