SAFESPOT INTEGRATED PROJECT - IST-4-026963-IP

DELIVERABLE

SP5 – CoSSIB: Cooperative Safety Systems Infrastructure-Based

Specifications for Safety Margin for Assistance and Emergency Vehicles

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EXECUTIVE SUMMARY

The CoSSIB sub-project of the Integrated Project SAFESPOT aims at specifying and developing co-operative system applications based on infrastructure and vehicle-based sensing, with the support of roadside equipment for communicating safety-related messages.

This deliverable reports the specifications of the CoSSIB application Safety Margin for Assistance and Emergency Vehicles (SMAEV).

Although the activity of specifications WP3 started from the CoSSIB use-cases and requirements outlined in WP2, a revision of functionality of SMAEV application was needed. In fact, the original description was targeted only on the safe operation of Assistance and Emergency Vehicles (AEV) that is mainly the prevention of accidents involving these special means of transport. Whereas from later discussions it turned out that the possibility of interfacing these vehicles with the VANET could also give the opportunity to enhance their functionality, and turn them into SAFESPOT Mobile Road Side Units (MRSU). SMAEV in its final definition is an application which accounts for the following scenarios.

- An Assistance Vehicle can reach the site where an event (i.e. congestion, accident, road maintenance) has happened or is happening, and perform event signalling in a SAFESPOT compliant way: the signalling strategy is loaded on the basis of the LDM content, and the warning itself is performed both through the VANET and through a VMS placed on the rear-top of the Assistance Vehicle.
- An Emergency Vehicle on rescue missions can cross a SAFESPOT intersection with due priority and in safe conditions, by communicating with a Roadside Unit placed at the intersection.

These functionalities are performed in a semi-autonomous way: it is the on-board system that decides warning strategies, actuates signals, communicates with external entities, but it is actually the AEV operator that chooses the basic actions to undertake and confirms/denies signalling changes through an appropriate Human Machine Interface.

This approach makes AEV an entity that complements the other entities and completes the SAFESPOT system coverage. Indeed, these vehicles can reach the areas which cannot be reached by static roadside units. Moreover, with respect to SAFESPOT vehicles (the other candidates for full area coverage), they have the following distinctive features: they can manage events and provide “validated” information by means of their operators; and they don’t reach the black-spots by chance, but upon a specific mission given by an external information centre.

The present report illustrates these concepts and provides the SMAEV application specifications.