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SIXTH FRAMEWORK PROGRAMME

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## Executive Summary

The COMeSafety Specific Support Action has in its key objectives the creation of direct communication channels between the results produced by the European projects that are working on the design and development of cooperative systems for road safety and traffic efficiency based on vehicle to vehicle and on vehicle to infrastructure communication and the related standardisation bodies.

This crucial role is conceived to enable win-to-win solutions where from one side the standardisation bodies will benefit from the availability of relevant project activities and outcomes, from the other side running projects will benefit from the possibility to directly communicate to the standardisation bodies the information related to the core technologies necessary for V2V and V2I communication, like the system architecture and security aspects, the communication protocols on all layers of the protocol stack, the radio technology in use.

Standardisation bodies addressed by the COMeSafety Specific Support Action are: ISO, CEN, ETSI, IEEE.

As a platform for collection of standardization requirements for V2V and V2I the European COMeSafety is also supporting the eSafety Forum WG Communication.

Additionally, in light of understanding the extent to which a future harmonisation can be established at worldwide level, COMeSafety is also activating a number of links between relevant running European projects and related initiatives in Europe (e.g. the Car to Car Communication Consortium, C2C-CC) and in the USA (e.g. Vehicle Safety Communication, VSC) as well as in Japan (e.g. Advanced Safety Vehicle, ASV).

# 1 Introduction

The current developments of applications based on vehicle to vehicle and on vehicle to infrastructure communication require that all vehicles and local infrastructures have to be linked in a communication network using a common technology and protocol.

For this reason running projects like SAFESPOT, CVIS and COOPERS are working towards a common architecture for cooperative systems.

The SAFESPOT project is committed to implement a local high speed and ad hoc network as defined by the C2C-C Consortium. This network, based on the IEEE.802.11p protocol, will be shared by safety and traffic efficiency applications and it is expected to be integrated with the CALM architecture whose cooperative applications are under development in the CVIS project.

Future vehicles are expected to have on board a CALM-like interface together with a C2C-like dedicated communication channel. As all safety related information need high reliability and depending on the traffic situation low latency they will have the priority over all other applications via dedicated channels. If needed, then all safety information will be further propagated via the first available channel (e.g. towards a traffic control centre).

A very crucial topic on which Europe should join its efforts is the availability of appropriate frequency spectrum with effective protection for safety related cooperative applications. In USA a specific frequency band has been allocated by the Federal Communications Commission for vehicle to vehicle and for vehicle to infrastructure, while in Europe the design and development of communication based system and applications have been started without the allocation of a frequency band. This fact makes frequency allocation an urgent matter of strategic relevance for Europe.

It is for these motivations that the COMeSafety Specific Support Action has the task to establish the link between the OEMs (members of the C2C-C Consortium), the other stakeholders, the European Commission, the eSafety Forum Working Group on Communications and the Standardisation bodies to promote the allocation of an appropriate frequency band, to support the running projects in their design of a common communication architecture and to bring to the standardisation bodies all the inputs from the running projects related to the communication system parameters (e.g. data rate, communication range, transmission power), the distribution of data and priority management for messages for an efficient use of the radio resources (several applications will have to share the transmission capacity).

The overall aim of the actions towards the appropriate standardisation bodies is therefore to facilitate and support the

cooperation of the C2C-C consortium, the running European projects on cooperative systems for safety and mobility with the standardisation bodies.

The work of relevant standardisation bodies is constantly monitored and is included to the COMeSafety newsletters that are distributed to the user forum every six months.

Main actions from the COMeSafety Specific Support Action include:

- the cooperation in writing the ETSI standard documents related to the frequency assignment process and the communication system to fulfil formal and procedural requirements of the respective standardization bodies,
- feeding inputs to the ISO TC204 Transport Information and Control Systems in order to harmonize the European vehicle to vehicle and vehicle to infrastructure communication in generic communication architectures.

## 2 List of actions and outcomes related to standardisation activities [year 2006]

Date	Standardisation Body / Association	Action
February 2006	ETSI, ISO, C2C-CC	Joint meeting of ETSI TG37, ISO TC204 WG16 and the C2C-CC, with participation of representatives from C2C-CC and COMeSafety  Exchange of information and discussion of the architectural views.
<p><b>Notes:</b> Support to ETSI in the preparation of a System Reference Document, the participation to ETSI ERM TG37 meetings allowed the Consortium to support ETSI in preparing/revising part 2 and part 3 of the document on ITS at 5 GHz, in particular, by defining the request of a European harmonized spectrum of 30 MHz above the 5 GHz ISM band for road safety and traffic efficiency applications with the focus on Vehicle-to-Roadside communications and of additional 20 MHz in the ISM band for non-safety related Vehicle-to-Vehicle communications.</p>		
March 2006	ETSI ERM	Approval of the System Reference Document TR 102 492 part 2 requesting spectrum for road safety and traffic efficiency as well as for non-safety applications in the 5 GHz band.  This document has been drafted with contributions from COMeSafety.
<p><b>Notes:</b> Support CEPT with a document on justification of the frequency requirements for ITS services in the 5 GHz band. Participation of COMeSafety in the CEPT Frequency Management working group. The document was presented to the ETSI ERM in a meeting in June 2006 by TG37 and forwarded to the FM WG (Sept 2006) with a liaison statement. ETSI will then present the document to the FM WG meeting in September for further consideration in the frequency allocation process.</p>		
2/3 May	ETSI TG37	Participation of COMeSafety
21/22 June	ETSI TG37	
4/5 July	ETSI TG37	
June 2006	ACEA	ACEA created a Task Force on Radio Regulations with the aim to monitor and promote the activities of standardisation for automotive applications.  Members of the COMeSafety Specific Support Action joined the Task Force.

<b>Date</b>	<b>Standardisation Body / Association</b>	<b>Action</b>
November 2006	ETSI ERM TG37	Consideration of the first draft for a harmonized standard on: Electromagnetic compatibility and Radio spectrum Matters (ERM); Intelligent Transport Systems (ITS); Radio communications equipment operating in the 5 GHz frequency range; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive.

## References

Contact Points:

- CEN TC278: [www.nen.nl/cen278](http://www.nen.nl/cen278)
- ISO TC204: [www.isotc204.com](http://www.isotc204.com)
- ETSI: [www.etsi.org](http://www.etsi.org)
- CALM: [www.calm.hu](http://www.calm.hu)
- IETF: [www.ietf.org](http://www.ietf.org)
- Chairman ISO TC204 Michael Noblett, [Michael.Noblett@SEICCS.com](mailto:Michael.Noblett@SEICCS.com)
- Chairman CEN TC278 Henk Stoelhorst, [h.j.stoelhorst@avv.rws.minvenw.nl](mailto:h.j.stoelhorst@avv.rws.minvenw.nl)

## Annex 1 Acronyms

CALM	Continuous Air interface for Long and Medium range
CEPT	Conference of European Postal & Telecommunications
CENELEC	European Committee for Electro-technical Standardization
DSRC	Dedicated Short Range Communication
EC	European Commission
ECC	Electronic Communications Committee
EMC	Electro-Magnetic Compatibility
ERM	Electromagnetic compatibility and Radio spectrum Matters
ETSI	European Telecommunications Standards Institute
FCC	Federal Communications Commission
FS	Fixed Service
FSS	Fixed Satellite Service (Earth-to-Space)
FM WG	Frequency Management Working Group
FWA	Fixed Wireless Access
IEEE	Institute of Electrical and Electronics Engineers
ISM Band	Industrial, Scientific and Medical Band
IEC	International Electro-technical Commission
ITS	Intelligent Transport Systems
ITU	International Telecommunication Union
IVC	Inter Vehicle Communications
R2V	Roadside to Vehicle Communications
RSC	Radio Spectrum Committee
SE-WG	Spectrum Engineering Working Group
SRD	Short Range Device
SRD/MG	Short Range Device Maintenance Group
SRDoc	System Reference Document
TC	Technical Committee
TG	Technical Group