



Key Achievements of the SAFESPOT IP

Giulio Vivo

Centro Ricerche FIAT



Ministerie van Verkeer en Waterstaat



The SAFESPOT European Integrated Project



... Need to cooperate at European level to improve road safety and traffic efficiency.

years 2002 - 2004

- Car2Car Communication Consortium was born to promote the allocation of a dedicated frequency band for inter-vehicle communication.
- The European Commission Information Society and Media opened the call for proposal FP6-ICT-Call4 on cooperative systems.
- The European Council for Automotive R&D settled the Integrated Safety Program Board to support efficient and complementary research activities.

years 2006-2010

- The three IP projects CVIS, COOPERS and SAFESPOT, co-funded by the EC INFISO and supported by EUCAR, started their activities.

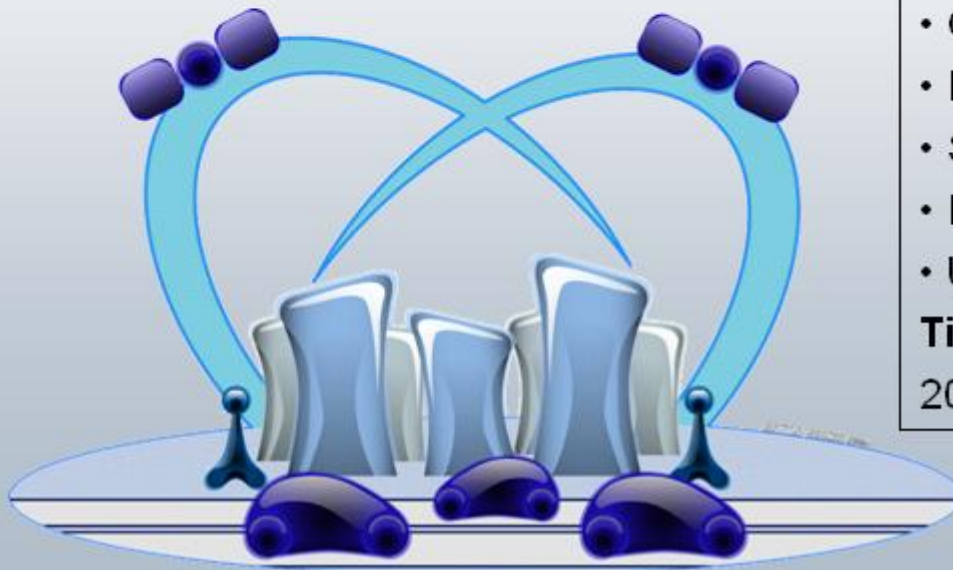


Ministerie van Verkeer en Waterstaat



Cooperative Systems for road safety “Smart vehicles on smart roads”

Detection in advance of potentially dangerous situations
to extend in space and time drivers' awareness of the surroundings.



Consortium

52 partners from 12 European countries

- OEMs (cars, trucks, motorcycles)
- ROAD OPERATORS
- SUPPLIERS
- RESEARCH INSTITUTES
- UNIVERSITIES

Time Plan

2006-2010

ENABLING Technologies: VANET.

Ad-hoc Dynamic Communication Network for information exchange

At a network level in Europe, C2C and SAFESPOT analysed and experimented protocols to provide a basic periodic message:

Cooperative Awareness Message (CAM)

CAM includes dynamic key parameters, it is broadcast every 500 ms by any node within the network, including the roadside units (RSU).

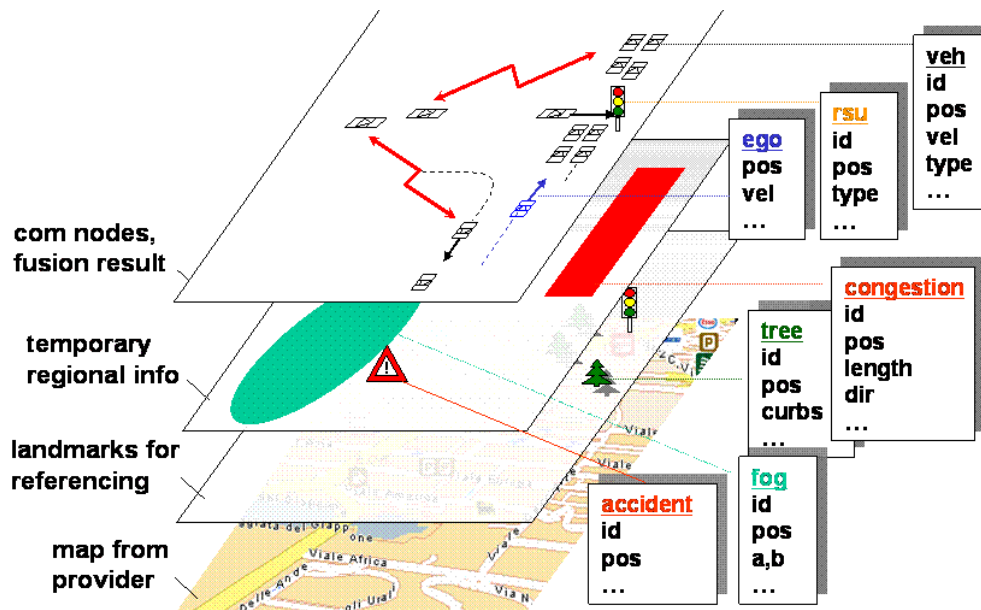
Messages are also **GEO-AWARE ADDRESSING** and **MULTIHOPPING**.

The selected radio technology is IEEE 802.11p.

ENABLING Technologies: Local dynamic maps

Evolution of the standard navigation maps to include and update in real time all safety related information on the traffic and on the environment.

The information are acquired from vehicle and road infrastructure sensing platforms and are exchanged via the ad-hoc dynamic network.



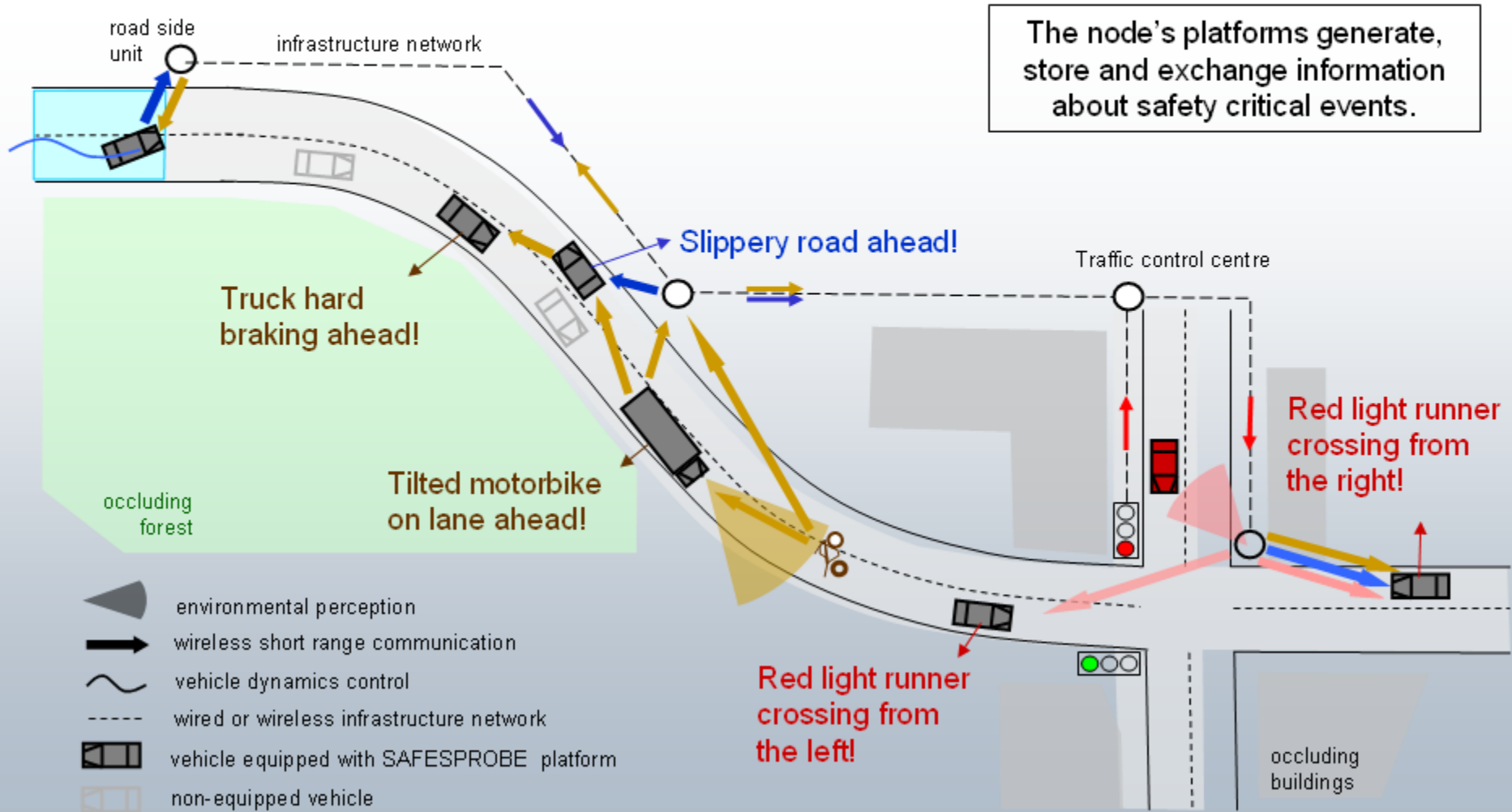
ENABLING Technologies: Relative Positioning among vehicles

High accuracy (0,5 m) for the exchange of **SAFETY TIME CRITICAL MSG**: SAFESPOT integrates data from different sources: road data from GPS, road landmark recognition and dead reckoning.

Most promising technique is based on dual-frequency satellite receivers combined with high-performance inertial platforms, technologies that are already available.

The challenge for the future is in optimisation, bringing down costs until they are comparable with the current GPS.

The SAFESPOT Scenario



The SAFESPOT Integrated Project Test Sites



CONCLUSIONS: Establishing a common architecture for cooperative systems

- SAFESPOT is in the task force led by COMeSafety in cooperation with CVIS, SEVECOM, COOPERS, PRE-DRIVE C2X projects to establish a “Common European ITS Communication Architecture”.
- SAFESPOT implements a local high speed ad hoc network, as defined by C2C-CC, based on the IEEE.802.11p protocol.
- SAFESPOT generated a complete set of messages (as an extension of existing C2C messages, together with its applications and the LDM) that is offered as contribution to C2C and ETSI standardization processes.
- The SAFESPOT IP, together with CVIS and COOPERS IPs is pleased to present its outcomes here in the Showcase 2010.

REFERENCE

Giulio Vivo - SAFESPOT IP giulio.vivo@crf.it

Centro Ricerche Fiat, (Italy)

www.safespot-eu.org

