

CoMoSeF

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Partners:

Ángel Iglesias, S.A. (IKUSI), Spain
 AROBS Transilvania Software, Romania
 CBT, Communication & Multimedia, S.L- Spain
 Centre Henri Tudor, Luxembourg
 Centria, Finland
 Entreprise des Postes et Télécommunications, Luxembourg
 Finnish Meteorological Institute, Finland
 HITEC, Luxembourg
 Infotripla Oy, Finland
 INNOVALIA (Asosacion de Empresas Technologicas), Spain
 ISBAK A.S., Turkey
 KocSistem A.S., Turkey
 Mobisoft Oy, Finland
 Taipale Telematics, Finland
 Technical University of Cluj-Napoca, Romania
 Thales Communications & Security, France
 Ubridge Co Ltd, Korea
 UTC CNRS Heudiasyc, France
 Viveris Technologies
 VTT Technical Research Centre of Finland, Finland

Co-ordinator:

Pekka Eloranta

Mobisoft, Finland

E-Mail: pekka.eloranta@mobisoft.fi

Project Website

www.celticplus.eu/project-comosef

www.comosef.eu

Co-operative Mobility Services of the Future

CoMoSeF has developed co-operative mobility solutions that are cost-effective and can be deployed in all kinds of vehicles and traffic environments. CoMoSeF has brought the intelligent transport solutions and services to market and created the needed business models in Finland, France, Luxembourg, Romania, Spain, Turkey and the Republic of Korea.

Main focus

CoMoSeF has focused on the development and deployment of advanced vehicle and roadside data collection solutions to gather traffic and condition related information and to provide weather and incident data for road users. The project has studied efficient networking and developed data dissemination and communication techniques based on the intelligent transport system (ITS) standards. CoMoSeF has developed, piloted and deployed commercially viable solutions and services that are easy to deploy in all kinds of vehicles and environments. Ten

pilot systems were implemented in the participating CoMoSeF countries and one additional pilot took place onsite during the Sochi 2014 Winter Olympics Games in Russia. The common Co-MoSeF architecture and communications were developed based on the existing and emerging standards such as the ITS Communication architecture described in ISO 21217 & ETSI EN 302 665, CAM Cooperative Awareness Message (ETSI EN 302 665), DENM Decentralized Environmental Notification Message (ETSI TS 102 637-3) and DATEX II information exchange (CEN TS 16157).

Approach

CoMoSeF continued the work carried out in two earlier Celtic projects dealing with co-operative intelligent transport systems (C-ITS); Carlink - Wireless Traffic Service Platform for Linking Cars (2006 – 2009) and WiSafeCar – Wireless Traffic Safety Network Between Cars (2009 – 2012). Carlink focused on technology testing and



Figure – Examples of the CoMoSeF pilot user interfaces

basic principles of C-ITS service provision. WiSafeCar concentrated on proof of concept and further developed the C-ITS services. CoMoSeF, in turn, has developed and deployed solutions and services. CoMoSeF has focused on new kinds of services utilizing both embedded systems and data from CAN-Bus, as well as lower-cost nomadic devices that are easy and quick to implement and deploy. CoMoSeF has successfully developed advanced services that are cost-effective, easy to take into use and can be deployed in all kinds of vehicles and environments. The deployed systems and services are based on existing and emerging standards. Indeed standardization of the services and technologies is crucial, when bringing ITS technology to the mass market.

Achieved results

The pilots in Tampere Finland have carried out scientific work related to the provision of road works and road weather warning, in-vehicle signage and probe vehicle data and developed concrete business opportunities between the partners.

The pilot in Ylivieska Finland determined the most appropriate means for visualizing traffic related data, and the most appropriate means of data communication.

The pilot in Sodankylä Finland

provided and delivered wireless weather related services to vehicles passing a Road Weather Station, and collected real-time vehicle data.

The French pilot exploited data issued from several vehicles communicating together and sent aggregated data and alerts to infrastructure and other affected vehicles in the network.

The Korean pilot implemented a framework for easy connection and data communication between devices in complex car networks. The framework was used to communicate with the in-vehicle nomadic devices and with the vehicular infrastructure.

The Luxembourg pilot provided specific services, such as real time traffic status. The pilot used standardised message format in their exchange with the central ITS station.

The Romanian pilot developed vision based driving assistance applications, and assisted fleets drivers with warning and routing information. A proprietary GSM/GPS tracker was developed and used to collect the CAN bus information and to communicate with the central servers.

The Spanish pilot enhanced the incident detection capabilities in the Basque Country roads, taking into account all the information provided by the different agents

involved. This goal was an immediate applicability in the day-to-day traffic activity on a very large region.

The Turkish pilot illustrated the functioning of proposed cooperative safety and mobility oriented services, through various use cases by making use of 802.11 p communication and concepts such as Local Dynamic Map.

The Sochi Winter Olympics pilot exploited road weather applications and services developed within CoMoSeF and other international ITS projects by FMI.

Impact

Based on the same common CoMoSeF architecture the project participants have been able to develop and deploy services and systems that provide accurate and reliable road weather information, warnings and forecasts, systems for analyzing and forecasting the condition of the road surface, visibility, weather, air quality, friction monitoring and friction forecasting etc. The pilots have taken into account, and contributed to, other important related European projects such as DRIVE C2X, FOTsis, etc. and also national strategic initiatives in participating countries. CoMoSeF results can help to increase traffic safety and fluency and to decrease congestion by providing traffic information, weather forecasts, warnings, etc. and helping to reach the ambitious objectives set by the European Commission.

About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new „Smart Connected World“ paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies

or universities and research organisations. Even companies outside the EUREKA countries may get some possibilities to join a Celtic-Plus project under certain conditions.

Celtic Office

c/o Eurescom, Wieblingen Weg 19/4

69123 Heidelberg, Germany

Phone: +49 6221 989 381

E-mail: office@celticplus.eu

www.celticplus.eu

