

ARTIC

Antenna Research and Technology for the Intelligent Car

Coordination Action

Overview

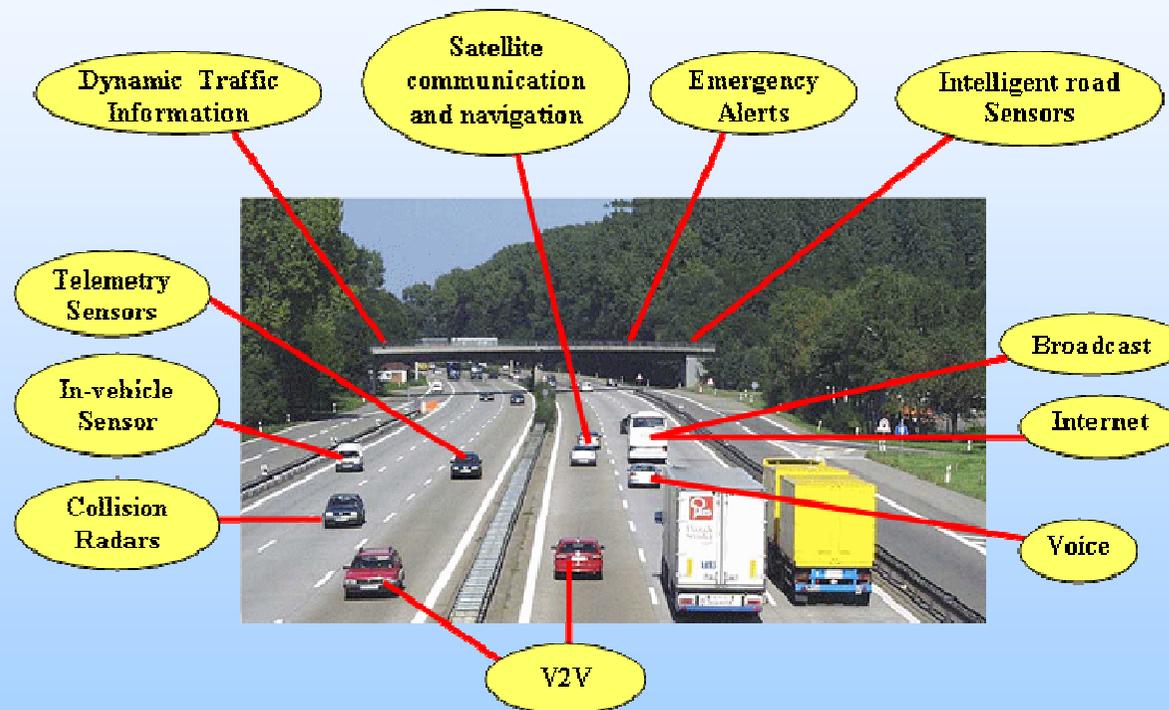
Dr. Bruno Casali

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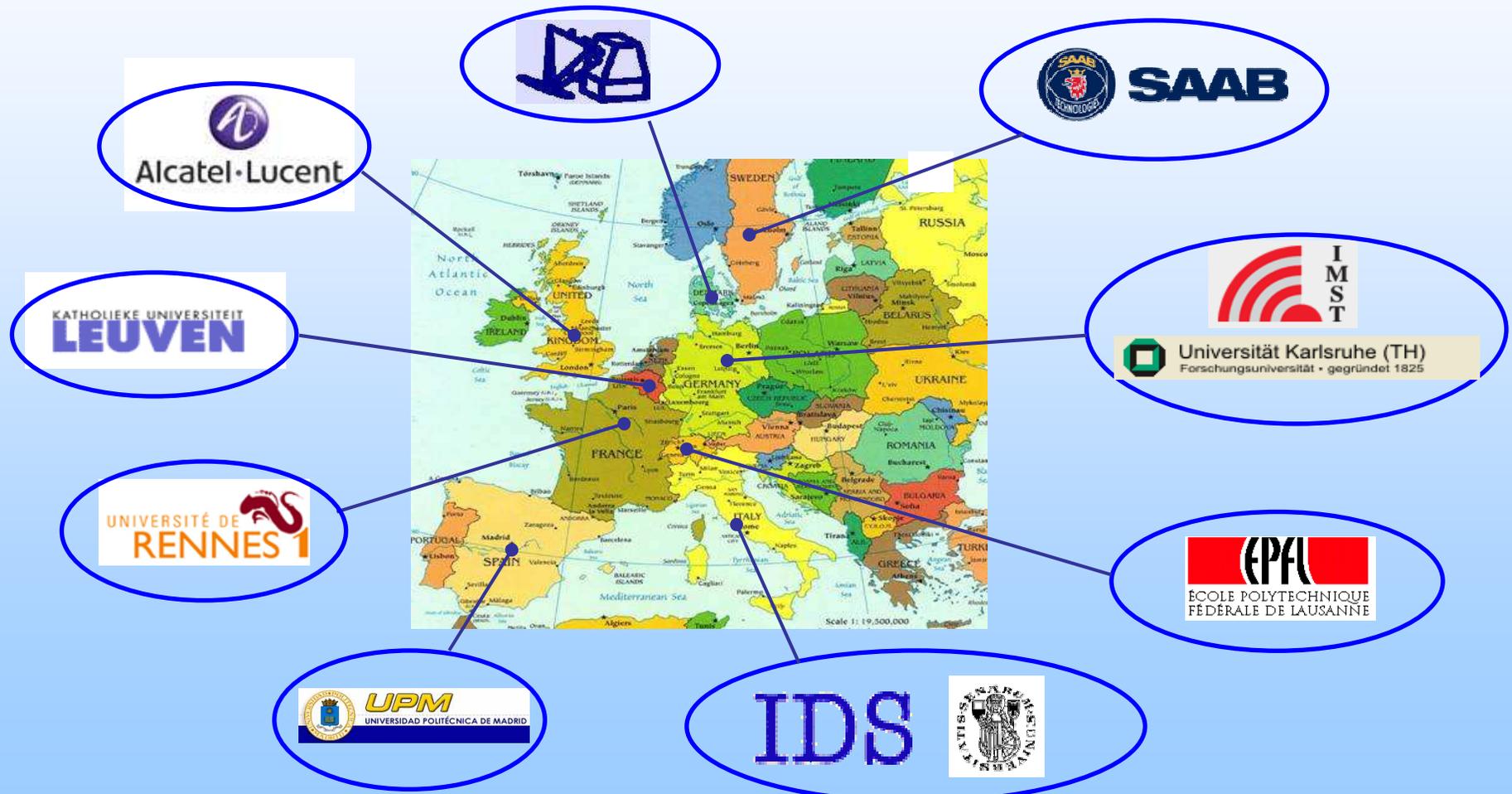
- **Proposal:** Submitted in call FP7-ICT-2007-2
- **Status:** Running
- **Grant Agreement:** Coordination Action
- **Timeframe:** from 1/04/2008 to 30/09/2010 (28 months)
- **Challenge:** ICT for mobility, environmental sustainability and energy
- **Objective:** Transfer of antenna technology knowledge
- **Activities:** Joined meetings, Workshops and Dissemination
- **Number of partners:** 11 from 9 European Countries
- **Total cost:** 466.000 € (EC Contribution : 361.000 €)
- **Project URL:** www.AntennasVCE.org

Advanced antenna technologies need to be developed in order to satisfy novel requirements emerging in the Automotive Applications, in line with the European *Intelligent Car Initiative*.



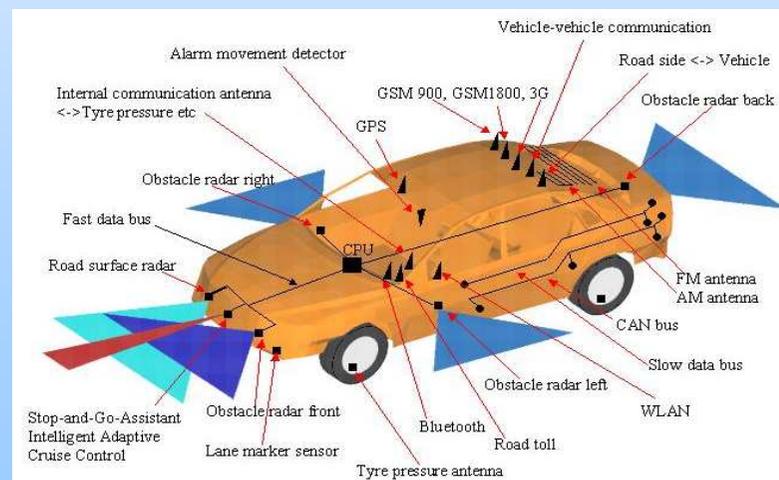
In the next future, complex antenna subsystems are expected to link the future transport infrastructure, for improved safety, higher efficiency, reliable information to drivers, etc.

The ARTIC Consortium includes 11 European Organisations, at top level of excellence in antenna research, from 9 European countries.



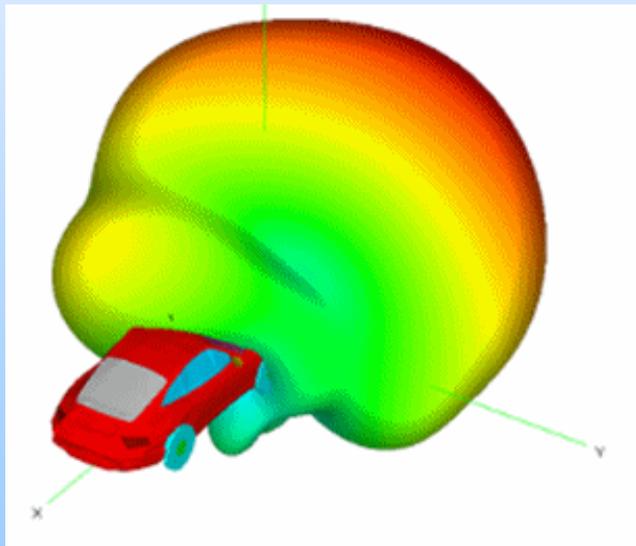
WP No.	Work package title	Type of activity	Lead partic. No.	Lead partic. short name	Person-months	Start month	End month
1	Antenna technology transfer	COORD	9	Saab Space	8,2	1	24
2	Software and Measurement best practices	COORD	2	KU Leuven	2	1	24
3	Workshops and other events	COORD	10	EPFL	4,5	1	24
4	Virtual Centre Initiative	COORD	1	IDS	3	1	24
5	Industrial Training	COORD	7	UNISI	3,5	1	24
6	Management	MGT	1	IDS	6	1	24
	TOTAL				27,2		

In WP1, the Antenna Experts Groups (Millimetre-wave and integrated antennas, Small terminal antennas, Wideband and multiband antennas, Reconfigurable antennas, Array antennas and Smart antennas) provide a full transfer-of-knowledge of the latest antennas technology available for V2V communications, real-time information on traffic and congestions, on-board sensors for vehicle efficiency etc.

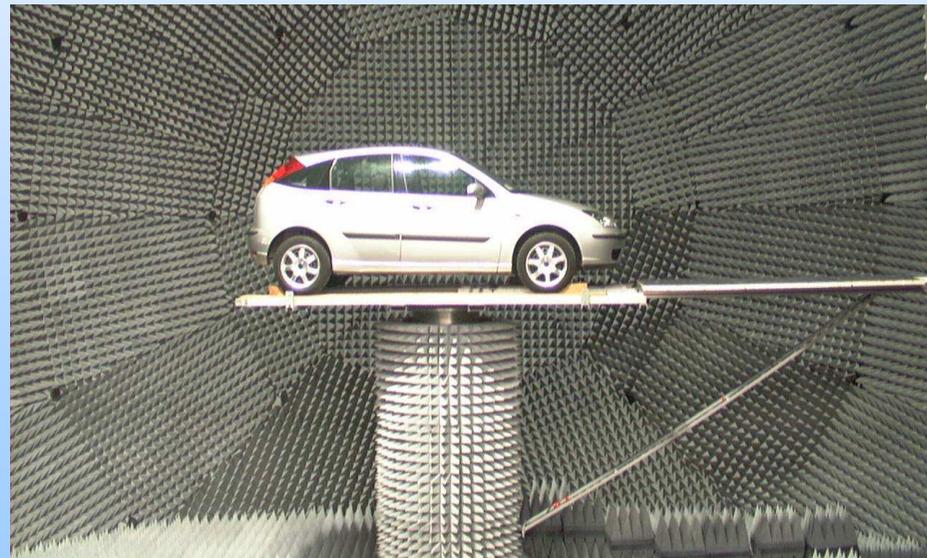


In WP2, the objective is to promote the ACE best practices in order to improve simulation and measurements of radio links in V2V and V2I communication, networks of in-vehicles sensors, measurement of vehicle antenna systems, etc.

An Electromagnetic Data Interface (EDI) is provided to the automotive researchers, for data exchange.



Obstacle radar antenna pattern



MIMO antenna measurement

WP3 is focused on organising events to spread antenna technologies related to latest evolutions in V2V & V2I communication.

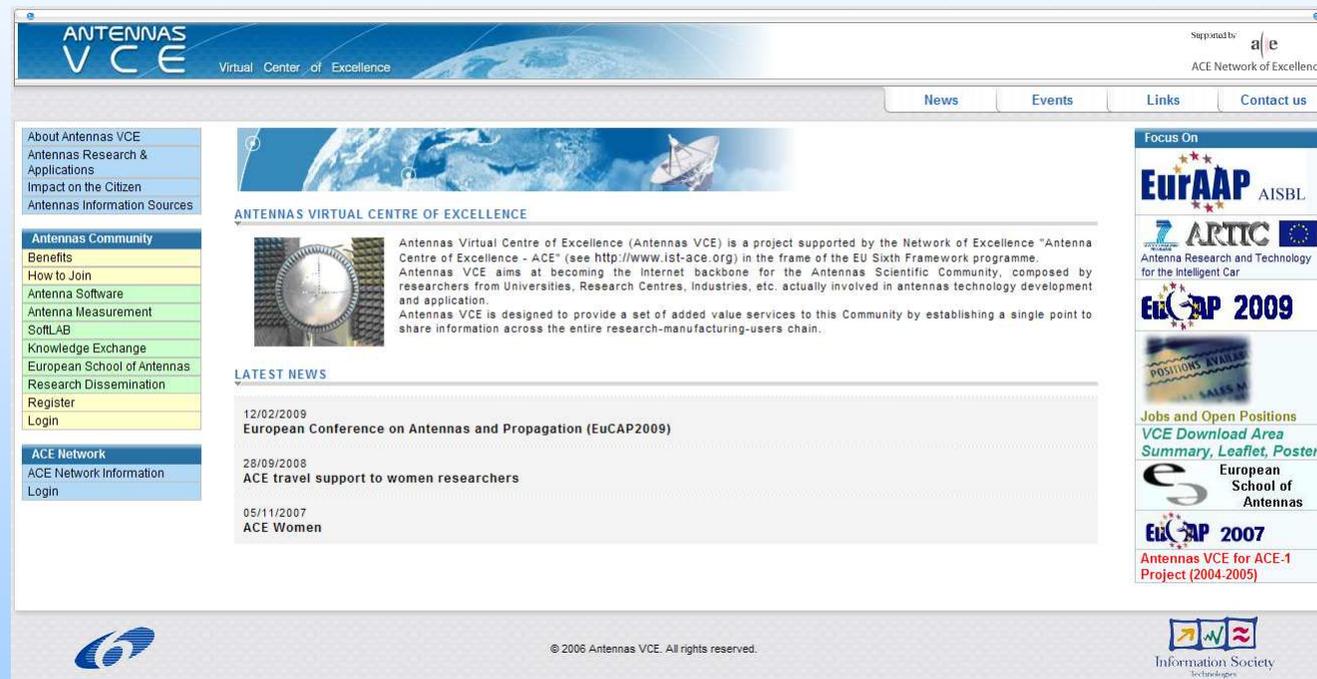
ARTIC sessions on antennas for automotive and annual workshops are organised at EuCAP, in order to disseminate the information towards scientific community.

		
<p><i>EuCAP'2006</i> <i>6-10 Nov. 2006, Nice, France</i> www.EuCAP2006.org</p>	<p><i>EuCAP'2007</i> <i>11-16 Nov. 2007, Edinburgh, UK</i> www.EuCAP2007.org</p>	<p><i>EuCAP'2009</i> <i>23-27 Mar. 2009, Berlin, Germany</i> www.EuCAP2009.org</p>



EuCAP'2010: The 4th European Conference on Antennas and Propagation 12-16 April 2010, in Barcelona, Spain

The WP4 is aimed at providing the ARTIC Virtual Centre, hosted by the ACE NoE Virtual Centre of Excellence. The project available on the web, towards the scientific community and the public.



ARTIC is reachable at www.antennasvce.org

In the frame of the already running ACE ESoA, the WP5 organises courses focused on automotive applications. A specific course on “Antennas for the Intelligent Car” is prepared, where scientists and manufacturers in V2V communications will be trained on latest antenna technology.



The European School of Antennas (ESoA)

ARTIC
Antenna Research and Technology for the Intelligent Car

ARTIC Industrial Training (AIT)
The prime intention of the ARTIC Industrial Training (AIT) is the dissemination of information for vehicle communications (AMWS-Systems, TV, DVBT, GSM/GPRS, OFD, QAM, VSB, ...). The course is based on the relevant fundamentals on antennas and the propagation channel. The specific mobile to base station and mobile to mobile radio channel characteristics will be presented. The relevant characteristics of vehicle antennas are evaluated, taking into account their functionalities and design aspects. Combining antennas and the radio channel, the inherent system aspects will be elaborated for DVB-T, SIMO and MIMO. OFDM spectrum allocation and standards, e.g. IEEE 802.11 will be discussed. One of the goals of the course is to present processes for the optimization of our integrated antenna systems prior to their hardware development and vehicle integration by „Virtual Driver“.

The course will be given by teachers from university and industry.

Further information: ARTIC Virtual Centre, at www.articproject.org

Registration: 7777 JRC/Esopa or UNIKA or VCE 777

Credits: PID students 3 ECTS
Grants: Grants for PID students are waived, travel support

Registration Fee:
PID students € 400,-
Industry € 1200,-

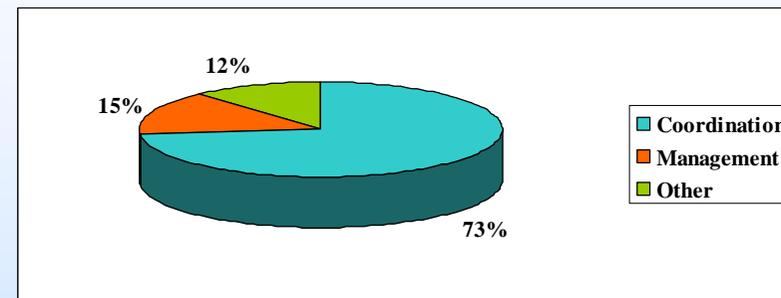
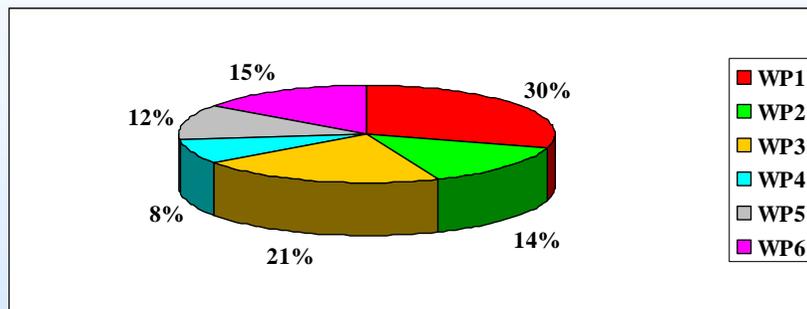
Hotel Information:
Hotel Le Terrazze, Ispra
Corso Arona, 26/200
I-28010 Ispra
38399-32000, Italy

07.-11. Sept. 2009
EU Joint Research Centre (JRC) Ispra, 21020 Ispra, Italy

Universität Karlsruhe (TH)
Research University - founded 1825

AIT Advanced courses (next in Sep. 2010)

The ARTIC budget is 361.000 € (with a project cost of 466.000 €).



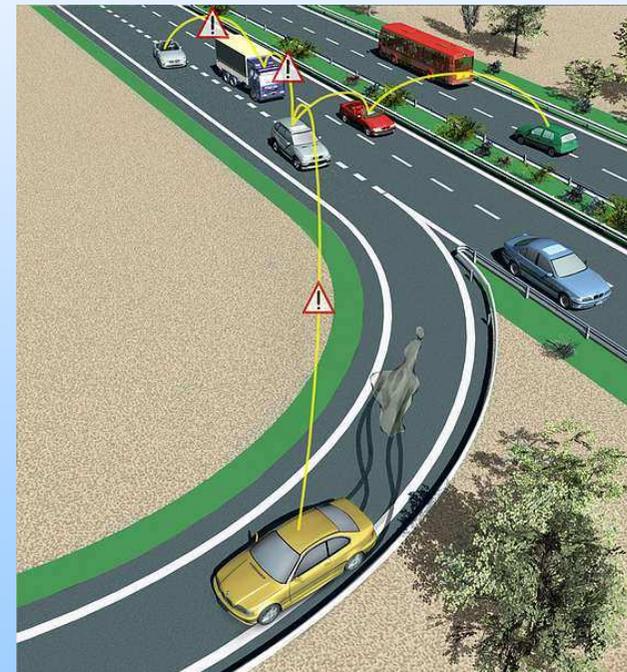
The ARTIC budget is peaked on WP1 and WP3, as showed, with the Coordination activities taking most of the budget.

A significant part of the budget (about 26%) has been reserved for:

- the ARTIC workshops and sessions
- the EDI development and dissemination towards automotive users
- the grants for the participants to the Training Courses.

ARTIC is expected to play an important role in creating interactions between Industry and Universities and in increasing the relevance, the efficiency and the quality of the antennas for automotive applications, producing an expected high impact on vehicle safety and traffic efficiency.

ARTIC is also aimed at increasing the significance of antenna software and measurements by adding new operational roles such as closed-loop interaction with the communications and sensor systems requiring the services of automotive antenna systems and their calibration systems.



C2C Communications