

# Antenna Research and Technology for the Intelligent Car

## ARTIC



**ARTIC is a FP7-ICT Coordination Action aimed at transferring the novel enabling antennas technologies emerged during the FP6-IST ACE Network of Excellence towards the Intelligent Car Initiative, by sharing achievements and technological results.**

### At a Glance

#### Project

The ARTIC project aims at spreading the latest antenna technologies towards the automotive application area. The objective is to provide top level antenna performance to the communication systems emerged in the Intelligent Car Initiative.

#### Project coordinator

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#### Partners

IDS Ingegneria dei Sistemi Spa (I)  
Università di Siena (I)  
Katholieke Universiteit Leuven (B)  
Antenna Systems Consulting ApS (DK)  
University of Rennes 1 (F)  
Universität Karlsruhe (D)  
IMST GmbH (D)  
Universidad Politécnica de Madrid (E)  
SAAB Space (S)  
Ecole Polytechnique Fédérale de Lausanne (CH)  
Alcatel Lucent Telecom Limited (UK)

#### Duration

2 years, start date on 1<sup>st</sup> April 2008.

#### Total cost

Project cost is 466.000 €, with an EC contribution of 361.000 €.

#### Programme

ICT for mobility

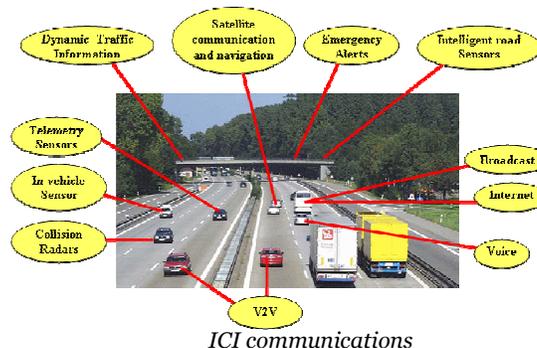
#### Further information

ARTIC Virtual Centre, at [www.antennasvce.org](http://www.antennasvce.org)

### Objectives

The main objective of ARTIC is to support the Intelligent Car Initiative (ICI), in particular contributing to eSafety pillars and in synergy with the COMeSafety project, by making the results from ACE Network available to the European Automotive Industry.

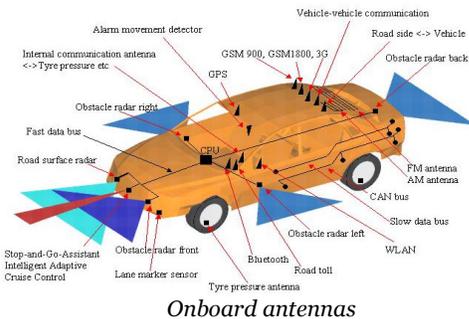
ARTIC is focused on Intelligent Car Co-operative Systems, where Vehicle-to-Infrastructure (V2I), Vehicle-to-Vehicle (V2V) and in-vehicle Wireless Sensor communications hold the promise of major improvements in the efficiency of the transport system, in the safety of all road users and in making mobility more comfortable.



ARTIC will also provide support for radio links in in-vehicle wireless sensor networks, expected in future smart cars, including nomadic or brought-in wireless devices.

## The enabling technologies

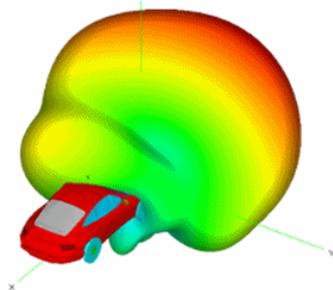
Complex antenna subsystems are expected to be used in order to link the next generation vehicles with the future transport infrastructure.



Advanced antenna technologies need to be fully exploited, including:

- millimetre wave integrated antennas;
- small antenna & sensors;
- wideband antennas;
- array antennas;
- smart antennas;

The latest antenna software best practices will be transferred towards the automotive applications, enabling the simulation of the novel communication systems.



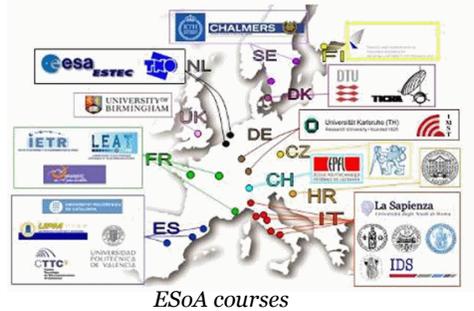
*Obstacle radar antenna pattern*

The novel antenna measurements best practices for near and far-field measurements will be adapted, along with comparative investigations of different techniques, to the measurement of vehicles antenna parameters



*MIMO antenna measurement*

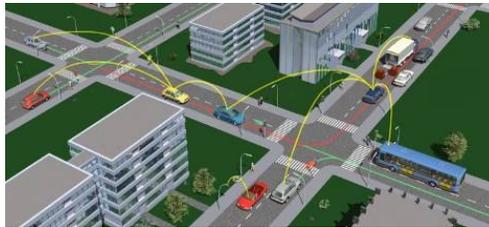
ARTIC will offer a specific course on antenna technology applied to automotive application in the frame of the European School of Antennas (ESoA).



## Impact

ARTIC is structured to provide the highest impact on the Intelligent Car Initiative by pushing knowledge by workshops and sessions in EuCAP conferences.

Particular impact is expected in Car-to-Car Communication, thanks to the links with the COMeSafety and C2C CC.



ARTIC will contribute to the three pillars of the Intelligent Car Initiative:

**Pillar 1:** homogenisation of the technical solutions by the sharing of the knowledge on antenna technology at European level

**Pillar 2:** open new capabilities in transport research, by providing state-of-the-art solutions in co-operative systems for future smart cars

**Pillar 3:** raise awareness on innovative communication capabilities, both at industrial and at citizen level, by the ARTIC Virtual Centre.

## For further information:

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