

CARE

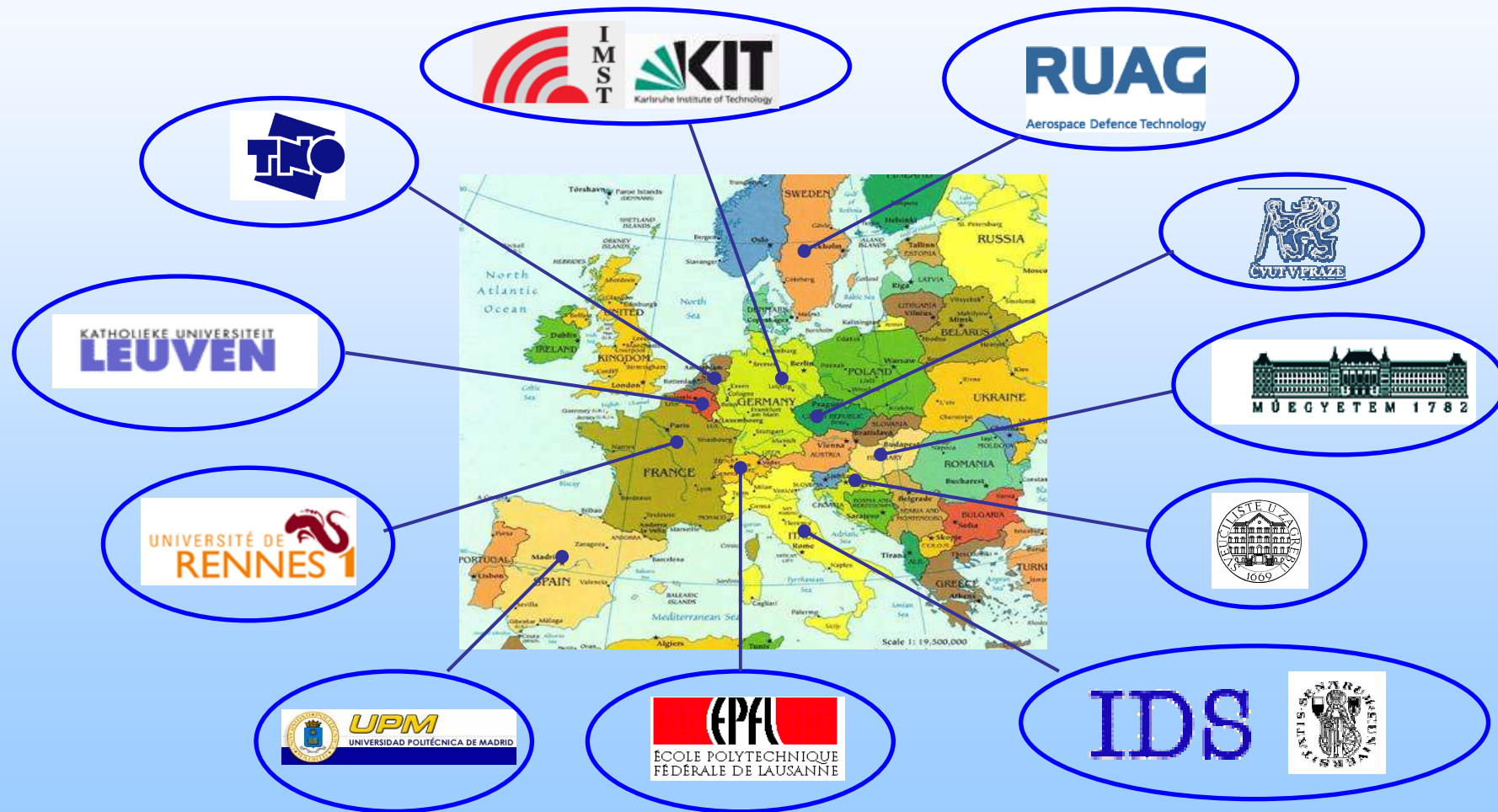
Coordinating the Antenna Research in Europe

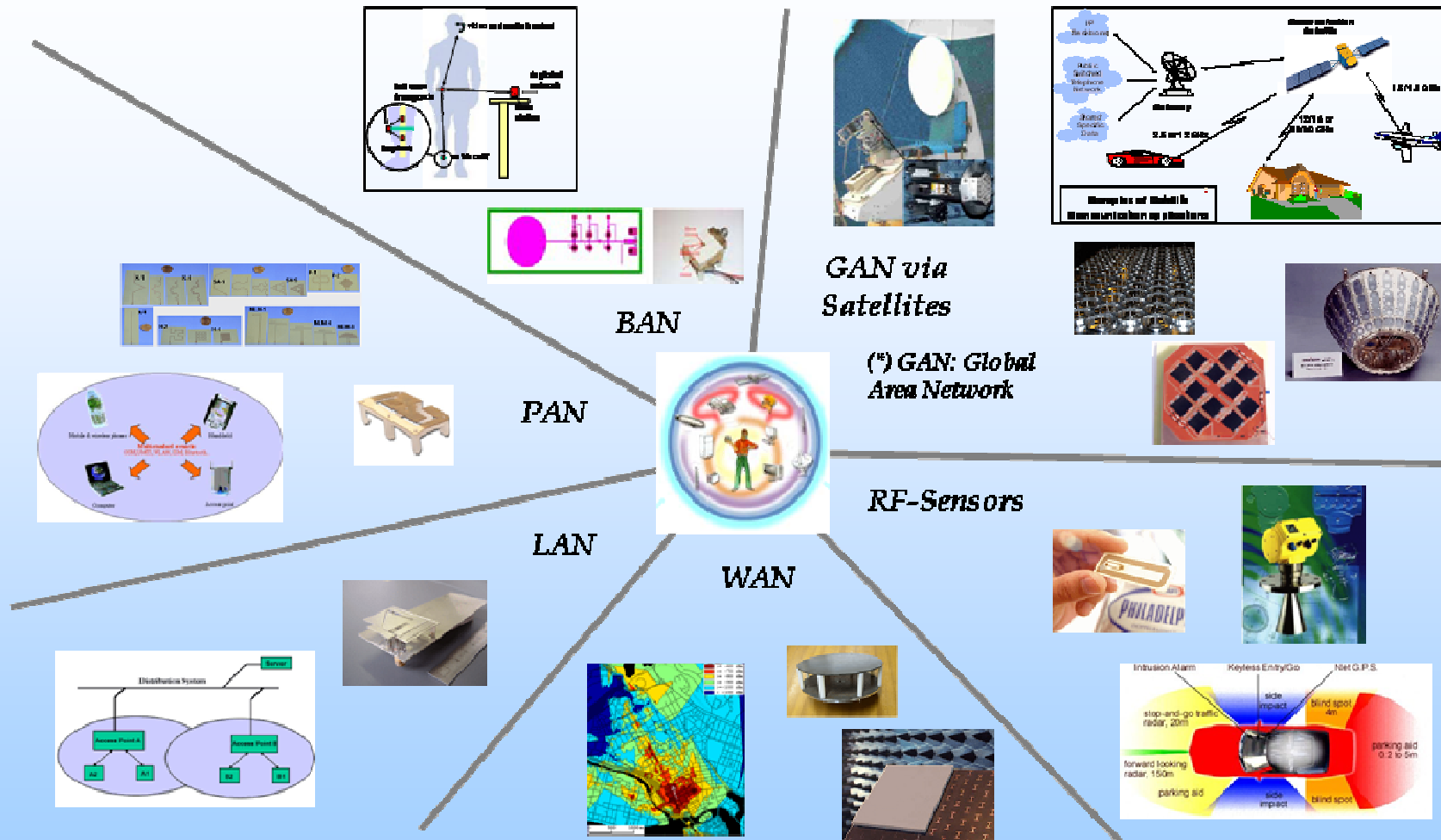
Coordination Action

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- **Proposal:** Submitted in call FP7-ICT-2009-4
- **Status:** Contract in force
- **Grant Agreement:** Coordination Action
- **Timeframe:** from 1/01/2010 to 30/04/2012 (28 months)
- **Challenge:** ICT-2009-9-4: Strengthening Cooperation in ICT R&D in an Enlarged Europe
- **Objective:** Reinforce networking and achieve a better exploitation of European synergies in antenna research
- **Activities:** Secondments, Courses and Workshops
- **Number of partners:** 13 from 11 European Countries
- **Total cost:** 568.095,50 € (EC Contribution : 497.740,00 €)
- **Project URL:** www.ict-care.org and www.AntennasVCE.org

The CARE Consortium includes 13 European Organisations, at top level of excellence in antenna research, from 11 European countries.





Complex antenna subsystems are expected to enable the future applications in Communications, Transport, eHealth, Environments, etc.

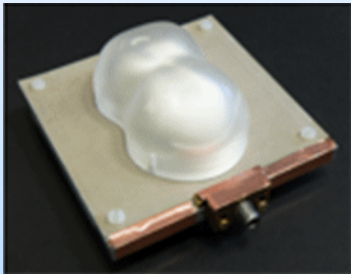



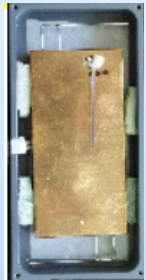
CARE aims at reinforcing the collaboration among the European Institutions involved in antenna research. This pan-European effort, focused on the New Member States, aims at improving the European excellence by supporting the cooperation and synergies among Institutions located in different countries.

In particular, CARE will provide:

- 1) researchers secondments**
- 2) international workshops**
- 3) training courses**
- 4) dissemination, by conferences and Internet.**

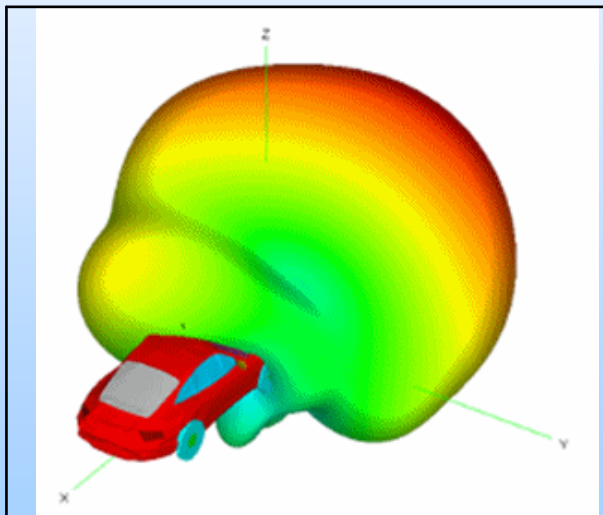
The CARE funding will also support the dissemination of the results within the enlarged Europe, in close cooperation with the European Association on Antennas and Propagation (see www.EurAAP.org).

The WP1 coordinates the European excellence provided by the **Antenna Experts Groups (AEGs)** in:

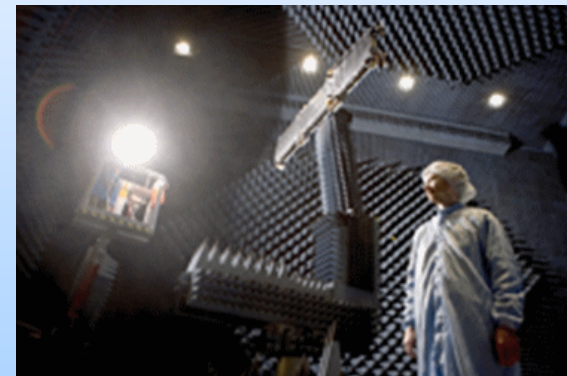
<i>MM & Sub-MM Wave Antennas</i>	<i>Small Antenna & Sensors Antennas</i>	<i>Wideband Antennas</i>	<i>Array Antennas</i>	<i>Smart Antennas</i>
				
<i>Shaped lens for space applications at 26 GHz(UR1).</i>	<i>Cochlear implant for hearing aids (IMST)</i>	<i>Miniaturised ultra-wideband antenna for handheld devices (KIT)</i>	<i>Prototype of an electronically steerable satcom antenna for boats and ships (IMST)</i>	<i>Antenna configuration for MIMO handsets (KIT)</i>

and is focused on the transfer of knowledge towards researchers in Academia and Industry, by **offering researchers secondments and visits.**

In WP2, the **Antennas Best Practices Groups** will provide the software tools to easily assemble complex antenna simulation and will distribute the state-of-the-art antennas measurement procedures able to guarantee the highest level of quality in indoor and outdoor Test Field.



*Obstacle radar antenna pattern
(KIT)*



*Measurement of radiometer antenna system
for ESA's Soil Moisture and Ocean Salinity
mission at the DTU-ESA Spherical Near-
Field Antenna Test Facility*

In WP3, three CARE workshop will be organised (in 2010, 2011 and 2012) to present the latest R&D results achieved by the CARE secondment. These workshops will be joined with the major conference in Europe on antennas: the European Conference on Antenna&Propagation (EuCAP), see www.EuCAP2010.org.



EuCAP2006



EuCAP2007




EuCAP2009



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

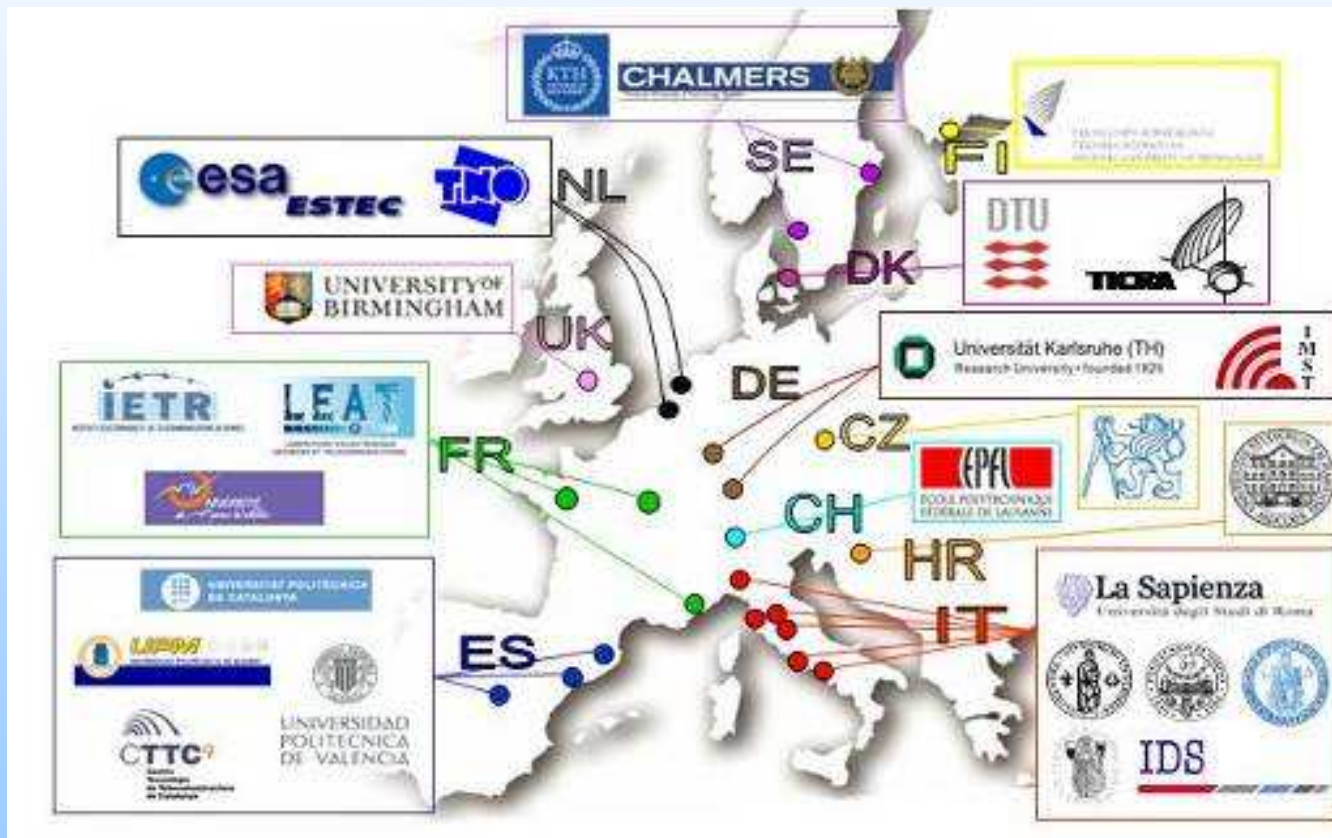
The Antennas VCE portal will host the CARE website, where the project will be presented on the web towards the scientific community and the public.



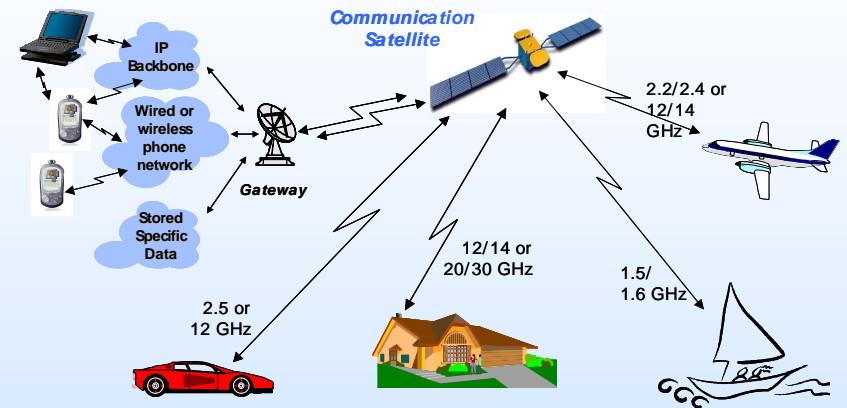
The screenshot shows the Antennas VCE website interface. At the top, it features the 'ANTENNAS VCE Virtual Center of Excellence' header and navigation tabs for 'News', 'Events', 'Links', and 'Contact us'. The main content area includes a central banner with a satellite image and the text 'ANTENNAS VIRTUAL CENTRE OF EXCELLENCE'. Below this, there is a detailed description of the project, supported by the ACE Network of Excellence, and a list of 'LATEST NEWS' including 'ACE at IST Summit 2006 - NoEs Panel: 25/05/2006' and 'EURASIP JWCN Special Issue on Smart Antennas for Next-Generation Wireless Systems: 08/05/2006'. The left sidebar contains sections for 'About Antennas VCE', 'Antennas Community' (with links like 'Benefits', 'How to join', 'Antenna Software', etc.), and 'ACE Network'. The right sidebar features 'Focus On' sections for 'ACE Public Deliverables', 'European School of Antennas', and 'EU CASP 2006'. The footer includes the copyright notice '© 2006 Antennas VCE. All rights reserved.' and logos for 'Information Society Technologies' and 'EUROPEAN COMMISSION'.

CARE is reachable at www.antennasvce.org

In WP5, the ESoA initiative (see figure) will be prolonged in 2010 and 2011, by the contributions of IMST, KIT, IDS, CTU, TNO, UNISI, UPM and EPFL.



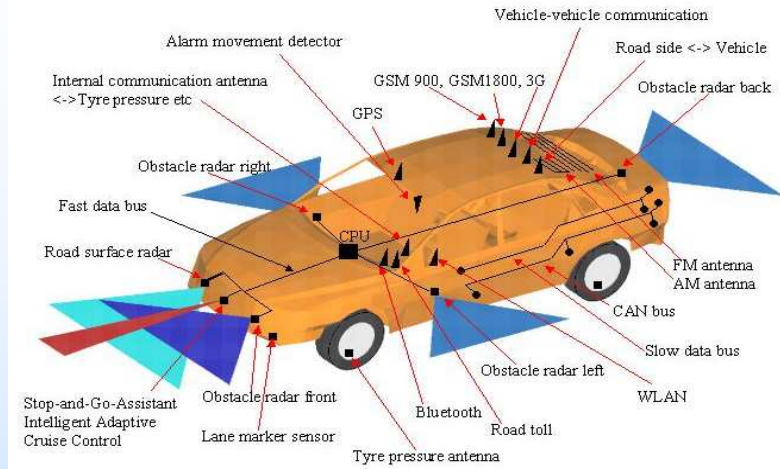
In satellite communication there is a strong need to reconfigure Ku-band coverages, EIRP and polarisation in orbit. Conventional technologies are too expensive and heavy and new, flexible but simple and lightweight technologies are needed.



Satellite communication systems

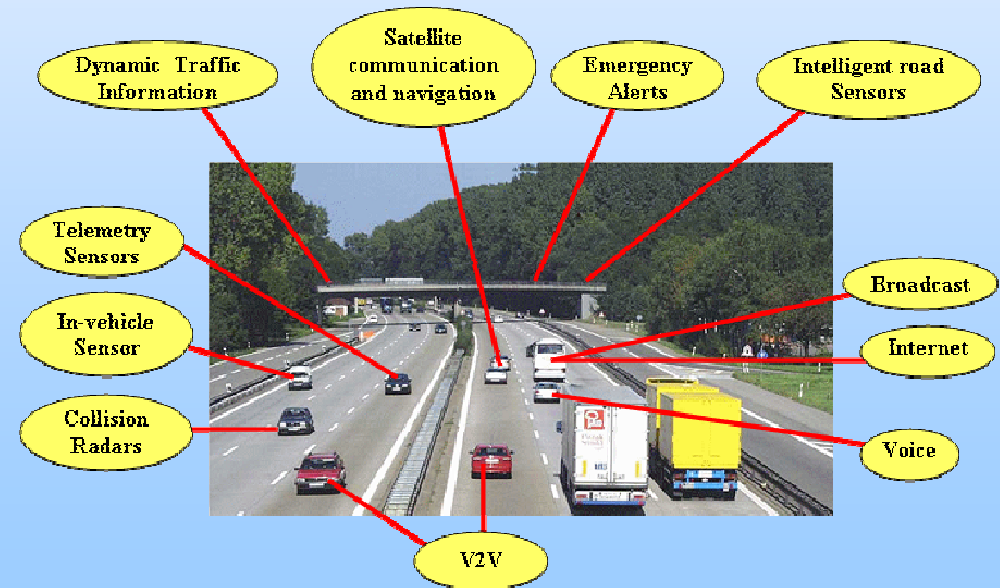


Wireless communications based on RFID and Smart Tags are expected to improve the quality of the manufacturing processes by tracing the assembling and delivery during the entire product lifecycle.

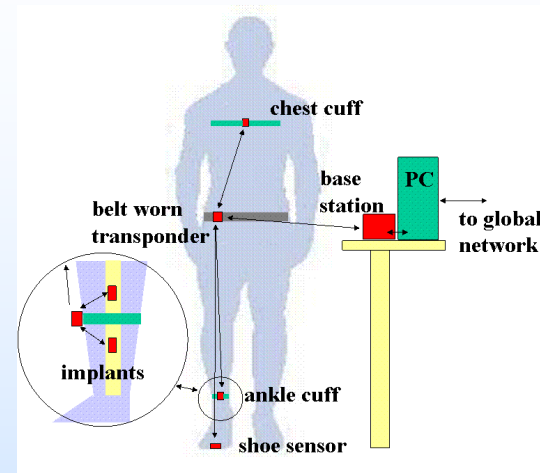


Advanced antenna technologies need to be faced in order to satisfy novel requirements in the sensors expected in the Intelligent Car Initiative

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



Wireless sensors can be used to measure critical parameters like heart rate, oxygen saturation, arterial blood pressure, electrocardiogram (ECG), breath rate, skin temperature, respiration and glucose or patient position and activity.



Body centric communications supporting medical systems.



A key application is the tracing of the animals by wireless sensors. Studies about migration paths and other behaviour are strongly supported by data transmitted by wireless sensors carried by moving animals.