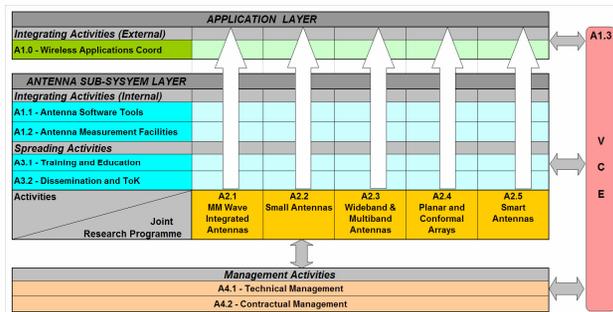


## Joint Programme of Activities

ACE is organised in activities according to the following Joint Programme of Activities



Three integrating activities for basic antenna needs:

- Wireless applications coordination;
- Antenna software tools;
- Antenna measurement facilities.

Five vertical, application-oriented activities:

- MM waves/Integrated antennas;
- Small antennas;
- Wideband and multiband antennas;
- Planar and conformal arrays;
- Smart antennas systems.

Two spreading activities:

- Training and education
- Dissemination and transfer of knowledge

At the heart of ACE, a Virtual Centre of Excellence (VCE) ([www.antennasvce.org](http://www.antennasvce.org)) acts as a knowledge base and communications centre.



## List of participants:

1. IDS Ingegneria dei Sistemi SpA, Italy
2. Katholieke Universiteit Leuven, Belgium
3. Technical University of Denmark, Denmark
4. Tiera Fond, Denmark
5. Helsinki University of Technology, Finland
6. ALCATEL SPACE, France
7. France Telecom SA, France
8. Societ  d' Application Technologiques de l'Imagerie Micro-Onde SA, France
9. Thales Airborne Systems, France
10. Universit  de Marne La Vall e, France
11. University of Nice-Sophia Antipolis, France
12. Institut d'Electronique et de Telecommunications de Rennes, France
13. Technische Universit t Darmstadt, Germany
14. Deutsches Zentrum f r Luft- und Raumfahrt e.V. Germany
15. IMST GmbH, Germany
16. Institut f r H chstfrequenztechnik und Elektronik Univ. Karlsruhe, Germany
17. Institute of Communication and Computer Systems of NTUA, Greece
18. La Sapienza University of Rome, Italy
19. Politecnico di Torino, Italy
20. University of Calabria, Italy
21. Universit  degli Studi di Firenze, Italy
22. University of Siena, Italy
23. Instituto Superior Tecnico, Portugal
24. Universitat Polit cnica de Catalunya, Spain
25. Universidad Polit cnica de Madrid, Spain
26. Universidad Polit cnica de Valencia, Spain
27. Chalmers University of Technology, Sweden
28. Ericsson Microwave Systems AB, Sweden
29. Swedish Defence Research Agency, Sweden
30. Royal Institute of Technology, Sweden
31. Saab Ericsson Space AB, Sweden
32. Lund University, Sweden
33. Ecole Polytechnique F d rale de Lausanne, Switzerland
34. Netherlands Organisation for Applied Scientific Research TNO, The Netherlands
35. Bae Systems (Operation) Ltd, United Kingdom
36. University of Birmingham, United Kingdom
37. University of Bristol, United Kingdom
38. Liverpool University, United Kingdom
39. ASC Antenna System Consulting ApS, Denmark
40. Lucent Technologies Network Systems UK Limited, United Kingdom
41. Telecommunications Technological Center of Catalonia, Spain
42. University of Piraeus Research Center, Greece
43. National Centre for Scientific Research "Demokritos", Greece
44. Groupe des Ecoles des T l communications, France
45. Instituto Telecomunika es, Portugal
46. Delft University of Technology
47. BenQ Mobile GmbH & Co. OHG
48. Budapest University of technology and Economics
49. Czech Technical University in Prague
50. University of Zagreb
51. Politechnika Warszawska (War-saw University of Technology)

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Read more at [www.ist-ace.org](http://www.ist-ace.org).

Join ACE Community at [www.antennasvce.org](http://www.antennasvce.org).



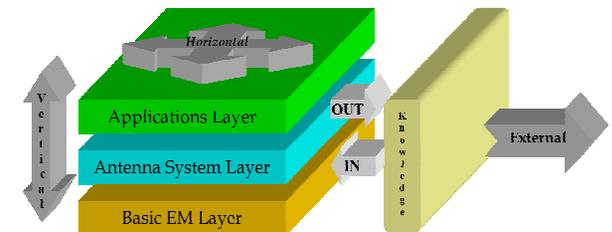
## ACE Antenna Centre of Excellence Network of Excellence

**Projects reference:** IST-2004-508009 & IST-2006-026957  
**Contract type:** NoE  
**Start date:** 1/01/2004  
**End date:** 31/12/2007  
**Project duration:** 48 months  
**Total budget:** 13.534.000   (EC Contribution : 10.500.000  )  
**Action lines:** Mobile and wireless system beyond 3G  
**Clusters:** SB3G, Broadband for All, BAI  
**Number of partners:** 51  
**Project URL:** <http://www.AntennasVCE.org/>

### Objective

The new wireless and broadband world will see ubiquitous small antennas, and very advanced antennas. Antenna research has to be reinforced, and redirected into the new applications. ACE deals with the antenna function of radio systems, not only the classical antenna units.

Antenna research in Europe is fragmented, cooperation between countries and between universities and industry limited. ACE aims to change this, so that Europe gets a competitive research structure and better industrial utilization of the results. ACE will also improve the education and dissemination in the antenna area.

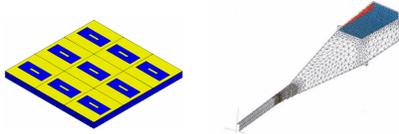


### Activity 1.0: Wireless applications coordination

- Exchanging requirements and providing feedback
- Addressing BAN, PAN, LAN, WAN and RF-Sensors

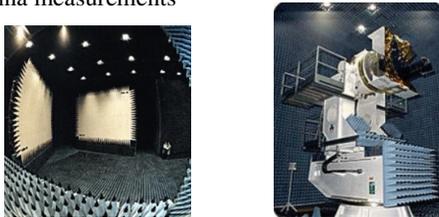
### Activity 1.1: Antenna Software Initiative

- Identifying competences and existing tools in Europe
- Organizing a standard assessment process of software
- Standardizing software interfaces
- Initializing integrating activities with existing tools



### Activity 1.2 Antenna Measurements Techniques

- Mapping of European antenna measurement facilities
- Sharing of measurement facilities and resources
- Recommendations for near-field measurements and smart antenna measurements



### Activity 2.1: MM & Sub-MM Waves / Integrated Antennas

- Overview of the state of the art in millimeter wave, integrated antennas, materials and manufacturing processes.
- Compilation of an inventory of integrated and mm wave antenna design software and measurement facilities.
- Initiate research projects for future systems



### Activity 2.2: Small Antennas

- Overview of the state of the art in small terminals antenna
- Analysing combinations of multi-system and MIMO antennas
- developing new evaluation techniques and methodologies



### Activity 2.3: Wideband & Multiband Antennas

- Ultra wideband & multiband radiators.
- Reflector surface & FSS modelling.
- Surface penetrating radar antennas: joint test facility & research.



### Activity 2.4: Planar & Conformal Arrays

- Modelling framework for active array antennas
- Beam forming techniques and networks
- Structuring research on conformal arrays

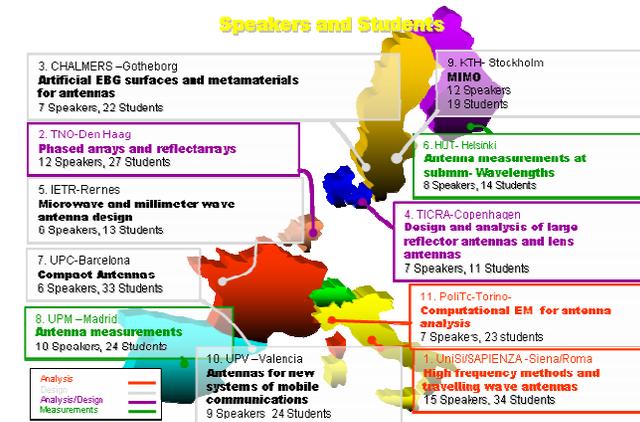


### Activity 2.5: Smart Antenna Systems

- Advance multiple antenna transmit and receive schemes
- MIMO networks optimisation and deployment issues
- Antenna technology and propagation aspects for multiple antenna systems

### Activity 3.1: Training and Education

- PhD and undergraduates support, by inventories, databases and industrial PhD startup.
- European School of Antennas (ESoA), where an extensive set of courses will be given in 2006-2006 (see the following figure).. Travel grants are available to Ph.D. students outside the ACE Contractual partners.
- Virtual Antenna Laboratory (VALab), to support teaching for young researchers, Ph.D. students and undergraduate and to extend the collective knowledge portfolio.



### Activity 3.2: Dissemination and knowledge transfer management

- Dissemination at Academic and Research level: Creation of a major European antennas and propagation conference
- Dissemination towards SMEs and related R&D groups: Technological transfer Workshops in order to increase the cooperation between universities and between universities and industry
- Dissemination towards Society: General Public events
- Awareness of Intellectual Property Issues: Short courses
- Dissemination on antenna and participation at IST conferences and workshops
- Creation of an association for European antenna engineers and researchers