

Triennial report Commission C

1. Special interest group on Cognitive Radio

Due to the great increase of interest in software radio in the general scientific community, and among the URSI membership in particular, an ad-hoc “special interest group” for cognitive radio was established by the Commission-C chairman in late 2007. At the moment, discussions are done via an email reflector containing more than 20 names, exchanging information about relevant conferences and other events. More extensive scientific discussions, as well as planning of the activities for the next triennium, are planned for the Chicago GA.

2. Supported scientific conferences

The following meetings have been (will be) supported by Commission C in this triennium:

- EUSAR 2006 - European Conference on Synthetic Aperture Radar, Dresden, Germany, 16-18 May 2006
- International conference on Ultrawideband, Waltham, MA, USA, 24-27 September 2006
- ISAP 2006, Int. Symp. On Antennas and Propagation 2006, Singapore, 1-4 November 2006
- APMC 2006 - Asia-Pacific Microwave Conference, Yokohama, Japan, 12-15 December 2006
- ICMARS 2006 - 3rd Int. Conf. On Microwaves, Antenna, Propagation and Remote Sensing, Jodhpur, India, 20-22 December 2006
- Telecom & JFMMA, Fes, Morocco, 14-16 March 2007
- 12th Microcoll, Budapest, Hungary, 14-16 May 2007
- ETTC 2007, Toulouse, France, 12-14 June 2007
- ISSSE'07, Montreal, Canada, 30 July - 2 August 2007
- ISAP 2007, Int. Symp. On Antennas and Propagation 2007, Niigata, Japan, 20-24 August 2007
- ISRSSP'07 - International Symposium on Radio Systems and Space Plasma, Borovets, Bulgaria, on 2-5 September 2007
- ICEAA 2007, Torino, Italy, 17-21 September 2007
- APMC 2007 - Asia-Pacific Microwave Conference, Bangkok, Thailand, 11-14 December 2007

- 2nd International Conference on Wireless Communications in Underground and Confined Areas, Val-d'Or, Canada, 25-27 August 2008
- EMC Europe 2008, Hamburg, Germany, 8-12 September 2008

The following meetings will be supported in the next triennium:

- Microwave-08, Jaipur, India, in late November 2008
- EMC 2009, VIII International Symposium and Exhibition on Electromagnetic Compatibility and Electromagnetic Ecology, St Petersburg, Russia, 16-19 June 2009

3. Reports from the National Commissions

3.1 Spain

The main activity in the Spain URSI and particularly the Commission C is the Spain URSI Symposium that is celebrated each September in an Spanish city. The meetings of this triennium occurred in Valencia (2005), Oviedo (2006), and Tenerife (2007). This Symposium meets more than 300 papers and 400 people, mainly from Spain but some of the people comes from the Spanish America and from Portugal. Although the National Symposium covers all the commissions, commissions B and C are largely represented. Two prizes are organized to the best student paper. This meeting usually groups other activities like National Research Office project evaluation or Commissions social and organization meetings. More information can be obtained in the URSI web page <http://w3.iec.csic.es/ursi/english/index.htm>

3.2 United Kingdom

The main activity in the U.K. for Commission C was the participation in the National URSI symposium, which in 2007 took place in Portsmouth. It was held on 2-3 July 2007 and it covered all the various commissions. Looking at the program there were 20 papers, 9 posters and two invited papers. Commission C had 10 between papers and posters. Further details about the conference can be found at <http://ursi2007.ee.port.ac.uk/>. Prior to that i.e. in 2006 there was a similar meeting in Rutherford and Appleton Labs.

3.3 France

The covered topics by the commission are

- Radio communications and telecommunications
- Spectrum management
- Information theory, coding and modulation
- Signal Processing for communications and Image Processing

The C commission has 81 members.

- ***General Assembly of New Delhi Participation***

The C commission was represented by M. Bellanger Chairman and by J. Palicot vice-Chairman. The C commission contributed to the technical symposium significantly with 3 organised oral sessions.

- Jacques Palicot (Supelec) : Signal Processing for reconfigurable radio.
The result with the presentations slides is on the link
<http://www.rennes.supelec.fr/ren/rd/scee/> at the event bullet
- Cengiz Evci (Alcatel) : spectrum management
- Alain Sibille (Ensta) : UWB

These 3 conveners were also chairmen of their sessions. The sessions were running very satisfactory.

- ***Cognitive Radio Days.***

The C commission was associated to four important days co-organized with the French research institute CNRS on cognitive radio subjects;

- **Journée radio cognitive (GDR ISIS – URSI 30 juin 2005 – ENST, Paris)**

This day was the first CR initiative in France, About 50 people attended this day. The presentations and the discussions were very interesting. The result with the presentations slides is on the link <http://www.rennes.supelec.fr/ren/rd/scee/> at the event bullet

- **Journée Scientifique Radiocommunications Haut Débit (CNRS- DGA- ENSTA-URSI) 23 novembre 2005, ENSTA Paris**
- **Vers Des Radiocommunications Reconfigurables Et Cognitives (CNFRS- URSI), 28 et 29 mars 2006, C NAM, PARIS**

These two days were very successful. The program with the papers is still available on the link <http://cnfrs.institut-telecom.fr/>, furthermore a special issue of the journal “Annals of Physics” was edited with extended version of the presentations.

- **Journée sur la Cognitive Radio (CNRS GDR ISIS - URSI - ETSI.(19 octobre 2007), ENST Paris**

- The commission is involved in the CCCR group started end of 2007 for discussing the Cognitive Radio subject within C commission of URSI

- We had our bureau election in 2007: Jacques Palicot has been elected as Chairman and A Sibille and JC Imbeaux were elected as vice-Chairmen.

- The commission is involved in the preparation of the GAURSI 2008. We are convener or co-convener of 4 sessions.

3.4 Italy

The chairmanship of Commission C in Italy was handed over from Guido Tartara to Marco Luise (with Marco Lops from the University of Cassino as a deputy) officially in 2008, i.e., with some delay, due to issues with the Italian National Research Council (CNR, Consiglio Nazionale delle Ricerche) that is the official National interface with URSI.

3.5 Ukraine

The Ukrainian section of Commission C was a member of the organizing committee of the following Conferences

VI-VIII INTERNATIONAL YOUNG SCIENTISTS CONFERENCES ON APPLIED PHYSICS, JUNE 2006-2008, National Taras Shevchenko university of Kiev.

VI-VIII INTERNATIONAL CONFERENCES on ELECTRONICS AND APPLIED PHYSICS, OCTOBER 2006-2008, National Taras Shevchenko university of Kiev.

3.6 Taiwan

Research activities in wireless, networks and communications have been mainly focused on mobile, wireless, and optical systems, in recent three years. Several important landmarks of wireless, networks and communications research works are detailed (including references) in a report available upon request from Yuan-Kuang Tu, yktu@cht.com.tw.

3.7 India

The activities related to URSI are monitored in India through a joint National committee of COSPAR-URSI-SCOSTEP. During the above period the National committee members met twice, once in 2007 and 2008. The members of each commission made detailed presentations at these meetings and gave concrete suggestions for future program that need to be initiated to strengthen the R&D activities. In addition, suggestions were also made to change university curriculum for continuous upgrade in the technological skills. At least one conference was organized every year that is co-sponsored by URSI. The conferences supported during the period under review are:

- Indian Conference on "Microwaves, Antennas, Propagation and Remote Sensing, ICMARS-2005, Jodhpur, India, 2005.
- 3rd International conference on microwave, antennas, propagation and remote sensing, ICMARS-2006, Jodhpur, India, 2006.
- International Conference on Radio science ICRS-2008, Jodhpur, India, 2008.

Besides these activities, several other national and international conferences with active participation of National committee members and International experts were held. These are:

- National Conference on Communications (NCC)

- a. 2008: IIT Bombay, 1st - 3rd Feb. 2008
 - b. 2007: IIT Kanpur, 26th - 28th Jan. 2007
 - c. 2006: IIT Delhi, 27th - 29th Jan. 2006.
 - d. 2005: IIT Kharagpur, 28th - 30th Jan. 2005.
- The 10th Intl. Symposium on Wireless Personal Communications, Jaipur, Dec. 2007.
 - Intl. Symposium on Ocean Electronics (SYMPOL – 2007), Kochi, Dec. 2007.
 - Symposium on Ocean Electronics (SYMPOL – 2005), Kochi, Dec. 2005.
 - Third Intl. Joint Conf. on Natural Language Processing, Hyderabad, 7-12th Jan, 2008.
 - The Sixth Intl. Conf. on Advances in Pattern Recognition (ICAPR 2007), Kolkata, 2007.
 - Indian Conf. on Computer Vision, Graphics, and Image Processing, Madurai, 2006.
 - 3rd Intl. Conf. on Visual Information Engineering, Bangalore, 26-28th Sept. 2006.
 - Indian Conf. on Medical Informatics and Telemedicine (ICMIT), Kharagpur, 2006.
 - 3rd Indian Intl. Conf. on Artificial Intelligence, Pune, 2007.

- 4th Intl. Conf. on Natural Language Processing, Kanpur, 18-20 Dec. 2005.
- 5th Intl. Conf. on Natural Language Processing, Hyderabad, 4 – 6th Jan 2007.
- 6th Intl. Conf. on Natural Language Processing, Pune, 20 -22 Dec. 2008 (to be held).
- IEEE India Annual Conf. (INDICON – 2005), Chennai, 11-13 Dec. 2005.
- 13th Intl. Conf. on Advanced Computing and Communication (ADCOM 2005), Coimbatore, Dec. 2005.
- Workshop on Image and Signal Processing (WISP 2007), Guwahati, 28 -29 Dec. 2007.
- Workshop on Image and Signal Processing (WISP 2006), Madras, 2006.

3.8 Russia

1) Members of Commission C took part in organization and execution of three annual sci-tech conferences “Radiolocation, navigation, communication”, which were held in Voronez (Russia) April 2006-2008. Every conference gathered nearly 200-300 participants mainly from Community of Independent States (former USSR). Proceedings of these conferences were published in Russian.

2) Commission C took part in organization and execution of sci-tech conference “Innovations in radiotechnical information-telecommunication technologies” devoted to 60-th anniversary of Radiotechnical Institute by Academician A.L. Mints and Radioelectronics Faculty of Moscow Aviation Institute. This conference was held in Moscow 24-26 October 2006 in frames of Moscow International Industry Fair (MIIF-2006). More than 150 specialists took part in conference, 7 plenary and 68 section reports were presented. Section reports were published in Russian.

3) Representatives of Commission C regularly attend workshop “Information technologies in radar science” being held twice a year on the basis of Bauman Moscow State University.

4) Two representatives of Commission C took part in International Symposium on Radio Systems and Space Plasma which was held in Sofia (Bulgaria) 2-5 September 2007.

5) Commission C, together with Russian Committee URSI, takes part in preparation to XXIX General Assembly in Chicago.

3.9 Canada

2007-2008 report: from minutes of annual CNC on April 20th, 2008

1. Efforts are on-going to bring a major IEEE conference to Canada through which URSI could gain visibility as a sponsor and/or co-organizer (i.e. the CNC). Two potential targets are the IEEE International Conference on Communications (ICC) and the IEEE Wireless Communications and Networking Conference (WCNC). WCNC is smaller than ICC but still significant (1000 attendees) and more focused on URSI's interest group. The Commission C Chair is currently interfacing with IEEE to bring WCNC to Canada within two to three years and he will solicit a letter of support from the CNC Chair in the fall of 2008. Further developments are thus expected in the late fall.
2. The Commission C Chair suggested that 'Best Student Paper Award' be presented at the Prompt R&D consortium's annual conference to be held next on November 20th, 2008. The CNC agreed and set the award level at 300\$.