



Attachment 1.C

REPORT OF IEEE/AESS “SPACE SYSTEMS” PANEL

April 2003

The following activities have been carried out in the period October 2002-April 2003:

- Activities related to the co-Chairing of Track 2 *Space Missions, Systems and Architecture* of the **2003** IEEE Aerospace Conference, held in Big Sky (March 2003) and in particular: i) the Italian experts involved in the Track 2 Sessions co-chairs have brought a significant number of Italian participants to the Conference, that have appreciated the topics and organisation of the Conference itself; ii) a consequent further promotion of the Conference and Panel activities in the frame of the Italian and, more in general, European space community has derived.
- Activities related to the co-Chairing of Track 2 *Space Missions, Systems and Architecture* of the **2004** IEEE Aerospace Conference, that will be held in Big Sky (March 2004) and in particular: i) two new sessions have been proposed for conference from the European participants, still pending the final approval from the Conference Technical Committee; ii) the group of Italian participants to the 2003 edition have agreed to involved the European colleagues working in their field, through the submission of abstracts for the 2004 Call for Papers.
- Intense activities on the assessment of the technical program related to space topics for the Wireless Personal Multimedia Communications Conference *WPMC 2004*, that will be held in Italy (Abano, September 5-8, 2004). To this respect, an involvement of the AES Society in the Conference would be important, in terms of both participation to the TPC and sponsorship
- Intense activities related to the role of Editor of *Space Systems* of the AES Transactions, where the number of manuscripts submitted in the area has increased quite significantly. Since May 2001, 20 manuscripts and a correspondence have been submitted, including 3 manuscripts whose handling procedure was not completed by the previous Editor. The latter are presently running newly started review process. In the last six months 7 manuscripts have been submitted, 6 procedures have been finalised towards the authors (with the review reports) or closed, 8 are being handled (waiting for the review reports or the authors' revised version or other material) and 1 has to be started with the formal letter exchange. The network of reviewers - experts in the various space systems topics

and, in some cases, related to the Aerospace Conference team - that has been created, thanks to the job as Editor, is continuously increasing.

- Activities as Mentor of the Student Branch at the University of Roma Tor Vergata, Italy, particularly for space-related activities. In this frame, the possibility of training periods abroad of our students on space topics is being developed. To this respect a contribution from IEEE would be very useful and encouraging to the students who joined IEEE.
- Organisation of training and thesis activities of students at the University of Roma Tor Vergata in the field of space systems (ISS, Mars communications, satellites).
- A Panel on the role of satellites in the future mobile and multimedia scenario has been organised at the WPMC 2002 Conference (Hawaii, October 2002). In this frame promotion of AES and the Panel has been performed.
- The Special Issue of the *Wireless Personal Communications* Journal (Kluwer) on *Broadband Mobile Terrestrial-Satellite Integrated Systems* (editors: G.Maral, ENST-France, S.Ohmori, CRL-Japan and myself) has been published (Vol. 24 No.2, 2003). It includes 361 pages, 13 papers and an Editorial (written by the three Editors).
- Organisation activities related to the international *Advanced Workshop on AIR Traffic Management* (ref: G. Galati, member of the event Technical and Organising Committees), that has been held in Capri, Italy (22-26 September, 2002).
- Development of activities in the field of *satellite navigation* systems. In particular a Seminar has been held on October 4, 2002 in the Italian Deputy Chamber (Roma) to a technical-political Committee (VAST), entitled "*The Galileo Program: Technological Innovation and Application Development in the Transport System, in particular in the Air Traffic case*". Further initiatives are following the above one, including a contribution about Galileo to a European Conference (GNSS03, Gratz, April 2003) and a one-week exhibition at the Deputy Chamber (Roma, 12-16 May, 2003).
- Kick-off of the national Program *SHINES* (Satellite and *Hap* Integrated *NE*twork and Services), where key-topics in the space systems field are dealt, such as IP routing algorithms for LEO satellite networks, potentialities of integrated satellite-high-altitude platforms for stratospheric relay. The topics have resulted also in publications.
- Development of hardware prototypes at 94 GHz, in co-operation with the national space industry, for the W-band payload of the *DAVID* Program. The latter activity has also resulted in publications.
- Successful proposal for a European Program (Asia Link) of high education in the area of Wireless Communications, where the group of the University Roma Tor Vergata will contribute in the area of satellite communications: this will give the opportunity to reach more Asian institutions with the space culture and the Panel information.
- Development of a novel M.Sc Program in the University of Roma Tor Vergata entitled "Advanced Communications and Navigation Satellite Systems", where an integration

with the Panel activities is envisaged. Possible training/stages of the M.Sc students in the frame of the IEEE should be explored.

Among the envisaged activities:

- Activities related to the role of Editor of *Space Systems* of the AES Transactions.
- Activities related to the various mentioned Conferences, that will be held this year and in 2004.
- Prosecution of the activities related to the on-going scientific, industrial and teaching Programs described in the report

Prepared on April 18, 2003 by: Marina Ruggieri