



## **REPORT OF IEEE/AESS “SPACE SYSTEMS” PANEL**

**September 2004**

The following activities have been carried out in the period April–September 2004:

- Activities related to the co-Chairing of Track 2 *Space Missions, Systems and Architecture* of the 2005 IEEE Aerospace Conference, to be held in Big Sky (March 2005). In particular, the number of European experts involved in the Conference (as session organisers and co-chairs), covering the areas of RF and optical technology, payload optimisation, International Space Station, space missions envisaged for the 21<sup>st</sup> century, has been increased. Conference has been as usual promoted in the European space community, yielding to the submission of various abstracts. Also, Italian experts in the field of insurance and regulations related to space missions have been involved in the Conference and invited to submit abstracts. Benefits to IEEE, AES and, in particular, to the Panel derive from this wider and wider involvement of European experts in the Conference.
- Intense activities related to the role of Editor of *Space Systems* of the AES Transactions, where the number of manuscripts submitted in the area is continuously increasing. Manuscripts are at present mostly submitted through the web-site-based electronic procedure, even if some submissions are still performed in “analogue” form.
- Organisation of training and thesis activities of students at the University of Roma Tor Vergata in the field of space systems.
- After the success of the first edition, the second edition of the Master Course in “Advanced Satellite and Communications Systems” at the University of Roma Tor Vergata is under construction. In the meantime, the highly qualified students with degrees in Engineering and Physics, that are undertaking the first edition, have performed the exams of the four teaching cycles envisaged. The teaching modules have gathered experts from space industries and institutions, including also the space experts of the University Roma Tor Vergata. Visits to the major space enterprises and technological poles devoted to space have been organised for the M.Sc students. Some of them have been then included in working teams for active space projects and integrated in the research group. The students are presently undertaking a project work on application-related topics and will start shortly their stages in national and international enterprises or institutions.

- Development of the technical and scientific activities of national and European research projects in the field of EHF satellite system architectures (W-band and V-band), heterogeneous networks with satellite and HAP components, toll-related applications for the European augmentation system for navigation EGNOS.
- Development of a teaching module on “Satellite Systems and Applications” in the frame of the CNIT TeleDoctorate Project for the years 2004-2005, implemented on an heterogeneous terrestrial-satellite network.
- Nomination of the Panel chair as Member of the Technical-Scientific Committee of the Italian Space Agency, with the aim at identifying the guidelines of the national application-oriented research in the space field.
- Initial steps for an international scientific co-operation between Italian and USA Universities in the field of satellite constellations.
- Deployment of a Consortium in the space field.

Among the envisaged activities:

- Activities related to the role of Editor of *Space Systems* of the AES Transactions.
- Activities related to the AES Conference.
- Activities related to projects, teaching and co-operations in the space field.

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