

REPORT OF IEEE/AESS “SPACE SYSTEMS” PANEL

September 3, 2009

The activities of the Panel have been deeply integrated with those of the AESS Operations Directorate for Italy-Western Europe.

The following activities have been carried out in the period May –September 2009:

Panel organisation has been revised, assigning reference people to key-topics and increasing the link between the Panel and AFCEA (Armed Forces Communications & Electronics Association), in particular in the area of Dual Use. In the Annex a summary of the Panel features and reference people is reported.

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An **Event** celebrating **125 years of IEEE and 50 years of IEEE Italy Section** has been organized on July 6, 2009 by the IEEE Italy GOLD, the AESS Space Systems Technical Panel and the Italian Joint Chapter Signal Processing/AES in Villa Mondragone (University of Roma Tor Vergata, Italy). The Event has been sponsored by AFCEA (*Armed Forces Communications and Electronics Association*) and the IEEE Italy Section. A summary of the Event, authored by the Panel Chair and Vice-Chair, has been sent to the Systems Magazine EIC for possible publication therein.

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Continuation of the presentation of the book *Aerospace Technologies and Applications for Dual Use - A New World of Defense and Commercial in 21st Century Security* (P.Finocchio, R.Prasad and M. Ruggieri, Eds', River Publishers, October 2008) through physical meetings and through the web.

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Activities related to the co-chairing of Track 2 *Space Missions, Systems and Architecture* of the **2010 IEEE Aerospace Conference**, that will take place in Big Sky in March 2010.

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Activities related to development of the First International Conference on *Wireless Communications, Vehicular Technology, Information Theory and Aerospace & Electronic Systems Technology (Wireless VITAE) 2009*, that has taken place in Aalborg (Denmark) on May 17-20, 2009. The Panel Chair has been the TPC Chair. The event,

technically co-sponsored by AESS, has dealt with key-topics that are becoming increasingly interesting for AESS and, in particular, for the Space Systems Panel, including: *ICT (Information and Communication Technology) for energy and ICT for health*.

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Activities related to development of the *European Microwave Week 2009*, that will take place in Rome (Italy) on September 28-October 2, 2009. The Event is technically co-sponsored by AESS. The Panel Chair is TPC Chair of the *European Wireless Technology Conference (EuWiT)*.

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Activities related to development of the *Personal Satellite Services (PSATS) 2010*, that will take place in Rome (Italy) on February 4-6, 2010. The Panel Chair is General Co-Chair of the Event, that is co-located with Sat Expo Europe.

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Activities related to the **CTIF_Italy** structure and launch of activities in the aerospace field. Promotion of the center worldwide. Development of agreements with aerospace industries. The CTIF_Global Network includes, at present, the headquarter in Denmark (Aalborg and Copenhagen) and nodes in Italy (CTIF_Italy is strongly characterised for the aerospace activities), India and Japan. Personnel from the Danish and the Italian nodes have moved temporarily to the recently open Japanese node to establish a close cooperation link.

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Participation to the activities for the development of the **educational satellite** EDU_SAT.

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Organisation of **training** and thesis activities of students at the University of Roma Tor Vergata in the field of space systems.

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Development of the 6th edition of the **Master Course** in “Advanced Satellite and Communications Systems” at the University of Roma Tor Vergata and preparation for the 7th edition.

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Activities related to the role of **Editor** of *Space Systems* of the AES Transactions and for the Systems Magazine.

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Development of successful proposals and projects in the field of satellite navigation, EHF (Q/V and W) payloads, NavCom systems, Data Relay Satellite, SDR, advanced satellite constellations and related applications, swarms, WSN and BAN, ICT for health and energy.

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Development and publication of several **papers** about space systems in conference proceedings and journals.

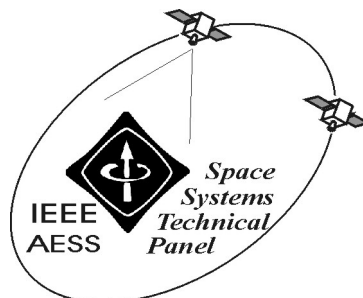
Among the envisaged activities:

- Activities related to the role of Editor of *Space Systems* of the AES Transactions and for the Systems Magazine.
- Activities related to the 2009 and 2010 Conferences/Workshops/Events.
- Activities related to projects, publications and teaching in the space system related topics.

Prepared on September 3, 2009 by: Marina Ruggieri

ANNEX

The IEEE AESS Technical Panel on SPACE SYSTEMS



Aim

The Panel aims at creating a reference point for technical and scientific initiatives related to the space world. Panel members belongs to (civil and military) institutions, industry and academia. The promotion and involvement of IEEE and AESS in space activities through the Panel is also aimed.

Areas and Membership

The Panel focus on key-topics related to space systems - such as standardization, system analysis&design, applications, constellations, EHF technologies, integration, dual use - covering three areas:

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| Area 1 | <i>Satellite Communications Systems</i> |
| Area 2 | <i>Space Exploration and International Space Station</i> |
| Area 3 | <i>Space-based Navigation Systems and Synthetic Aperture Radars.</i> |

Panel is open to all who wish to participate. The only requirement is to be member of IEEE and AESS.

Activities

In the frame of the *Space Systems* Panel, key topics related to space can be highlighted to the scientific and industrial community by the organization and development of the following :

- Special Issues on Transactions and Journals
- Sessions at International Conferences
- Conferences
- Workshops
- Editorial activities

- Seminars
- Courses
- Books
- Promotion
- Standardization.

Panel Contacts

Chair:

Prof. Marina Ruggieri (University Roma Tor Vergata/CTIF_Italy) ruggieri@uniroma2.it

Vice Chair:

Ing. Cosimo Stallo (University Roma Tor Vergata/CTIF_Italy) cosimo.stallo@uniroma2.it

System Analysis & Design:

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Standardization:

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Dual Use Applications:

- Communications and Navigation:

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- Earth Observation:

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Constellations:

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EHF Technologies:

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Aerospace-Wireless Technologies Integration:

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