

Technical Panel Chairs ^[1]

Panel	Chair	E-Mail Telephone	Status	Remarks
Gyro & Accelerometer	Randall Curey	<u>Randall.Curey@NGC.com</u> 818-712-7131	Active	Attachment 1.B
Radar Systems	Hugh Griffiths	<u>hgriffiths.cu@defenceacademy.mod.uk</u> +44 - (0) - 1793 - 782551	Active	Attachment 1.E
Space Systems	Marina Ruggieri	<u>Ruggieri@uniroma2.it</u> +39-06-7259-7451	Active	Attachment 1.D
Target Tracking Systems	Dale Blair	<u>dale.blair@gtri.gatech.edu</u> 770-528-7934	Active	
Large Scale Systems Engineering	Paul Gartz	<u>paul.e.gartz@boeing.com</u> 206-954-9616	Active	Attachment 1.A
Aerospace Control & Guidance Systems	Dave Bodden	<u>david.s.bodden@lmco.com</u> 817-935-4700	Active	Attachment 1.C

^[1] Reviewed September 12th, 2008 – Dr. J. R. Huddle

Attachment 1

Attachment 1.A

Large-scale Systems and Systems Engineering Panel Report to BoG

Fort Lauderdale
2008-09-29

2008 has continued progress in AESS large-scale systems and systems engineering. The focus has been to work through the IEEE Systems Council which as of September 2005 has the major IEEE responsibility for this field.

The Systems Council has chosen to proactively address SoS's and in 2008 to choose a particular SoS on which to start. The choice was Global Healthcare SoS with sub-foci on GEOSS and Privacy. AESS was key to these decisions and AESS will be a participating society in running the world's 1st market focused SoS Conference using a multi-society approach. Paul Gartz, AESS Past President, will chair the first effort on this foci which will be a joint 2010 conference. Healthcare is in disarray on a global basis in lives lost and costs incurred. Aerospace overall has major lessons learned on how to approach large-scale systems and is expected to contribute significantly in this new SoS especially at the level of processes and methods, case studies and systems engineering lessons learned.

A follow-on needing addressing is AESS relative specifically to Air Traffic Management SoS that is directly in the AESS field.

Attachment 1.B

REPORT OF THE IEEE/AESS GYRO AND ACCELEROMETER PANEL

September 2008

Panel Activity

P836, "IEEE Recommended Practice for Precision Centrifuge Testing of Linear Accelerometers," is still being edited to address the problems found during its final review. This effort has taken much longer than expected and will likely to continue until the end of the year, which means another PAR extension will be required.

The corrigenda for Std. 1293, "IEEE Standard Specification Format Guide and Test Procedure for Linear, Single-Axis, Non-gyroscopic Accelerometers," was successfully balloted and is awaiting RevCom approval. This corrigenda fixes one equation in Annex K and two in Annex L.

The corrigenda for Std. 1431, "IEEE Specification Format Guide and Test Procedure for Coriolis Vibratory Gyros," was successfully balloted and is awaiting RevCom approval. This corrigenda fixes Figure 1.

P1559, "IEEE Standard for Inertial Systems Terminology," has completed the industry survey phase and work continues on resolving the comments that were received. The panel is working hard to resolve the remaining comments by the end of the year so that the balloting process can begin.

A tentative outline for P1780, "Standard Specification Format Guide and Test Procedure for IMU's," has been developed and homework has been assigned.

Meetings

Since the last report (March 2008), the Panel has held two meetings:

Dates	Location	Host	Attendance
8/9 May 2008	Monterey, CA	PLANS	10
14/15 July 2008	Charlottesville, VA	Erickson Enterprises	6

Future Meetings

Dates	Location	Host
8/9 September 2008	Pittsburgh, PA	Acutronic
6/7 November 2008	Woodland Hills, CA	Northrop Grumman
12/13 January 2009	Huntsville, AL	Miltec Missiles

Membership

Since March 2008, 1 member and 1 info-only applications have been received. Additionally a late membership renewal was received. The current membership is as follows:

19 Members (5 Producers, 10 Users, and 4 General Interest)
30 Info Only (10 Producers, 9 Users, and 11 General Interest)

Other

The panel is in the process of reaffirming the following three standards:

- Std 671 "IEEE Standard Specification Format Guide and Test Procedure for Non-gyroscopic Inertial Angular Sensors: Jerk, Acceleration, Velocity, and Displacement"
- Std 952 "IEEE Standard Specification Format Guide and Test Procedure for Single-Axis Interferometric Fiber Optic Gyros"
- Std 1293 "IEEE Standard Specification Format Guide and Test Procedure for Linear, Single-Axis, Non-gyroscopic Accelerometers"

Respectfully submitted,

A handwritten signature in black ink, reading "Randall K. Curey". The signature is written in a cursive style with a large initial 'R' and a distinct 'K'.

Randall Curey

Chair, IEEE/AESS Gyro and Accelerometer Panel

Attachment 1.C

AGENDA

MEETING No. 101

AEROSPACE CONTROL AND GUIDANCE SYSTEMS COMMITTEE

Radisson Downtown
Salt Lake City, Utah
March 4-7, 2008

Tuesday **1.0 PLANNING ADVISORY BOARD MEETING**
4-Mar-08 Location: Wasatch 1
7:30 p.m.

Chairman	Dave Bodden
Vice-Chairman	Gary Balas
Immediate Past Chairman	Shawn Donley
Treasurer	Roger Burton
Secretary	Dave Ward

BOARD MEMBERS

G Jenney	L Knotts	M Steinberg
S Banda	V Lebacqz	P Stoliker
J DeLuca	R Mehra	M Tischler
S Garg	J Paduano	J Weyrauch
P Hattis	S Pszczolkowski	K Wise
R Hess	H Rediess	M Draper-Donley
D Klyde		

Wednesday **2.0 REGISTRATION & Breakfast**
5-Mar-08 Location : Wasatch 1&2
7:30-8:30 a.m.

Wednesday **3.0 GENERAL COMMITTEE BUSINESS MEETING**
5-Mar-08 Location: Wasatch 1&2
8:30-9:15 a.m. Dave Bodden, Chairman

Wednesday **4.0 GENERAL COMMITTEE TECHNICAL SESSION**
5-Mar-08 Jim Paduano and Marge Draper Donley, Co-Chairmen
9:15 am -
12:30pm

4.1 Government Agencies Summary Reports

4.1.1 FAA

4.1.1.1 Tech Center - Stanley Pszczolkowski ([abstract](#), [presentation](#))

4.1.2 US Army

4.1.2.1 Army Rotorcraft Center – Mark Tischler ([abstract](#), [presentation](#))

4.1.3 US Air Force

4.1.3.1 Air Force Research Lab – Corey Schumacher ([abstract](#), [presentation](#))

4.1.4 US Navy

4.1.4.1 Office of Naval Research – Marc Steinberg ([abstract](#), [presentation](#))

4.1.5 NASA

4.1.5.1 NASA LARC – Irene Gregory ([abstract](#), [presentation](#))

4.1.6 DLR – Klaus-Uwe Hahn ([abstract](#), [presentation](#))

4.2 Research Institutions, Industry, and University Reports

4.2.1 Research Institutes and Companies

4.2.1.1 Athena – V. Gavrillets ([abstract](#), [presentation](#))

4.2.1.2 Barron Associates – David Ward ([abstract](#), [presentation](#))

4.2.1.3 Systems Technology Inc. – David Klyde ([abstract](#), [presentation](#))

4.2.1.4 SAE A-6 Flight and Control Systems Panel– David Flavell ([abstract](#), [presentation](#))

4.2.1.5 Sikorsky Aircraft – Vineet Sahasrabudhe

4.2.2 Universities

4.2.2.1 Tech. University of Delft – Ping Chu ([abstract](#), [presentation](#))

4.2.2.2 Georgia Tech – Marc Costello ([abstract](#), [presentation](#))

Wednesday
5-Mar-08
12:30-2:00 p.m

LUNCHEON – Parleys 1&2

Subcommittee chairs, members and attendees will meet for lunch and agenda planning for Meeting No. 102

Wednesday
5-Mar-08
2:00-3:20 p.m.

5.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION

Stan Pszczolkowski and Raman Mehra, Co-Chairmen

5.1 “Modeling the Impacts of the A380 at Four Major United States Airports”, Jennifer Morris, FAA ([abstract](#), [presentation](#))

5.2 “Runway Status Lights”, Jeff Livings, FAA ([abstract](#), [presentation](#))

Wednesday
5-Mar-08
3:20-3:40 p.m.

BREAK

Wednesday
5-Mar-08
3:40-5:00 p.m.

**5.0 SUBCOMMITTEE C – AVIONICS AND SYSTEM INTEGRATION,
Cont'd**

Stan Pszczolkowski and Raman Mehra, Co-Chairmen

5.3 "Vision Directed Guidance and Control of Micro Air Vehicles", Randy Beard, Brigham Young University ([abstract](#), [presentation](#))

5.4 "DARPA Urban Challenge", Mark Minor and Tom Henderson, U of Utah ([abstract](#), [presentation](#))

Wednesday
5-Mar-08
6:00–7:00 p.m.

RECEPTION

Location: Parleys 1&2
Cash Bar Available

Thursday
6-Mar-08
7:30–8:30 a.m.

Breakfast - Wasatch 1&2

Thursday
6-Mar-08
8:00–10:00 a.m.

6.0 SUBCOMMITTEE D–DYNAMICS, COMPUTATIONS, AND ANALYSIS

Ron Hess and Siva Banda, Co-Chairmen

Roger Burton, Vice Chairman

6.1 "NAVAIR Airwake Modeling", Susan Polsky, NAVAIR ([abstract](#), [presentation](#))

6.2 "Modeling Airwake Disturbances on Rotorcraft in Shipboard Operations", Joe Horn, Penn State ([abstract](#), [presentation](#))

6.3 "Seeded Fault Testing and In-situ Analysis of Critical Electronic Components in Electro-Mechanical Actuator Power Circuitry," Dave Bodden, Lockheed Martin, ([abstract](#), [presentation](#))

Thursday
6-Mar-08
10:00-11:00 a.m.

BREAK

Thursday
6-Mar-08
11:00-12:20 a.m

**7.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS
VEHICLE CONTROL SYSTEMS**

Marc Steinberg, Chairman

Sanjay Garg & Jan DeLuca, Vice Chairmen

7.1 "Lessons Learned from Flight, In-Water, and Operator Evaluations of Intelligent Autonomy Technologies", Marc Steinberg, ONR ([abstract](#), [presentation](#))

7.2 "Sense and Avoid for UAVs in Controlled and Uncontrolled Airspace: Efforts in Germany", Klaus-Uwe Hahn, DLR ([abstract](#), [presentation](#))

Thursday
6-Mar-08
12:20–1:30 p.m. **Luncheon - Parleys 1&2**
PAB will meet for lunch & agenda planning for Meeting No. 102
Meeting attendees have open seating for lunch

Thursday
6-Mar-08
1:30-2:50 p.m. **7.0 SUBCOMMITTEE E – FLIGHT, PROPULSION, AND AUTONOMOUS VEHICLE CONTROL SYSTEMS, Cont'd**
Marc Steinberg, Chairman
Sanjay Garg & Jan DeLuca, Vice Chairmen

7.3 “Mixed-Initiative Dynamic Replanning for Multiple Unmanned Vehicles”, Draper LabsLance Page, ([abstract](#), [presentation](#))

7.4 “Mission Displays for Control of Multiple Autonomous Systems”, Emily Stelzer, Aptima ([abstract](#), [presentation](#))

Thursday
6-Mar-08
2:50-3:00 p.m. **BREAK**

Thursday
6-Mar-08
3:50-5:10 p.m. **8.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES**
Lou Knotts, Chairman
Pat Stoliker & Dave Klyde, Vice Chairmen

8.1 “747 Large Cargo Freighter HQ”, Jeff Masters, Boeing ([abstract](#), [presentation](#))

8.2 “Criterion to Estimate Optimum Lateral Static Stability Margin”, B. Lee, Boeing Commercial Airplanes ([abstract](#), [presentation](#))

Friday
7-Mar-08
7:30–8:30 a.m. **Breakfast - Wasatch 1&2**

Friday
7-Mar-08
8:00–9:20 a.m. **8.0 SUBCOMMITTEE A – AERONAUTIC AND SURFACE VEHICLES, Cont'd**
Lou Knotts, Chairman
Pat Stoliker & Dave Klyde, Vice Chairmen

8.3 “Alleviation of Pilot-Vehicle System Loss of Control through Smart-Cue and Smart-Gain Concepts - Flight Test Evaluation Results”, Dave Klyde, STI ([abstract](#), [presentation](#))

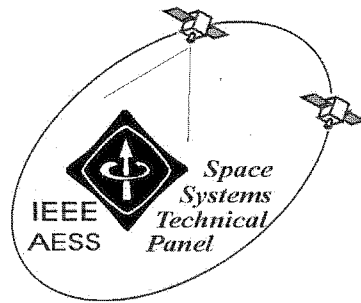
8.4 “Cooperative UAV Operations for Urban Reconnaissance”, Cory Schumacher ([abstract](#), [presentation](#))

Friday
7-Mar-08
9:20–12:20 p.m. **9.0 SUBCOMMITTEE B – MISSILES AND SPACE**
Phil Hattis, Chairman
John Weyrauch & Kevin Wise, Vice Chairmen

9.1 “Mars Reconnaissance Orbiter”, Eric Schmitz, Lockheed Martin ([abstract](#), [presentation](#))

9.2 "An Overview of the PredGuid Skip Entry Algorithm", Gregg Barton, Draper Lab ([abstract](#), [presentation](#))

9.3 "Precision Guidance Kit for 155mm Artillery", John Weyrauch, ATK ([abstract](#), [presentation](#))



Attachment 1.D

REPORT OF IEEE/AESS "SPACE SYSTEMS" PANEL

September 5, 2008

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

The following activities have been carried out in the period April 2008-September 2008:

Meetings for extending the existing links between AESS (in particular in Italy-Western Europe) and AFCEA (Armed Forces Communications & Electronics Association), Rome Chapter and AFCEA International.

On May 5, 2008 the Panel Coordinator, who is also VP of the AFCEA Rome Chapter, met the President and CEO of AFCEA International, Kent R. Schneider, who visited the AFCEA Rome Chapter. Pictures from the meeting are included in an overview on dual use - and the related link between AESS and AFCEA - that is going to be published in the Systems Magazine (October 2008 Issue).

A number of cooperation points and initiatives have been discussed. Two points are of particular interest of AESS:

- a possible extension of the Memorandum of Agreement on Dual Use, already existing between AESS and the AFCEA Rome Chapter, to AESS and AFCEA International;
- a community-oriented model that the AFCEA Rome Chapter is developing to enhance the potential of the industrial and academic participants to the Chapter. This model could be also interesting for a link between the AESS FoI and the related communities of AFCEA Rome Chapter.

The agreement between AESS and AFCEA has been highlighted during the 2008 IEEE Radar Conference in Roma (Gala Dinner, May 28, 2008)

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Final steps for the **publication of the book** *Aerospace Technologies and Applications for Dual Use - A New World of Defense and Commercial in 21st Century Security* – the first on the topic. It will be published in 2008 by River Publishers (P.Finocchio, R.Prasad and M. Ruggieri, Eds') and presented worldwide. The book moves from the main results of the International Symposium (Roma, Italy, September 12-14, 2007) on *Aerospace*

Technologies and Applications for Dual Use, organized by the AFCEA Rome Chapter with the technical co-sponsorship of AESS. The book chapters are derived from the key-note speeches, invited lectures, panel discussions and conclusions of the Symposium.

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Activities related to the co-chairing of Track 2 *Space Missions, Systems and Architecture* of the **2009 IEEE Aerospace Conference**, that will take place in Big Sky in March 2009.

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Activities related to the **CTIF_Italy** structure and launch of activities in the aerospace field. Promotion of the center worldwide. CTIF has recently opened another node in India and a second Danish node in Copenhagen. A new node will be opened in Japan in October 3, 2008. In the CTIF Joint Network, CTIF_Italy is strongly characterised for the aerospace activities.

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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 5rd edition of the **Master Course** in “Advanced Satellite and Communications Systems” at the University of Roma Tor Vergata and preparation of the next 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 **proposal** for research projects in the field of satellite navigation, EHF (Q/V and W) payloads, NavCom systems, Data Relay Satellite (DRS), SDR, advanced satellite constellations and related applications.

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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 2008 and 2009 Conferences/Workshops/Events.
- Activities related to projects, publications and teaching in the space system related topics.

Prepared on September 5, 2008 by: Marina Ruggieri

Attachment 1.E IEEE AES Radar Systems Panel

Report to AES Board of Governors Meeting, September 2008

1. Introduction

The Panel has met on two occasions since the last meeting of the Board of Governors: at the IEEE Radar Conference held at Rome, Italy in May 2008, and at the International Conference RADAR 2008 held at Adelaide, Australia in September 2008.

2. Conferences

Mark Davis will give a separate report on the radar conference program, but I can report that the IEEE Radar Conference held at Rome, Italy in May 2008 was an outstanding success, with ~650 attendees, 623 submissions from 46 countries, of which 411 contributions were accepted. In addition there had been a full program of tutorials, two plenary keynote lectures, and some truly memorable social events. Guest of Honor both at the conference and at the banquet was the Principessa Marconi, daughter of Guglielmo Marconi. Exceptionally, this conference had been held outside of the USA.

The next conference in the IEEE Radar Conference series will take place in Pasadena CA in May 2009. Proposals to host the 2011 Conference have been received from Kansas City MO and from Atlanta GA; both of these are considered strong, and the decision will be taken shortly.

The next conferences in the International Radar Conference series are Bordeaux, France (October 2009), and Washington, DC (May 2010). The future of the 5-year cycle of International Conferences was discussed at the Panel meeting at the Adelaide Conference, in the expectation that a decision will be taken at the next meeting of the Panel.

3. Radar terminology and letter band standards

Revision, ballot and publication of the terminology standard (Std-686) is now completed. At the Rome, Italy meeting it was agreed that the letter band standard (Std-521) should be reaffirmed without change. I am grateful to Joe Bruder for his outstanding work in managing the revision of these standards.

4. Awards

At the banquet at the Rome, Italy conference the Nathanson Award was presented to Dr Maria Sabrina Greco and the Pioneer Award to Professor Yaakov Bar-Shalom, as well as several new IEEE Fellow Awards.

I was personally pleased that my nomination of Dr Philip Woodward (amongst other things the originator of the Ambiguity Function) for the Picard Award was successful.

5. Panel Charter

The Panel was asked to prepare a Charter to formalise its scope and activities. This was discussed at the Adelaide meeting, and the document appended below produced. This should be reviewed, and if necessary revised, on an annual basis.

Hugh Griffiths
Chair, AES Radar Systems Panel
11 September 2008

CHARTER

1. The Radar Systems Panel is a Technical Panel of the IEEE Aerospace and Electronics Systems Society.
2. The purpose of the Panel is:
 - (i) to oversee the program of IEEE Radar Conferences;
 - (ii) to manage the nomination and selection of IEEE Awards in the domain of radar;
 - (iii) to promote and support publications in the domain of radar;
 - (iv) to promote educational activities in the domain of radar;
 - (v) to encourage the submission of nominations for IEEE Fellows in the domain of radar;
 - (vi) to provide periodic revision of IEEE Standard 686 'Standard Radar Definitions' and IEEE Std 521 'IEEE Standard Letter Designations for Radar Frequency Bands'
3. The Panel is composed of representatives of industry, government laboratories, educational institutions and professional societies who are active in the domain of radar systems.

ORGANIZATION

The Radar Systems Panel meets at least annually at one of the IEEE Radar Conferences. Further discussions are held by email, and decisions taken as appropriate. The Panel elects a Chairman, whose term of office is normally three years.

OBJECTIVES

The panel established the following objectives for the forthcoming year at the meeting that was held on 3 September 2008:

Panel Objectives:

1. To reaffirm IEEE Std 521 'IEEE Standard Letter Designations for Radar Frequency Bands'
2. To reach a decision on the future of the cycle of international conferences

Last Updated 10 September 2008