

IEEE AESS Radar Systems Panel

Minutes of the Radar Systems Panel meeting held on 8 May 2012 at the 2012 IEEE RADAR Conference, Atlanta GA.

Present:

Mark E Davis (Chair)	Member	Consultant, Prospect NY
Hugh Griffiths (Past Chair)	Member	University College London, UK
Maria Greco (Vice Chair)	Member	University of Pisa, Italy
Rave Adve	Member	Univ Toronto Canada
Chris Baker	Member	Ohio State Univ, Columbus OH
Dale Blair	Member	GTRI Atlanta GA
Shannon Blunt	Member	Univ Kansas, Lawrence KS
Joe Bruder	Member	GTRI, Atlanta GA
Gerard Capraro	Member	Capraro Technology, Utica NY
Marvin Cohen	Host	Radarcon12, Atlanta GA
Jerry Crain	Member	Oklahoma Univ. Norman OK
Jim Day	Member	Lockheed Martin, Syracuse NY
Antonio De Maio	Member	University Naples IT
Joe Fabrizio	Member	DSTO Edinburgh Australia
J Scott Goldstein	Member	QinetiQ USA, Arlington VA
Jill Gostin	Host	GTRI Atlanta GA
Marshall Greenspan	Member	Northrop Grumman, Connecticut
Marin Guilding	Guest	Vancouver Canada
Braham Himed	Member	AFRL Dayton OH
Teng Long	Member	Beijing Inst. Of Technology, CN
Marc Lesturgie	Member	ONERA, France
Bob McMillan	Member	Retired, Florida
John Milan	Member	Retired, Los Angeles CA
Eric Mokole	Member	NRL, Washington DC
Michael Picciolo	Member	QinetiQ USA, Arlington VA
Murali Rangaswamy	Member	AFRL Dayton OH
Tony Ponsford	Guest	Ottawa Canada
Brian Rigling	Member	Wright State University, OH
John Smith	Member	Consultant, Philadelphia PA
Joe Teti	Member	Lambsci, Philadelphia PA
Simon Watts	Member	Thales UK
Iram Weinstein	Member	SAIC Arlington VA
Michael Wicks	Member	Consultant, Utica NY
Mark Yeary	Guest	Oklahoma Univ, Norman OK
David Zasada	Member	MITRE Rome NY

1. Introduction; RSP Chair

Panel Chair Mark Davis gave a discussion on the objectives of the Radar Systems Panel meeting and new initiatives for 2012. The main points are:

- Strengthen the RSP Membership roles – Active members should be participants in at least one Committee.
- Expand existing Committees with active members to better accomplish their roles and missions – need more depth in the initiatives of RSP to satisfy the Panel Charter objectives
- Establish new Committees to address evolving Radar technology or applications opportunities
- Maintain and Strengthen the Global reach of Radar System Panel and expand membership in AESS – IEEE objectives are to expand membership in emerging countries. Current RSP is only 20 percent outside of US.
- Maintain communications with AESS Technical Operations to keep AESS support for activities – The RSP Charter and past year's minutes are hosted on the AESS web site <http://ieee-aess.org/>

A brief summary was given of the last RSP meeting, held in Chengdu China at the 2011 International Conference on Radar. This was a successful Conference with active participation of several RSP members. China has a strong initiative in educating new radar engineers. As such each student was given a complementary access to several Tutorials. The average attendance in the Tutorials was over 40 people. In addition, there was a strong participation by AESS members in the Distinguished Lecture series. Mark Davis, Hugh Griffiths and George Schmidt were AESS DL participants.

The Panel Chair expressed our great appreciation to the Atlanta IEEE Section for hosting the 2012 IEEE Radar Conference as well as the RSP Meeting.

2. Panel Vice Chair Report: Maria Sabrina Greco summarized her initiatives as Vice Chair,

- Strengthening the Women In Engineering programs within the Radar Conference series, and particularly RSP – she suggests a luncheon meeting on WIE at the next IEEE Radar Conference in Ottawa Canada
- More global participation in RSP activities.

A brief description on the evolution of the AESS Magazine was given. There is a new format in the magazine, to include a more rapid publication of articles, and an emphasis on providing materials to educate members outside of narrow technical fields. The Plenary Talk on Radar emerging technologies is a good example, as it will appear in the forthcoming edition of the AESS Magazine. Maria encouraged the RSP Panel Members to submit future articles to the Magazine, with an emphasis on excellent papers from the Radar Conference.

Simon Watts asked if the new AESS Magazine could be distributed to the rest of the world more rapidly. It has information on upcoming Conferences and other AESS business, that tends to be “after the fact” with the current delays in publications and delivery. Maria Greco and Dale Blair both emphasized that the new publications were going to be faster and lighter, so they hope they will be mailed more promptly to our members. In addition, the Magazine was going to be distributed electronically. It was agreed that Dale would look into how we can distribute the .pdf version via the AESS Web Site.

3. Committee Reports

- 3.1 Standards Committee: Joe Bruder gave a presentation on the status of IEEE STD 1672 Ultra Wideband Radar. There is an UWB Working Group lead by James Taylor that is pushing standardization of UWB definition as well as technical responses to the many regulations on ultra wideband spectrum utilization. The definition of UWB has been ambiguous in the past. However, recent communications and a vote of the UWB Committee has posed the “25 percent bandwidth” definition and eliminated the previous “or 500 MHz”.

Joe pointed out that the IEEE STD 521 (Letter band) is coming up for renewal. The Standards Committee needs to be expanded to handle this and other related issues.

It was also pointed out that IEEE STD 686 (Radar Definitions) should be revised. Since there have been extensive changes in the Radar community on new modes and technologies, the definitions portion of this standard needs extensive work.

The Standards Committee needs to revise and publish their formal policies and procedures. Joe Bruder is asking for volunteers to assist in the revitalization and strengthening of this important effort. John Milan volunteered for and was confirmed as the Secretary of the Standards Committee.

- 3.2 Awards Committee: Gerard Capraro gave a short summary of the Fred Nathanson Memorial Award. After a thorough selection process, Dr Shannon Blunt (Kansas University) was selected for this award for the best young engineer. His contributions were recognized for advanced signal processing with emphasis on realizable systems, and leadership in waveform diversity. He was being presented the award at the 2012 IEEE Radar Conference banquet.

Joe Guerci is the coordinator for the Warren D. White award, but was not able to make the meeting. The 2012 recipient is Dr Braham Himed (AFRL)

for his extensive research and publications on advanced and adaptive signal processing techniques, MIMO and passive radar, and STAP.

There currently is not a structured committee for Awards, and the awards extend beyond the Nathanson and White Awards. Those IEEE and AESS Awards that are of interest to the Radar Systems Panel include the Barry Carlton Award, Mimno Award, Picard Award, and the Pioneer Award. The Chair asked that several members of the RSP volunteer to join this Committee, establish a charter and procedure for promoting and selecting Award recipients and select a Committee Chair from their members.

3.3 Education

RSP does not have a current Education Committee Chair. The Committee has been inactive since 2004, when John Smith was leading the committee. There are several important efforts that need more active participation including student participation in the Conference, Distinguished Lectures, and development of Tutorials for the Radar Conference, and encouraging student chapter's projects. The Chair suggested that members of academia on the RSP take ownership of this Committee. Pierfrancesco Lombardo, Ravi Adve and Mike Picciolo volunteered to re-establish this committee. John Smith volunteered to act as an advisor. Subsequent to the meeting Chris Baker also volunteered to join the committee.

Iram Weinstein (AESS VP Education) talked about the distinguished lecturer program. Several RSP members are participating in this outreach effort. However, many of the advertised lectures have not been presented in several years. The AESS policy under consideration is for a 3-year DL period, renewable based on interest and participation. He asked the RSP to suggest new topics for future development.

The AESS has a budget for new initiatives, such as Education and new Conferences/Workshops. RSP Members need to provide ideas on how to better utilize the available resources to encourage new students and researchers in our field.

Dale Blair pointed out that the Student Paper efforts of RadarCon12 were very successful. Over 50 papers (out of the 170) were by student authors. However, in several cases only the students were registered at the conference, and their faculty co-authors did not participate or register. This issue needs to be considered in the formulation of future IEEE Radar Conferences.

3.4 Potential New RSP Committees: Mark Davis had requested that two new Committees be considered for inclusion in the RSP Charter. Those

two are Waveform Diversity, and Civilian/Commercial Radar Developments. A presentation was provided by Mark Yeary Oklahoma University on Weather Radar with extensions to other commercial and civilian applications, and open discussion covered the Waveform Diversity.

The National Oceanographic and Atmospheric Agency and Federal Aerospace Agency are conducting a research on severe weather detection, tracking and alerts for the United States air space. Oklahoma University hosts the development activity for this with shared responsibility with MIT Lincoln Laboratory and Lockheed Martin. Mark Yeary provided details on the current technology challenges, as a potential focus for the new Committee. He committed to organize a Terms of Reference, and attract other RSP Members to join him on this Committee.

Mike Wicks talked about the history of Waveform Diversity Conferences, which have been organized outside of AESS support. The 2012 WDD conference was held in Hawaii, was very lightly attended, and did not have any IEEE support due to lack of a valid Technical Cosponsorship MOU. With the expansion of Ultra Wideband regulations by NTIA and new efforts on compressive sensing and cognitive radar, a new RSP Committee is recommended. Hugh Griffiths stressed the financial and organizational benefit of continuing any Waveform Diversity efforts in the future. A potential new Committee needs membership and terms of reference. An emphasis on congested spectrum should be considered as part of this committee.

3.5 Nomination and Appointments Committee: Jim Day summarized the efforts on this new Committee. The Committee is comprised of former RSP Chairs: Jim Day, Mike Wicks, Dale Ausherman, Hugh Griffiths. The preliminary task is to look at the current number of RSP Members and their activities. Of the 55 “members” listed in the RadarCon program, only 24 were attending the Conference. Some points that were discussed include:

- Too many people who are listed as members are inactive, not having attended a RSP meeting in over 2 years.
- The number of members from the International community is on the rise but only comprises 20 percent of the listed membership.
- There are only 3 women listed, and 2 of them are inactive. That is why the RSP Vice-chair is leading the special effort to expand the international and women participants.
- Jim Day is proposing a procedure for selection and retention of Members. It will be a combination of RSP Meeting attendance, and participation in RSP Committee and AESS activities supporting the art of radar.
- A list of prospective members was provided. However, the membership was asked to propose more candidates. The N&A

Committee will make recommendations to the Chair and Vice-chair after looking at CVs and contacting the candidates to assure they will be willing to participate in RSP initiatives/committees.

A brief discussion on Fellow nominations and endorsement by the RSP to AESS followed. Jim Day and Mike Wicks will discuss the process and make recommendations to both the RSP Chair and Hugh Griffiths (AESS President).

3.6 Conferences

- (i) Conference Overview: Shannon Blunt (Kansas University) summarized the current status of Conference planning. There is now a full slate of IEEE Radar Conferences through 2016: Ottawa (2013), Cincinnati (2014), Washington DC (International, 2015), Philadelphia (2016). And Seattle has expressed interest for 2017. Two RadarCon final reports have been finalized and IEEE has closed out their books on 2010 International Radar Conference (Washington DC), and 2011 RadarCon Kansas City. Both were successful conferences, achieving the requisite surplus necessary for funding AESS and local Chapter activities.
- (ii) The International Radar Conference series is still quite strong. The next conferences in this series are: 2012 Glasgow Scotland – Mike Cherniakov Chair; 2013 Adelaide Australia – Andrew Shaw Chair; 2014 Lille France – Marc Lesturgie Chair. Mark Davis emphasized that we need to start the Technical Cosponsorship Memoranda of Understanding with AESS early.
- (iii) RadarCon12 Update: Dale Blair and Jill Gostin summarized the initial results from the ongoing Radar Conference. Key points are:
 - There have been 327 registrants to date. They had hoped for 400 registrations, but the economic downturn and visas from China have reduced the number of attendees. Of the current registrations 64 were students and 17 Life Members.
 - The number of papers submitted was 256, of which 170 were accepted into the program.
 - There were 22 exhibitors; and 11 tutorials, with a total of 129 seats.
 - The expenses at the hotel for food are running high. However, with late registrations and reduction in the food and beverage commitments, the Conference is on track to achieve the 20 percent surplus.
- iv. RadarCon13: Tony Ponsford covered the planning and venue for next year's IEEE Radar Conference in Ottawa Canada. They have a new Conference Centre and very attractive arrangements with the local hotel. A very fine presentation was given at the Banquet, and Call for Papers is now active.

- v. RadarCon 14 Cincinnati OH: Brian Rigling summarized the early planning for the conference in May 2014. The venue is the Cincinnati Marriott with very attractive facilities and a negotiated rate. The conference will be 100 percent supported by AESS, since the Dayton IEEE Section could not support a conference outside of Dayton and Cincinnati IEEE Section did not have the resources. The organizing committee has strong support from AFRL, Univ. Dayton, Wright State University, The Ohio State University and several small companies in the area.
- vi. 2012 International Radar Conference: Hugh Griffiths gave a short discussion on the progress in organising the IET International Radar Conference, to be held in Glasgow, Scotland, 22 – 25 October 2012. Prof. Mike Cherniakov (University of Birmingham) is the General Chair; Technical Programme Co-Chairs Prof. Hugh Griffiths (University College London) and Dr. Evan Hughes (Cranfield University), and Tutorial Programme Chair Prof. Simon Watts (Thales). The Technical Committee has received a large number of abstracts and is anticipating notifying authors by the end of May.
- vii. 2013 International Radar Conference: Joe Fabrizio described the present status of the 2013 IEEE Australia International Radar Conference, to be held during October in Adelaide, Australia. Andrew Shaw from Defense Science Technology Organisation was recently named the General Chair, and detailed planning has started. There is a new Adelaide Conference Centre being constructed, so the planners decided to hold it in Adelaide again. Mark Davis volunteered to contact IEEE HQ and expedite the (late) Financial MOU between IEEE South Australia and Engineers Australia.
- viii. 2104 IEEE International Radar Conference: Marc Lesturgie gave an update on the early planning for 2014 SIE International Radar Conference in France. There had been a strong selection process to pick the location. Recently Lille France became the selected venue, due to very strong promises by local French industry for participation in the planning and execution of the Conference. The IEEE Technical Cosponsorship MOU is in final approval cycle at IEEE HQ.

4. Action Items

- a. AESS will look into distribution of the AESS Magazine via the Web Site to expedite delivery to the members outside of the US – Dale Blair
- b. Education Committee needs to be re-established and publish a Policies and Procedures charter, to include future Student Paper procedures for RadarCon – Ravi Adve, Pierfrancesco Lombardo, Mike Picciolo, Chris Baker, John Smith
- c. Topics for Distinguished Lecturer series need to be provided to Iram Weinstein – All

- d. Establish policy and procedure for N&A Committee – Jim Day
- e. Make recommendations on future IEEE Fellow nominations and endorsements by the RSP – Jim Day and Mike Wicks
- f. Terms of Reference and plans for Civilian/Commercial Radar Technologies – Mark Yeary
- g. Terms of Reference and plans for a (expanded) Waveform Diversity Committee – Mike Wicks (or other volunteers)
- h. Contact IEEE HQ on the Australian International Radar Conference MOU – Mark Davis

There being no further business, the meeting closed at 2215.

Mark E Davis
Chair, AESS Radar
Systems Panel