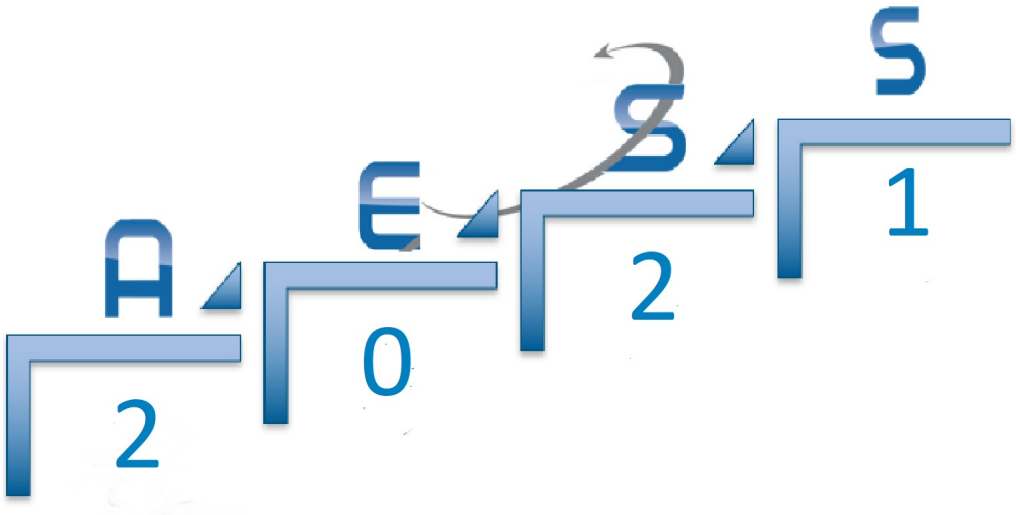

Growth Through Engagement and Teamwork

Marina Ruggieri
VP – Technical Operations

May 6&7, 2021

Virtual Spring BoG Meeting

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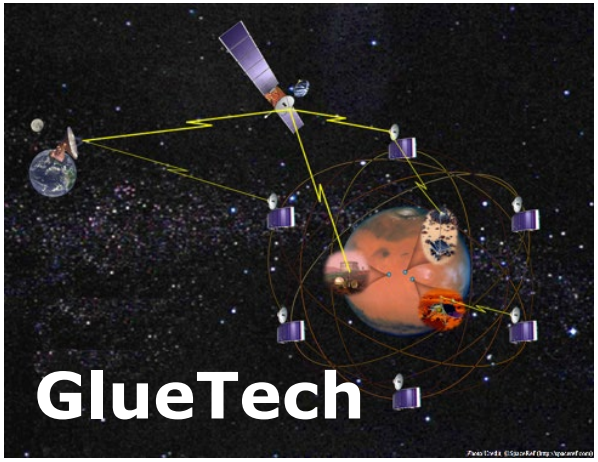
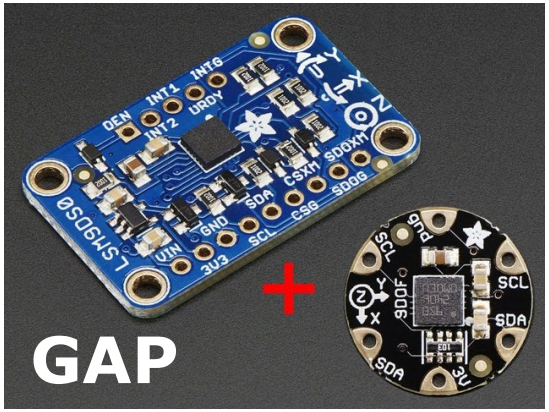
2021 Tech Ops Organization

- **Tech Ops Committee**: Steve Butler, Marina Ruggieri and George Schmidt
- **Panel Coordinator**: George Schmidt
- "Vision & Perspectives" **POC** from Panels
- **POC Committee**

2021 Tech Ops Organization





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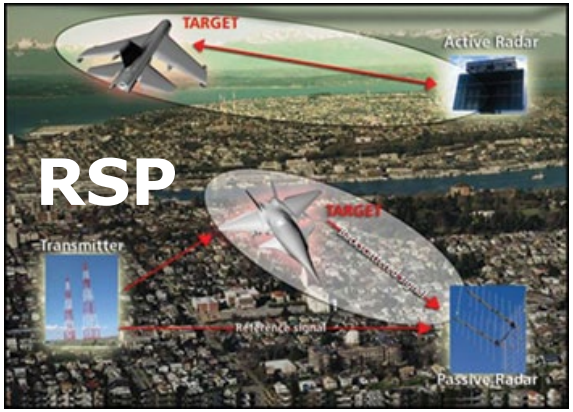

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2021 Tech Ops Organization

PANEL	Chair
ASP	Roberto Sabatini
Cyber	Kathleen Kramer
GlueTech	Claudio Sacchi
GAP	Randall Curey
NSP	Michael Braasch
RSP	Nathan Goodman

2021 Tech Ops Major Goal

- Alignment of Tech Ops activities with the dynamic impact of pandemic and post-pandemic.

2021 Tech Ops Objectives

- Identification of visionary topics for Future Directions and Society FoI
- Solicit panel articles for Systems and TAES as well as inputs to QEB
- Cross-panel activities and super-topic

Objective Description

S – Identification of visionary topics for Future Directions and Society FoI

M – Status Presentation at BoG meetings

A – Assigned to: TO Committee and Panel POC's)

R – Relevant to 2020 goal #2 and 2021 goal

T – Time period for performance: Feb-Dec 2021

Objective Description

S – Solicit panel articles for Systems and TAES as well as inputs to QEB

M – All Panels contributing

A – Assigned to George Schmidt and Panel Chairs

R – Relevant to 2020 goal #6 and 2021 goal

T – Time period for performance: Feb-Dec 2021

Objective Description

S – Cross-panel activities and super-topic

M – active POC's and super-topic identification

A – Assigned to Tech Ops Committee and Panels POC's

R – Relevant to 2021 goal

T – Time period for performance: Feb-Dec 2021

2021 Tech Ops Activities:
V&P POC Committee

Each Panel has been asked to identify a POC for “Vision & Perspectives” (not the Chair)

PANEL POC-V&P KOM : March 18, 2021

POC for Vision & Perspectives (POC-V&P)

ASP	**Giancarmine Fasano** (giancarmine.fasano@unina.it)
CYBER	**Joe Dauncey** (Joe.DAUNCEY@nats.co.uk, joe@dauncey.net)
GAP	**Matt Spencer** (matthew.c.spencer@ngc.com)
GLUE TECH	**Ernestina Cianca** (cianca@ing.uniroma2.it)
NSP	**Zak Kassas** (zkassas@uci.edu)
RSP	**Willie Nel** (wajnel@csir.co.za)

PANEL POC-V&P KOM: shared material

1) AESS Field Of Interest (FOI)

The field of interest shall be the organization, systems engineering, design, development, integration, and operation of complex systems for space, air, ocean, or ground environments.

These systems include but are not limited to navigation, avionics, mobile electric power and electronics, radar, sonar, telemetry, military, law-enforcement, automatic test, simulators, and command and control

2) Goals (*source: Charter*) of the 6 Panels

PANEL POC-V&P KOM: description of actions and activities

- **Selection of a Chair** (during KOM) and be independent in the activity (meetings, chats, material exchange, etc)
  [done - Joe Dauncey, Cyber]
- **Identification of visionary topics** for Future Directions and Society FoI **[on going]**
- Cross-panel exchanges and **super-topic** **[on going]**
- **I/F with Tech Ops Committee** (OK)

POC Visions and Perspectives Committee

Joe Dauncey (Chair)

Report - April 2021

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Committee Scope

- Identification of visionary topics for Future Directions and Society Field of Interest
- Cross-panel exchanges and super-topics
- Interface with Tech Ops Committee

AESS Panel Representation

AESS Panel	Representative
Avionics Systems Panel (ASP)	Giancarmine Fasano
Cyber Security	Joe Dauncey (Chair)
Glue Technology for Space Systems Technical Panel (GlueTech)	Ernestina Cianca
Gyro and Accelerometer Panel (GAP)	Matt Spencer
Navigation Systems Panel (NSP)	Zak Kassas
Radar Systems Panel (RSP)	Willie Nel

Supported by the Technical Operations Committee : Marina Ruggieri, Steve Butler, George Schmidt
Logistical Support : Amy Krutz, Conference Catalysts

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Status Update : April 2021

- A kick-off meeting was held on 18th March with the Tech Ops Committee
- The Panel met on 31st March for an initial scoping meeting
- A hypothesis has been developed, which is currently being reflected on by the Committee members
  - This has included review of the AESS Mission Statement, Field of Interest and Strategic Goals
- Potential interventions, based on the initial hypothesis, have been identified.
  - These interventions will be further developed once the hypothesis has been locked down.

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Draft Hypothesis

- We are a 'cool' society solving grand problems but our mission is not obvious to others (the society's name doesn't reflect these either)
- We are traditional in the scope of problems we are focused on and the approaches
- We do what it takes to solve big problems, but the positioning of the society hides it from casual onlookers, who might be interested
- Our Mission has been compromised by trying to be all things to all people, where it could provide a stronger vision with a better resonance
- We need to address this to meet future trends
- Some development is taking place, but it is not clearly reflected in the headlines of the Society
- The Society often approaches from a 'top down' perspective, which is uncommon amongst other Societies - we start from application/needs - this is why we are so wide
- We do what we need to solve the grand problems - we will bring in the people, skills, disciplines needed to solve the problem

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Next Steps

- Progress definition of the hypothesis
- Define vision
- Define appropriate interventions
- Define possible super topics

- Further meetings in plan to support

Panel Activities

- Review
- Report from Panel Coordinator
- Reports from Panel Chairs

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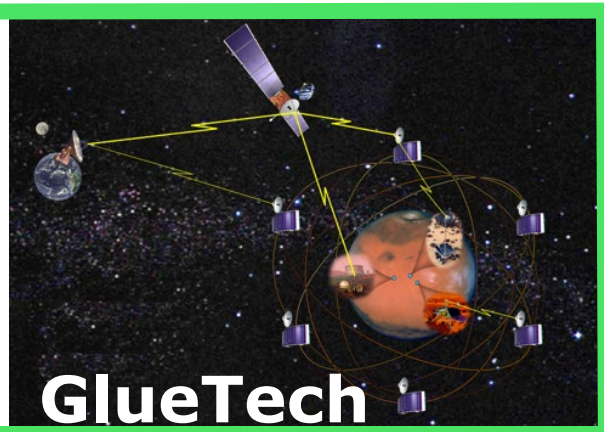
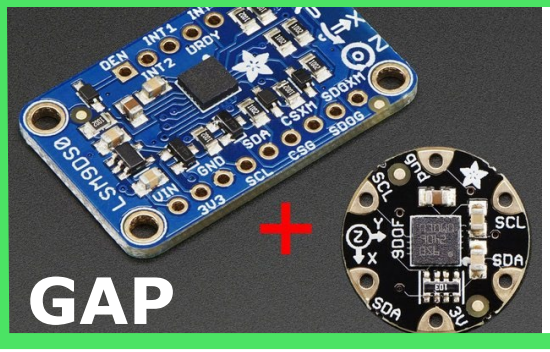


Most of AESS current FoI covered



2021 Tech Ops Panels at a glance

PANEL	STATUS	ACTIVITIES REPORT	PERSPECTIVES REPORT
ASP	●	●	●
Cyber	●	●	●
GlueTech	●	●	●
GAP	●	●	●
NSP	●	●	●
RSP	●	●	●

Panel Summaries

May 2021
Accomplishments & Activities

George Schmidt – Panel Coordinator

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ASP – Main Accomplishments and Activities

- The Publications Committee led a Special Issue of the Magazine (***Avionics Systems: Future Challenges***), published in April 2021. Editorial paper:
  - R. Sabatini, K. A. Kramer, E. Blasch, A. Roy and G. Fasano**, "From the Editors of the Special Issue on Avionics Systems: Future Challenges."** IEEE Aerospace and Electronic Systems Magazine, Vol. 36, No. 4, pp. 5-6, April 2021, DOI: 10.1109/MAES.2021.3064616.
- The R&I Committee and Publications Committee proposed two additional Special Issues for 2021:
  - ***UAS Traffic Management (U-Space) and Urban Air Mobility***, currently being finalized (CfP publication in April/May)
  - ***Space Domain Systems***, focusing on Space Domain Awareness and Space Traffic Management (CfP already published)
- Several members of the ASP served as Distinguished Lecturers (DL) and also contributed to the DL Webinar Series. These DLs expanded the offerings of the IEEE lectures, webinars and potential tutorials at future conferences or Chapter meetings.
- The Avionics Conference Committee actively supported the organization and management of the DASC and ICNS Conferences. ASP members assisted with conference tutorials, local arrangements, and overall planning.

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Cyber – Main Accomplishments and Activities

- The panel will meet via teleconference Wednesday, July 21.

- DASC (September 2021, hybrid)
  - Vanderleest and Kramer are Track Chairs for Cyber, Software, and Systems Track of the DASC.
  - Panel Meeting session

- ICCST (Carnahan Conference) (September 2021, virtual)
  - Panel meeting held at each Carnahan, organized by panelists Gordon Thomas and William Claycomb

Contribution to (not AESS):

- 1st Workshop on Secure and Reliable Communication and Navigation in the Aerospace Domain (SRCNAS)
  - 6th IEEE European Symposium on Security and Privacy http://www.ieee-security.org/TC/EuroSP2021/

GlueTech
Main Accomplishments and Activities

- Organization of the **Plenary Session 4A**: "Non-Terrestrial Network -Backhaul (Workshop)", **Wireless World Research forum on Hyperconnectivity**, Kuala Lumpur (MAL), 18-21 January 2021 (virtual conference).

- **Talk** by Walt Downing (panel member) at **"Explorando Futuro 202X"** (initiative organized by IEEE Student Branches of Region 9). Title of the talk: "*Spacecraft Avionics and Scientific Instruments"*, April 16, 2021, available at: https://www.youtube.com/channel/UCM7O5ElhNILMtO0eZrJNMPg

- Organization of the Session 4.03: "Glue Technologies for Space Systems" at **IEEE Aerospace Conference 2021** (in virtual modality).

- The **Summer School for PhD students**: **"Frontier Technologies for Future Space 2.0 Communications »** will be organized (in virtual manner) by the panel members C. Sacchi, T. Rossi, M. Marchese and F. Granelli from **6 to 10 September 2021**. Lecture topics and speakers have been fixed; lecture schedule is currently under discussion. The patronage of Italian Space Agency (ASI) and AESS has been asked for this event.

- The "Glue Tech" panel has been **awarded** by IEEE AESS as "Outstanding panel of the year 2020"

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GAP – Main Accomplishments and Activities

- The revision of 952, "IEEE Standard for Specifying and Testing Single-Axis Interferometric Fiber Optic Gyros" has been published."
- The ballot for the revision of 1559, "Standard for Inertial Systems Terminology" is in progress.
  - Resolved comments received during the ballot and recirculated.
  - Comments received from recirculation ballot.
- Revision of 1431, "Standard for Specifying and Testing Coriolis Vibratory Gyros" is in progress.
- Development of 1780, "Standard for the Specification of Inertial Measurement Units (IMU)" is complete.
  - Comments received from initial ballot.

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NSP – Main Accomplishments and Activities

- Primary panel responsibility is support of the PLANS conference
- U.S. Institute of Navigation (financial sponsor of PLANS) moved the next offering from 2022 to 2023 due to issues related to the pandemic
- Panel met in March 2021 to start the organization of the next PLANS conference
- An ad hoc group has been formed to organize an IEEE navigation conference to be held in conjunction with the International Global Navigation Satellite Systems (IGNSS) symposium in Australia in late 2022

RSP – Main Accomplishments and Activities

- 2021 IEEE Radar Conference originally planned for Atlanta will be virtual. The dates are May 10-14. The venue gave us some difficulty about the contract – we ultimately agreed to reschedule an in-person Atlanta conference for the IEEE International Radar Conference in 2025
  - The "IEEE Radar Summer School" will be held again as a virtual activity held in partnership with the IEEE Radar Conference in 2021
  - Also planning another virtual "Radar Challenge" competition
  - There are several sessions planned on civilian applications (automotive, biomedical) and novel radar science (quantum radar, …)
  - Dr. Bill Melvin is organizing a celebration of the life of Dr. Michael Wicks, long-time contributor and leader in the radar community who made a positive impact on many of our members, but passed away in December

- After completion of 2021 IEEE Radar Conference, I'll be asking the Conferences Committee and recent conference organizers to consider whether/how virtual components can be incorporated into future in-person events – to expand participation without detracting from in-person experience and number of in-person attendees

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Panel Detailed Reports

Accomplishments & Activities

From Panel Chairs

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Avionics Systems Panel

Accomplishments & Upcoming Plans

AESS BoG Meeting

Rob Sabatini

Chair, Avionics Systems Panel

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Avionics Systems Panel

The Panel is composed of IEEE Associate or higher level members who are representatives of industry, government laboratories, educational institutions and professional societies, and who are active in the domain of Avionics. Its main objectives are:

- Promote and support collaborative research initiatives in the domain of Avionics.
- Develop and disseminate high-quality IEEE publications in the domain of Avionics.
- Promote and support educational activities in the domain of Avionics.
- Sustain and oversee the programs of the IEEE/AIAA Digital Avionics Systems Conference (DASC) and the Integrated CNS Conference; and contribute to other conferences and dissemination initiatives.
- To manage the nomination and selection of candidates for IEEE Awards in the domain of Avionics.
- To encourage the submission of nominations for IEEE Fellows and Senior Members in the domain of Avionics.
- To recommend and support new IEEE Standards or revisions of existing IEEE standards pertaining to the domain of Avionics.

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Accomplishments and Activities

- The ASP continued its active engagements in the avionics research, innovation, education, standards, cyber and UAV initiatives in 2021.
- The Education Committee and R&I Committees led the development of two AESS Magazine papers:
  - R. Sabatini, A. Roy, E. Blasch, K. A. Kramer, G. Fasano, I. Majid, O. G. Crespillo, D. A. Brown and R. Ogan, **"Avionics Systems Panel Research and Innovation Perspectives."** IEEE Aerospace and Electronic Systems Magazine, Vol. 35, Issue 12, pp. 58-72, December 2020. DOI: 10.1109/MAES.2020.3033475
  - I. Majid, R. Sabatini, K. A. Kramer, E. Blasch, G. Fasano, G. Andrews, C. Camargo and A. Roy, **"Restructuring Avionics Engineering Curricula to Meet Contemporary Requirements and Future Challenges."** IEEE Aerospace and Electronic Systems Magazine, Vol. 36, No. 4, pp. 46-58, April 2021. DOI: 10.1109/MAES.2020.3043138

The first paper listed is a position paper portraying the ASP vision on avionics systems future evolutions, with an identification of key research challenges and industry-focused innovation opportunities.

The second paper listed stimulates formal education on avionics systems through both undergraduate an post-graduate programs in universities. This is to mitigate the projected shortfall of qualified avionics engineers to sustain Research, Development, Test & Evaluation (DRT&E), Operations and Maintenance, Repair and Overhaul (MRO) activities in the field.

Accomplishments and Activities

- The Publications Committee led a Special Issue of the Magazine (***Avionics Systems: Future Challenges***), published in April 2021. Editorial paper:
  - R. Sabatini, K. A. Kramer, E. Blasch, A. Roy and G. Fasano**, "From the Editors of the Special Issue on Avionics Systems: Future Challenges."** IEEE Aerospace and Electronic Systems Magazine, Vol. 36, No. 4, pp. 5-6, April 2021, DOI: 10.1109/MAES.2021.3064616.
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- The Avionics Conference Committee actively supported the organization and management of the DASC and ICNS Conferences. ASP members assisted with conference tutorials, local arrangements, and overall planning.

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Accomplishments and Activities

- The Autonomous Systems Committee planned drone competitions as STEM engagement activities with universities and high schools. These competitions will be part of DASC 2021 and successive editions.
- The R&I and UAV Committee members are collaborating with NASA and participating to AAM and UTM technical meetings and workshops.
- The Awards Committee is discussing the possible creation of a new Avionics Award. One of the candidatures submitted by the Awards Committee was selected for the IEEE AESS Early Career Award. This will be formally conferred at DASC 2021.
- The R&I, Education and Standards Committees collaborated with ICAO, IFATCA, EASA, EUROCAE and SESAR initiatives to promote avionics education and the evolution of certification standards for UAS Traffic Management and Advanced Air Mobility.

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Cyber Security Technical Panel Spring 2021 Update

Kathleen Kramer
Chair

April 2021

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Overview

- The AESS Cyber Security panel promotes and supports cyber security technical activities in those aspects of cyber security relevant to complex systems for space, air, ocean, or ground environments, particularly those that apply to aviation and aerospace.

Summer Cyber Series –Advancing Panel Topics and Local Engagement

- Many of our AESS local chapters have not been able to hold technical talks as meeting venues and in-person meetings have become unworkable. One of the advantages of the difficult times is that the access and ability to hold virtual meetings has vastly increased, and our panel can perhaps advance our technical interests by enabling chapters to offer some meetings.
- This was very successful in Summer 2020 and is planned for Summer 2021, beginning on Wednesday, May 26.
  - Last year's lectures culminated in approximately 400 registrants for the August talk in Boston by Eli Brookner.
- This is a more local-out approach with virtual DLs that complements and promotes that program.
- Provided opportunities for local interaction for members, even without active chapter.

Virtual Distinguished Lecture Webinars and the Panel

The webinars were organized in Fall 2020 in series:

- Series I – Radar 1
- Series II – Radar 2
- Series III – Avionics
- Series IV Navigation

The panel's cyber security interests are applied often to Avionics and or Navigation, and those series both included 3 distinguished lectures on topics and speakers from the panel.

For Spring/Summer 2021, the webinars are less concentrated by topic, but Cyber Panel members are included there as well, specifically R. Sabatini and E. Blasch. [and we'd like to claim George Schmidt as a third on this list, even if we're not his first affiliation]

Conferences, Workshops, and Panel Meetings

- The panel will meet via teleconference Wednesday, July 21.

- DASC (September 2021, hybrid)
  - Vanderleest and Kramer are Track Chairs for Cyber, Software, and Systems Track of the DASC.
  - Panel Meeting session

- ICCST (Carnahan Conference) (September 2021, virtual)
  - Panel meeting held at each Carnahan, organized by panelists Gordon Thomas and William Claycomb

Contribution to (not AESS):

- 1st Workshop on Secure and Reliable Communication and Navigation in the Aerospace Domain (SRCNAS)
  - 6th IEEE European Symposium on Security and Privacy http://www.ieee-security.org/TC/EuroSP2021/

Publications

- Panel is overdue for a Special Issue on Cyber Security in Aerospace Systems for SYSTEMS Magazine. (Last was March 2018)

- Panel participated in two articles for magazine addressing cyber and avionics that were led by the Avionics Systems Panel.
  - R. Sabatini, A. Roy, E. Blasch, K. A. Kramer, G. Fasano, I. Majid, O. G. Crespillo, D. A. Brown and R. Ogan, **"Avionics Systems Panel Research and Innovation Perspectives."** IEEE Aerospace and Electronic Systems Magazine, Vol. 35, Issue 12, pp. 58-72, December 2020. DOI: 10.1109/MAES.2020.3033475
  - I. Majid, R. Sabatini, K. A. Kramer, E. Blasch, G. Fasano, G. Andrews, C. Camargo and A. Roy, **"Restructuring Avionics Engineering Curricula to Meet Contemporary Requirements and Future Challenges."** IEEE Aerospace and Electronic Systems Magazine, Vol. 36, No. 4, pp. 46-58, April 2021. DOI: 10.1109/MAES.2020.3043138

Panel Membership and Involvement

- - Point of contact: Joe Dauncey - Chief Information Security Officer for the UK National Air Traffic Services
- Kramer (Chair) and 16 others, including these 6 (1 BoG, 2 DASC TPCs, 2 ICCST chairs) and submitters to special issue from conference.

  Membership is "open" – this allows interested members, particularly conference track and tutorial leaders in niche to be involved but also brings "volunteers" whose interest is self- and center- promotion and provides little organizing support.
- Chairs of both DASC and ICCST are involved in the panel
- Three AESS DLs on this and the Avionics panel.

Glue Technologies for Space Systems (GlueTech)

Accomplishments & Activities

Claudio Sacchi

GlueTech Panel Chair

April 2021

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Goals of the GlueTech Panel

- Promote the coordination of the technical activities related to the technologies that constitute the necessary common platform for innovative Space Systems;
- Promote and support publications concerning the panel topics;
- Organize panels and special sessions in featured-topic conferences;
- Promote educational activities;
- Encourage the submission of nominations for IEEE Fellows and Senior Members in the fields of interest of the panel;
- Manage the nomination and selection of candidates for IEEE Awards in the fields of interest of the panel;
- Creation of communities and forums cooperating in the development of panel technical activities.

Accomplishments and Activities

- Some **papers** have been published on IEEE international conferences with the acknowledgment to the GlueTech panel. Here they comes the titles:
  - S. Bonafini, C. Sacchi, "3D Ray-tracing Analysis of Radio Propagation on Mars Surface," **IEEE Aerospace Conference 2021**, March 6-13, 2021 (remote conference).
  - S. Bonafini, C. Bianchi, F. Granelli, C. Sacchi, "A Reconfigurable Multi-Modal SDR Transceiver forCubeSats," **IEEE Aerospace Conference 2021**, March 6-13, 2021 (remote conference).
- Other **papers** have been submitted and under review:
  - S. Bonafini, C. Sacchi, "Design of a 3D Ray Tracing Model Based on DEM for Comprehension of Large- and Small-Scale Propagation Phenomena over the Martian Surface," **submitted to: International Journal of Satellite Communications and Networking** on February 25, 2021 (under review, 1st review round)
  - M. Centenaro, C. Costa, F. Granelli, C. Sacchi and L. Vangelista, "A Survey on Technologies, Standards and Open Challenges in Satellite IoT", **submitted to: IEEE Communications Surveys and Tutorials** on December 23, 2020, accepted with minor revision, (2nd review round).

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Accomplishments and Activities

- Another paper is planned to be submitted in late Spring-Early Summer 2021:
  - C. Sacchi, F. Granelli, A. Gentili, L.S. Ronga, S. Morosi, Y. Le Moullec and C. Schlegel, "Software Radio for All: A Survey of Open-Source Software-Defined Radio Platforms", to be **submitted to: IEEE Communications Surveys and Tutorials** (a previous version was submitted on July 3, 2020: it was rejected leaving open to the authors the resubmission option).

- A **special section** of **IEEE Transactions on Aerospace and Electronic Systems** has been organized about the panel topics. Title*: Information and Communication Technologies (ICT) for a New Space Vision* (organizers: C. Sacchi, F. Granelli, M. Marchese, K-M. Cheung, M. Noble). Important dates:
  - Opening submission date: October 1, 2021
  - Manuscript submission due: October 29, 2021
  - First review round concluded on: January 17, 2022.
  - Revised manuscript submission due: March 24, 2022.
  - Second review round concluded on: May 3, 2022.
  - Final manuscript due: May 30, 2022.

Accomplishments and Activities

- Organization of the **Plenary Session 4A**: "Non-Terrestrial Network -Backhaul (Workshop)", **Wireless World Research forum on Hyperconnectivity**, Kuala Lumpur (MAL), 18-21 January 2021 (virtual conference).

- **Talk** by Walt Downing (panel member) at **"Explorando Futuro 202X"** (initiative organized by IEEE Student Branches of Region 9). Title of the talk: "*Spacecraft Avionics and Scientific Instruments"*, April 16, 2021, available at: https://www.youtube.com/channel/UCM7O5ElhNILMtO0eZrJNMPg

- Organization of the Session 4.03: "Glue Technologies for Space Systems" at **IEEE Aerospace Conference 2021** (in virtual modality).

- The **Summer School for PhD students**: **"Frontier Technologies for Future Space 2.0 Communications »** will be organized (in virtual manner) by the panel members C. Sacchi, T. Rossi, M. Marchese and F. Granelli from **6 to 10 September 2021**. Lecture topics and speakers have been fixed; lecture schedule is currently under discussion. The patronage of Italian Space Agency (ASI) and AESS has been asked for this event.

- The "Glue Tech" panel has been **awarded** by IEEE AESS as "Outstanding panel of the year 2020"

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Gyro and Accelerometer Panel (GAP)

Post Fall 2020
Accomplishments & Activities

Randall Curey
GAP Chair

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GAP Purpose

- Promulgate the understanding of components and systems for detection or measurement of linear or angular motion.
- Develop inertial standards with industry consensus.
  - Specification format guides
  - Test procedures
  - Terminology
  - Recommended practices
- Provide periodic revision of the standards developed by the GAP.
  - 14 published standards
  - one under development.

Accomplishments and Activities

- **The GAP held 4 meetings since fall 2020**

Dates	Location	Host	Attendance
16/17 September	Virtual	Webex	12
9/10 November	Virtual	Webex	13
18/19 January	Virtual	Webex	14
8/9 March	Virtual	Webex	12

- **Future GAP meetings**

Dates	Location	Host
May 10/11	Virtual	Webex
July 12/13	Virtual	Webex

Accomplishments and Activities

- The revision of 952, "IEEE Standard for Specifying and Testing Single-Axis Interferometric Fiber Optic Gyros" has been published."
- The ballot for the revision of 1559, "Standard for Inertial Systems Terminology" is in progress.
  - Resolved comments received during the ballot and recirculated.
  - Comments received from recirculation ballot.
- Revision of 1431, "Standard for Specifying and Testing Coriolis Vibratory Gyros" is in progress.
- Development of 1780, "Standard for the Specification of Inertial Measurement Units (IMU)" is complete.
  - Comments received from initial ballot.

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2021 Objectives

- Finish working with editors on revision of 952, “IEEE Standard for Specifying and Testing Single-Axis Interferometric Fiber Optic Gyros” by March
- Re-ballot and submit revision of 1559, “Standard for Inertial Systems Terminology” for publication by March.
- Complete draft of 1431, “Standard for Specifying and Testing Coriolis Vibratory Gyros” revision by the end of the year.
- Ballot and submit 1780, “Standard for the Specification of Inertial Measurement Units (IMUs)” for publication by September.
- Brainstorm elements of a Standard for Specifying an Inertial Navigation System (INS)

Navigation Systems Panel (NSP)

Michael Braasch

Panel Chair

April 2021

Navigation Systems Panel

- Primary panel responsibility is support of the PLANS conference
- U.S. Institute of Navigation (financial sponsor of PLANS) moved the next offering from 2022 to 2023 due to issues related to the pandemic
- Panel met in March 2021 to start the organization of the next PLANS conference
- An ad hoc group has been formed to organize an IEEE navigation conference to be held in conjunction with the International Global Navigation Satellite Systems (IGNSS) symposium in Australia in late 2022

Radar Systems Panel (RSP)

2021 Spring
Accomplishments & Activities

Nathan Goodman

RSP Chair (2021)

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Radar Systems Panel

- Sustain and oversee the program of IEEE Radar Conference series
- Promote and support publications in the field of Radar
- Promote educational activities in the field of Radar
- Provide periodic revision of IEEE Standards pertaining to the domain of Radar
- Encourage the submission of nominations for IEEE Fellows and Senior Members in the field of Radar
- Manage the nomination and selection of candidates for IEEE Awards in the field of Radar

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Accomplishments and Activities

- Successfully coordinated another year of panel awards
  - Prof. Dan Bliss for Warren White for Excellence in Radar Engineering
  - Dr. Alex Charlish for the Fred Nathanson Memorial Radar Award
  - We also note Prof. Simon Haykin selected for the Picard Medal

- Replaced 4 Committee Chair positions vacated due to term limits or role changes
  - Mike Picciolo now chair of the RSP Nominations and Appointments Committee
  - Julie Jackson now chair of the RSP Conferences Committee
  - Graeme Smith now chair of the RSP Civilian Radar Committee
  - Jennifer Palmer now chair of the RSP Awards Committee
  - John Stralka now chair of the RSP Education Committee

- Planning for committees to perform an update on their goals and best practices, especially with respect to any expected long-term impacts of Covid-19 on the ways we operate (some impacts could be beneficial now that we were forced to consider them)

Accomplishments and Activities

- 2021 IEEE Radar Conference originally planned for Atlanta will be virtual. The dates are May 10-14. The venue gave us some difficulty about the contract – we ultimately agreed to reschedule an in-person Atlanta conference for the IEEE International Radar Conference in 2025
  - The "IEEE Radar Summer School" will be held again as a virtual activity held in partnership with the IEEE Radar Conference in 2021
  - Also planning another virtual "Radar Challenge" competition
  - There are several sessions planned on civilian applications (automotive, biomedical) and novel radar science (quantum radar, …)
  - Dr. Bill Melvin is organizing a celebration of the life of Dr. Michael Wicks, long-time contributor and leader in the radar community who made a positive impact on many of our members, but passed away in December

- After completion of 2021 IEEE Radar Conference, I'll be asking the Conferences Committee and recent conference organizers to consider whether/how virtual components can be incorporated into future in-person events – to expand participation without detracting from in-person experience and number of in-person attendees

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