ICNS

Enhancing The Resilience Of Future ICNS

ICNS 2026

The 26th Integrated Communications, Navigation and Surveillance Conference

CONFERENCE PROGRAM

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Welcome to ICNS 2026!

On behalf of the organizing committee of ICNS 2026, we welcome you to the **26th Integrated Communications, Navigation and Surveillance (ICNS) Conference,** held 14–16 April 2026 in Herndon, Virginia. This year's theme, **"Enhancing the Resilience of Future ICNS,"** underscores the growing importance of robust, adaptable, and secure communications, navigation, and surveillance (CNS) capabilities in the complex aviation ecosystems.

Since its beginning as a NASA workshop in 2001, **ICNS has evolved into a premier international aviation forum** where policy discussions, operational experience, and technical innovation come together. Each year, ICNS brings together leaders, operational and technical experts, and researchers from government, industry, and academia to address challenges and to discuss future directions of CNS. Today's aviation is at a key turning point, facing a convergence of aging infrastructure, growing air traffic demand, and the integration of new entrants, with growing expectations for safety, efficiency, and sustainability. In this context, resilience has become a must-have requirement for future CNS.

We welcome our esteemed keynote speakers, starting with Mr. David S. Burkholder, Acting Executive Director, Office of International Affairs, Federal Aviation Administration, U.S. Department of Transportation. Tuesday's keynote will be followed by two plenary sessions, the first dedicated to "Current Datalink/DataComm and Future Communication Technologies", and the second to "GNSS Spoofing and Jamming - Potential Mitigations." On Tuesday evening, Greg Bowles, Chief Policy Officer, Joby Aviation will be our guest speaker.

On Wednesday morning, Dr. Jim Hileman, Chief Engineer and Vice President of Sustainability and Future Mobility, The Boeing Company, will deliver the Day 2 keynote. Two plenary sessions will follow, "Pilots' and Controllers' Perspectives on Surveillance Resilience", and "Trajectory-based Operations (TBO)."

On Thursday, Mr. Loftur Jónasson, Chief, CNS and Spectrum (CNSS), Air Navigation Bureau, International Civil Aviation Organization, will deliver the Day 3 keynote. It will be followed by a plenary on "CNS Standardization Efforts", and an interactive workshop on "Space Is Open for Business: Commercial Launch Growth and the Impact on CNS and the Air Traffic System."

Afternoon sessions are organized as **6 technical tracks** and **90 technical presentations**. Participation is global, with authors from North America, South America, Europe, Africa, the Middle East, and the Asia-Pacific region. There is strong engagement from young researchers, including **35 student-authored papers**. Awards will be presented for technical papers: Best of Conference, Best of Track, and Best Student Paper.

Many people contribute to the success of ICNS every year. We thank our keynote speakers, plenary panelists, authors, reviewers, and chairs for sharing their expertise and insights. We are also grateful to our sponsors and supporters, whose continued commitment helps sustain this conference. Finally, we extend our sincere appreciation to the ICNS organizing committee and other volunteers who dedicate their time and energy.

Most importantly, you—the participants—are what make ICNS special. Your engagement, questions, and ideas are what transform a conference into a true exchange of knowledge and perspectives. ICNS has always been a place in which conversations continue beyond the meeting rooms—during breaks, meals, and evening events - often sparking collaborations and new ideas that shape future work across our community. We encourage you to make the most of these three days: listen, question, connect, and share your experiences. We hope you go home with a renewed sense of purpose for advancing resilient CNS capabilities.

We look forward to an engaging, productive, and memorable conference together.

Sherry Yang *Rainer Koelle*

Sherry Yang and Dr. Rainer Kölle
ICNS 2026 Conference General Co-Chairs

Conference General Co-Chairs

Sherry Yang, The Boeing Company

Sherry Yang is senior manager of Airspace Operational Efficiency (AOE) at Boeing Research & Technology (BR&T). She is responsible for executing AOE's missions and collaborating with government agencies and industry partners for advanced technology development in the areas of trajectory-based operations (TBO), artificial intelligence and machine learning (AI/ML), air traffic management (ATM), and advanced air mobility (AAM). Working across technologies and businesses, Yang facilitates public and private partnerships to develop and evaluate new technologies and operation concepts for the aviation ecosystem. She is an associate fellow of American Institute of Aeronautics and Astronautics (AIAA), a technical advisor to the ICC AIA Member of the ICAO Information Management Panel, and a member of AIA, ATCA, and CANSO.

Dr. Rainer Kölle, EUROCONTROL

Rainer Kölle serves as senior principal expert in the Operational Performance Review Service with EUROCONTROL, Aviation Transformation Directorate, Brussels. Prior to joining EUROCONTROL in 2005, he served as a career officer in the German Air Force with 18 years of service experience. His professional career saw him working as aviator, air traffic controller, and in the wider field of air traffic management. Rainer represents EUROCONTROL in standardization activities and performance related R&D projects and policy working groups (e.g., ICAO's performance expert group, multi-national performance benchmarking group). His research interests apply data science to operational air transport and air navigation performance and promoting higher levels of transparency using open data for operational performance measurement. Rainer holds a Master of Science in electrical engineering (communication systems) from the University of the German Federal Armed Forces, Hamburg, 1994, and a doctorate from Lancaster University, United Kingdom, 2013.

Plenary Program Co-chairs

Cristian Pradera, SESAR Deployment Manager

Cristian Pradera is an aeronautical engineer specialized in rocket engines, graduated in the Polytechnic University of Madrid in 2008. He started his professional career as a consultant in ENAIRE, working for 5 years in the Planning and Strategy division, where he contributed to the development of ENAIRE's business plan and to the elaboration of the European ATM Master Plan under the SJU. He then joined EUROCONTROL for 3 years, working in the ATM Master Plan Unit and then he moved to the SESAR Deployment Manager in 2017, where he became the planning manager, in charge of the planning activities related to the implementation of the Common Projects, DataLink Services and ADS-B Out.

Dr. Gabriele Enea, MIT Lincoln Library

Gabriele Enea is an assistant group leader in the Air Traffic Control and Weather Systems Group at MIT Lincoln Laboratory. The group develops advanced technologies to enhance the safety and efficiency of air transportation.

Before joining MIT Lincoln Laboratory, Enea worked at the Center for Advanced Aviation System Development at the MITRE Corporation and in industry with Engility Corp. He earned bachelor's and master's degrees in aeronautical engineering and a doctorate in transportation engineering from the University of Palermo in Italy. He also earned a master's degree in transportation engineering from Virginia Tech. Enea is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and chair of the AIAA Aircraft Operations Technical Committee.

Technical Program Chairs

Heer Patel, U.S. DOT Volpe Center

Heer Patel is an operations research analyst in the Aviation Facilities and Business Services Division at the U.S. Department of Transportation's Volpe National Transportation Systems Center. She specializes in aviation infrastructure and works closely with the Federal Aviation Administration's Terminal Facilities Program Office to provide subject matter expertise and conduct technical analyses supporting the replacement or modernization of FAA Airport Traffic Control Tower (ATCT) and Terminal Radar Approach Control (TRACON) facilities across the United States. A certified Project Management Professional (PMP) and contracting officer's representative (COR), she also manages projects and provides acquisition oversight for cross-cutting FAA initiatives. Patel co-chairs the Volpe Center Artificial Intelligence Coordination Team. Convened by Volpe Center leadership, the team coordinates AI-related initiatives, fosters collaboration, and advances innovation across the center. She holds dual bachelor's degrees in mechanical engineering and applied mathematics from the University of Massachusetts Amherst and a master's degree in mechanical engineering from Pennsylvania State University.

Paul Prisaznuk, ARINC (Retired)

Paul Prisaznuk is an aviation professional that has served ARINC, EUROCAE, RTCA, and ICAO in various technical capacities for over 35 years. Most recently Paul served as the head of standards development at ARINC. In that role Paul led the development of over 250 technical standards used in the design and construction of commercial air transport, large military aircraft, and other aircraft. These include many air/ground standards applied to communications, navigation, and surveillance (CNS) systems.

Paul is a contributing author to the CRC Press publication, *Digital Avionics Handbook*. His contributions describe the ARINC 429, Digital Information Transfer System, and the ARINC 653, Avionics Application Software Standard Interface. Paul holds a bachelor's degree in electronic engineering from the University of Dayton.

Workshop Chair

Dr. Lance Sherry, George Mason University

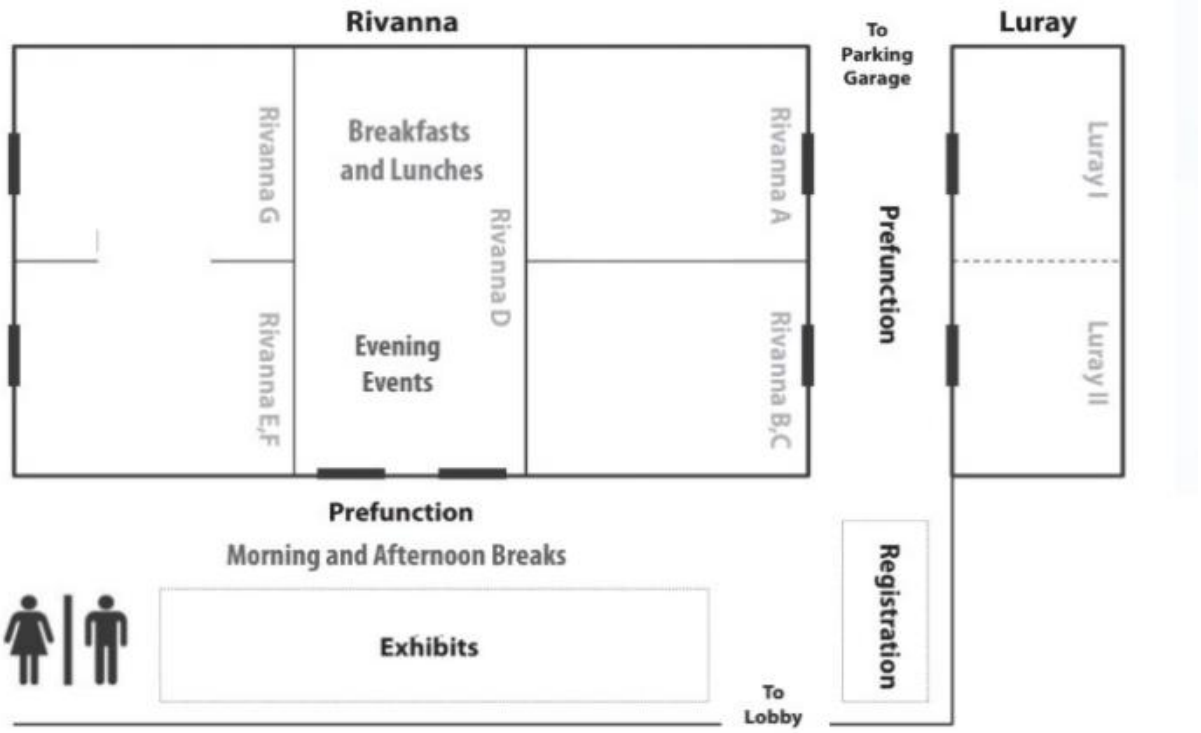
Lance Sherry is a professor of systems engineering and operations research at George Mason University and serves as director of the Center for Air Transportation Research. He has more than 30 years of experience in the aviation industry, where he has worked as a flight-test engineer, flight control engineer, systems engineer, lead systems architect, program manager, and in strategic planning and business development. He was a fellow at the RAND Corporation from 1999 to 2001. He has published more than 100 papers and journal articles, holds several patents, and has received awards for his work.

Gold Sponsor

ICNS 2026 Agenda Overview

Time (EDT)	Tuesday, 14 April	Wednesday, 15 April	Thursday, 16 April
7:00 – 8:30	**Morning Social and Breakfast** **Registration Check-in: Pre-function Area** **Breakfast: Rivanna D** **Pre-program Messages**		
8:30 – 9:00	**Conference Welcome and Introductions** **Ms. Sherry Yang and Dr. Rainer Kölle, Conference General Co-chairs** **8:30 – 8:40** **Rivanna ABC** **Plenary Program** **Co-chairs: Cristian Pradera and Dr. Gabriele Enea**		
	Opening Keynote **8:40 – 9:00** **Mr. David S. Burkholder**, Acting Executive Director, Office of International Affairs, Federal Aviation Administration, U.S. Department of Transportation	**Day 2 Keynote** **8:40 – 9:00** **Dr. Jim Hileman**, Chief Engineer and Vice President of Sustainability and Future Mobility, The Boeing Company	**Day 3 Keynote** **8:40 – 9:00** **Mr. Loftur Jónasson**, Chief, CNS and Spectrum (CNSS), Air Navigation Bureau, International Civil Aviation Organization
9:00 – 12:00	**Plenary I:** **Current Datalink/DataComm Metrics and Future Communication Technologies** **9:00 – 10:15** **Moderator** Chip Meserole, Boeing **Panelists** Luc Emberger, Airbus Greg Saccone, Boeing Andrea Berti, Frequentis Jerry Hancock, Viasat Corinne Lefebvre, SITA	**Plenary III:** **Pilots' and Controllers' Perspectives on Surveillance Resilience** **9:00 – 10:15** **Moderator** Greg Orrell, MITRE **Panelists** Capt. Paul Harrison, Alaska Airlines Nicki Harricharan, CANSO Capt. Edward Conant, United Airlines Josh Haviland, NATCA	**Plenary V:** **CNS Standardization Efforts** **9:00 – 10:15** **Moderator** Loftur Jónasson, ICAO **Panelists** Mahesh Balakrishna, RTCA Mark Watson, EUROCAE Dr. Wes Olson, MIT Lincoln Laboratory Paul Prisaznuk, ARINC (Retired) Kim Kolb, Boeing
	Networking and Coffee Break 10:15 – 10:35 Pre-function Area	**Networking and Coffee Break** 10:15 – 10:35 Pre-function Area	**Networking and Coffee Break** 10:15 – 10:35 Pre-function Area
	Plenary II: **GNSS Spoofing and Jamming — Potential Mitigations** **10:35 – 11:50** **Moderator** James Sherman, AIAA **Panelists** Lisa Bee, Viasat Dr. Michael Garcia, Aireon, LLC Chris Baur, Hughes Aerospace Corporation Tim Murphy, Boeing	**Plenary IV:** **Trajectory-Based Operations (TBO)** **10:35 – 11:50** **Moderator** Dr. Gabriele Enea, MIT Lincoln Laboratory **Panelists** Tobias Finck, German Aerospace Center (DLR) Dr. Stéphane Mondoloni, MITRE Sherry Yang, Boeing Will Estrada, Leidos Phillippe Masson, Airbus	**Workshop:** **Space Is Open for Business: Commercial Launch Growth and the Impact on CNS and the Air Traffic System** **10:35 – 11:35** **Moderator** Dr. Lance Sherry, George Mason University **Panelists** Stephen Marley, Aerospace Corporation Zheng Tao, AirSpace Innovation Dr. Chaowei Yang, George Mason University
	Sponsorship Appreciation **11:55 – 12:00**	**ICNS Championship Awards** **11:50– 12:00**	**Best Paper Awards** **11:35 – 12:00** Awards Ceremony, Dr. Gabriele Enea, MIT Lincoln Laboratory

12:00 – 13:00	**Networking and Lunch** **12:00 – 13:00** **Rivanna D**		
13:00- 17:00	**Technical Program** **13:00 – 17:00** **Co-chairs: Ms. Heer Patel and Mr. Paul Prisaznuk** **Networking and Coffee Break** **15:10 – 15:30** **Pre-function Area**		
17:30	**Evening Program**		
	Sponsors and Exhibitors Reception **17:30 – 18:00** **Rivanna D** **Evening Keynote** **18:00 – 18:30** **Greg Bowles,** Chief Policy Officer, Joby Aviation	**Evening Networking Event** **17:30 – 20:00** **Rivanna D**	



NASA's Glenn Research Center is located next to Cleveland Hopkins Airport in Northeast Ohio, where the first successful demonstration of two-way VHF (very high frequency) radio communication for air traffic control took place in 1930, marking a significant milestone in aviation communication. Building on this legacy, Glenn Research Center established the ICNS Conference in 2001 to provide a forum for national and international discussion and collaboration on developing a future integrated, highly efficient, capable, and secure CNS infrastructure for both the nation and the world, while also informing NASA's aeronautical CNS R&D program.

NASA Glenn has conducted research and development in aeronautical communications, navigation, surveillance and information technologies for the national airspace system (NAS) for more than 20 years, building on more than 40 years of experience in advanced communications systems research and development: The Emmy award-winning Communications Technology Satellite, CTS (1976), the Advanced Communications Technology Satellite, ACTS (1993- 2003), technologies for space missions and infrastructure such as the Cassini mission, TDRSS, and International Space Station, and many others.

The aeronautical communications accomplishments includes: the demonstration of the first networked broadband airborne satellite communications; development, testing, and demonstration of the Aeronautical Mobile Airport Communications System (AeroMACS) airport surface wireless communications network; next generation network protocol standards for secure mobile networks; satellite-based distribution of aviation weather information; spectrum allocations for future ground and air-mobile aviation communications; and future global aviation communications.

Under the EUROCONTROL/FAA Future Communications Study, NASA Glenn collaborated in the development of the next-generation mobile communications network architecture for aviation; developed advanced CNS simulation capabilities for NASA's Shadow Mode Assessment using Realistic Technologies for the National Airspace System (SMART NAS) project; and led the development and testing of the first prototype L-Band/C-Band UAS control and non-payload communications radio.

NASA's Glenn Research Center continues to look towards the future and is currently investigating modern air-ground communication solutions for advanced air mobility. It is also engaged in the research and development of future air-to-air communications to enable future airspace operations. The center continues to expand its capabilities and commitment through the acquisition of new aircraft assets and expanding laboratory facilities to meet existing and future CNS challenges.

Glenn has unique research facilities enabling development and testing of next-generation secure wireless aeronautical mobile communications and network standards and extensive modeling and simulation, and system analysis capabilities covering all aspects of communications, navigation, surveillance, and information. A staff of over 30 experienced CNS research engineers is engaged in the development of the nation's next-generation CNS infrastructure, in collaboration with government, academic and industrial partners.

www.nasa.gov/glenn

ICNS 2026 Day 1 Overview – Tuesday, 14 April 2026

Opening Keynote

Mr. David S. Burkholder, Acting Executive Director, Office of International Affairs, Federal Aviation Administration, U.S. Department of Transportation

Mr. David S. Burkholder serves as the Acting Executive Director for the Office of International Affairs at the Federal Aviation Administration (FAA), where he advises agency leadership on international policy, global engagement, and strategic priorities supporting U.S. aviation initiatives worldwide. He leads coordination efforts with international organizations, government agencies, and aviation stakeholders to advance U.S. aviation policies, technologies, and safety standards globally. In addition to overseeing the FAA's International Strategy, he chairs the agency's International Governance Board and International Steering Committee, guiding its global leadership and engagement efforts. Previously, Mr. Burkholder held senior leadership roles within the FAA's Air Traffic Organization, where he managed enterprise resources, budgets, and operational support services, and played a key role in organizational development and strategic alignment. Earlier in his career, he led international initiatives across multiple regions, helping shape global air traffic management improvements. He holds a Bachelor of Business Administration in International Business and Spanish from James Madison University.

Plenary I: Current Datalink/DataComm Metrics and Future Communication Technologies

Moderator

Chip Meserole, Boeing

Dr. Chip Meserole manages the Airspace Operational Efficiency team in Boeing Technology Innovation. The team's responsibility is to advance new capabilities in air traffic management and airline flight efficiency services that enhance system safety, capacity, efficiency, and sustainability globally. Its emphasis is on airline fleet efficiency, emissions reduction for aviation sustainability, and integrating autonomous aircraft into the airspace. This group executes the company's contracts with the FAA, NASA, and SESAR in this domain; creates flight services capabilities for Boeing Global Services Digital Services division; and conducts R&D in air-ground integration and trajectory-based operations. It has activities in Seattle, Washington, D.C., Spain, Brazil, India, Australia and China. He joined Boeing in 1984 and worked on space system and launch vehicle development before moving into its air traffic management initiative in 2001. He is an associate fellow of the American Institute of Aeronautics and Astronautics. He has a bachelor's degree from Princeton University, a master's from Cornell University, and a Ph.D. from MIT, in aerospace and mechanical engineering.

Plenary I: Panelists

Luc Emberger, Airbus

Luc Emberger was appointed communication and surveillance senior expert in 2019 after more than 20 years working on data link project with Airbus. In this function, he contributes to air/ ground communications roadmaps and connectivity strategy at aircraft level. He also contributes to R&T activities to mature the future ATM concepts and pave the way to a more connected aircraft. Among his main responsibilities, he represents Airbus in several Standardization bodies (AEEC, RTCA, EUROCAE), as chairman for EUROCAE WG-78 on air traffic services and AEEC ATN/IPS. He contributes to frequency and spectrum topics coordination across all Airbus divisions. Prior to assuming this position, he served as data link communication expert, and as communication equipment's development leader at the Airbus design office, and he certified the first Airbus data link system flying in Europe.

Greg Saccone, Boeing

Greg Saccone is an experienced aviation professional with more than 30 years of expertise in aeronautical data link communications. At Boeing, he works within the Airspace Operational Efficiency group, focusing on advanced air traffic management concepts, research, operational trials, and implementation, with a specialization in data link communications and flight data processing. He serves as Boeing's focal for Internet Protocol Suite initiatives, leading both internal and industry-collaborative projects, and is the co-chair of the Airlines Electronic Engineering Committee's Internet Protocol Suite for Aviation Safety Services group. Greg has also been actively involved in international and industry standards development through leadership roles with the ICAO Aeronautical Communications Panel and RTCA SC-214 NextGen Data Link group. Prior to Boeing, he was the Technical Director of data link research and development at Raytheon Canada, where he led efforts to integrate data link applications into air traffic control systems and contributed to key Aeronautical Telecommunications Network standards. He holds an honors degree in electrical engineering and is the inventor on several patents related to aeronautical communications and air traffic management innovations.

Andrea Berti, Frequentis

Started my careen in 1998 as Digital Signal Processing engineer, working of ATC ground radio development, implementing DSP firmware for AM voice, VDLm2, VDLm3 and VDLm4. Later responsible for the system design, requirements and interop and qualification testing with avionics and CSPs of the Multimode Ground Station (VDLm2 and POA) developed by Leonardo for ENAV. In Frequentis, I have been for a few years Development Project Manager for the ED137 VoIP Gateways, before moving back to Datalink as Programme Manager in my market Unit for all the Future Communication Infrastructure Projects (SESAR, ESA Iris), which is my current daily business.

Plenary I: Panelists (continued)

Jerry Hancock, Viasat

Jerry Hancock is a forward-thinking cybersecurity and aviation safety leader with more than 30 years of experience spanning both regulatory and commercial sectors. As Director of Aviation Safety Solutions and Cybersecurity at Viasat, he leads the development and execution of next-generation security strategies that protect critical aviation systems across ground networks and air-to-ground connectivity. Known for his innovative leadership, strong technical expertise, and ability to align cross-organizational stakeholders, Mr. Hancock is a recognized advocate for cybersecurity across global aviation forums and corporate environments. Prior to joining Viasat, he spent 15 years at the Federal Aviation Administration, where he contributed to operations, planning, and NextGen initiatives, gaining valuable insight into the regulatory landscape. At Viasat, he plays a key role in advancing secure, data-driven, and risk-based approaches to aviation connectivity, balancing cybersecurity priorities with safety and operational performance while leading high-performing teams to proactively detect and respond to emerging threats.

Corinne Lefebvre, SITA

Corinne Lefebvre is senior Datalink Expert at SITA For Aircraft, Engineering & Technology, Compliance, Regulatory & Datalink Innovation team. After a decade in the technical customer support group, she has returned to the fields of performance and innovation: one foot in the Current Datalink service and the second in the Future Datalink Infrastructure. She is responsible for the continuous improvement of end-to-end performance and participates in EUROCAE, RTCA, ICAO and AEEC working groups as well as in SESAR projects related to ATN/OSI and ACARS services. She is involved in SITA's initiatives aimed at enhancing the capabilities and performance of the air-ground network and developing the next-generation solution to handle the ever-increasing volume of safety and operational data traffic.
She holds a postgraduate degree in aerospace engineering and an advanced master's degree in space telecommunications. She has a private pilot's license (currently expired).

Plenary II: GNSS Spoofing and Jamming — Potential Mitigations

Moderator

James Sherman, AIAA

Mr. James Sherman has over 30 years of expertise in developing technology for aerospace, automotive, military, and consumer products.
Jim joined AIAA in August 2022 as the Institute's Senior Director for Aeronautics. He is also responsible for executing the aerospace domain development vision.
Previously, Jim acted as the Vertical Flight Society's Director of Strategic Development, where he led over 100 virtual events, and authored 20+ technical articles. He has spoken at the CES, Aviation Week, HAI, SAE, ACI, and many other events. Prior to VFS, Jim held a similar role at SAE International. Mr. Sherman has a BSEE from Penn State, an MSEE, and an MBA from Binghamton University.

Plenary II: Panelists

Lisa Bee, Viasat

Lisa Bee brings over 30 years in air traffic management to her role as Viasat's Director of Air Traffic Services. Her background includes more than two decades at the US FAA, focusing on various aspects of air traffic safety management, including as an operational controller. Since joining Viasat in 2016, she has led the development of satellite-based communication and navigation services, collaborating closely with service providers, regulatory authorities, and industry groups.

Ms. Bee is a member of the ICAO Operational Data Link Working Group and an advisor on the ICAO RPASP C2 Work Group and the ICAO SASP. She also Co-Chairs of the CANSO CNS Work Group.

Plenary II: Panelists (continued)

Dr. Michael Garcia, Aireon, LLC

Michael Garcia, PhD, is the Chief Innovation Scientist at Aireon LLC, where he leads strategy and innovation for space-based ADS-B and VHF systems, as well as system architecture and industry engagement. He collaborates with Air Navigation Service Providers and contributes to global standards through organizations such as RTCA, EUROCAE, International Telecommunication Union, and National Academy of Sciences. Previously, he was an Associate Principal Engineer at L3Harris Technologies (formerly ITT/Exelis), supporting FAA ADS-B and WAM programs. He holds a PhD in Electrical Engineering from Duke University and a Bachelor's in Computer Engineering from George Mason University, where he also serves as an Adjunct Professor.

Chris Baur, Hughes Aerospace Corporation

Chris is the CEO of a leading global Air Navigation Services Provider, Industry Co-Chairman of the US Helicopter Safety Team, and a member of the Vertical Aviation International Board of Directors. A pioneer in Performance Based Navigation, he brings over 45 years of aviation experience as a dual-rated Airline Transport Pilot with 13 type ratings across airliners, business, rotary-wing aircraft, and UAS, and is also an FAA-certified instructor, dispatcher, and evaluation pilot. A retired military aviator, he is uniquely qualified across the U.S. Army, Coast Guard, and Air Force, with missions spanning search and rescue, special operations, and law enforcement—including a record-setting oceanic rescue. He is a recipient of the Federal Law Enforcement Officers Association Medal of Valor, a Fellow of the Royal Aeronautical Society, and holds degrees from Embry-Riddle Aeronautical University and Brown University / IE Business School.

Tim Murphy, Boeing

Tim has more than 40 years of experience in the field of radio communication, navigation and surveillance (CNS) systems for civil aviation. He works on CNS and spectrum issues related to Air Traffic Management across all Boeing products. His current focus is on new avionics developments and development of standards for emerging technologies.

Sponsors and Exhibitors Reception

Evening Keynote

17:30 - 19:30

Rivanna D

Greg Bowles, Joby Aviation Chief Policy Officer

Greg brings over two decades of aviation regulation and policy experience to Joby Aviation as Chief Policy Officer. His career spans nearly every aspect of aviation, from the advanced design and certification of business jets to championing legislation and regulatory reforms that have paved the way for a new form of daily air mobility. He is a Trustee of the National Aviation Hall of Fame, a Fellow of the Royal Aeronautical Society, and an accomplished commercial airplane and helicopter pilot.

The purpose of the American Institute of Aeronautics and Astronautics Digital Avionics Technical Committee (DATC) is to provide a forum for the exchange of new knowledge in digital avionics among professionals and students in the fields of commercial, military and general aviation and space applications.

The DATC serves the needs and professional interests of AIAA members and promotes through progressive projects and meetings their contributions and achievements in the arts, sciences and technology of aeronautics and astronautics.

The AIAA Digital Avionics Technical Committee cosponsors two technical conferences, the Digital Avionics Systems Conference (DASC) and the Integrated Communication, Navigation and Surveillance (ICNS) Conference.

If you are interested in joining the AIAA DATC, we are always looking for new, motivated members. Please visit our website for contact information:

aiaadatc.org

The Institute of Electrical and Electronics Engineers (IEEE)

The IEEE is the world's largest technical society, bringing members access to the industry's most essential technical information, networking opportunities, career development tools, and many other exclusive benefits. Through its global membership, the IEEE is a leading authority on areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics among others.

To foster an interest in the engineering profession, the IEEE also serves student members in colleges and universities around the world. Other important constituencies include prospective members and organizations that purchase IEEE products and participate in conferences or other IEEE programs.

Aerospace & Electronics Systems Society (AESS)

AESS is one of 45 technical societies and councils within IEEE. Members of AESS are interested in the design, integration, test, and analysis of large, complex systems consisting of major subsystems that contain dissimilar electronic devices. Most of our members work on sensor systems (radar, sonar, optics, and navigation), communications systems, command and control centers, avionics, space systems, military systems, digital signal processing simulators, and software development. Some members work on robotics, energy, and transportation systems.

AESS is the only professional society addressing total integrated electronic systems and the enabling technologies. AESS pioneered large-scale integrated interoperable systems. AESS is the sponsor/cosponsor of 15 conferences a year including ICNS.

The AESS is proud to be a sponsor of the ICNS Conference with our partner the DATC. Besides the ICNS Conference, we also partner on the Digital Avionics Systems Conference (DASC) and look forward to the long-term growth of the ICNS Conference.

ICNS 2026 Day 2 Overview – Wednesday, 15 April 2026

Opening Keynote

Dr. Jim Hileman, Chief Engineer and Vice President of Sustainability and Future Mobility, The Boeing Company

Dr. James Hileman is the Vice President and Chief Engineer of Sustainability at Boeing, where he leads technology development in efficiency, energy, and operations to advance safe and sustainable global air transportation. His work includes initiatives in advanced aircraft design, alternative aviation energy sources, operational improvements, and the development of analytical tools such as Cascade. Prior to joining Boeing, he served as the Federal Aviation Administration's Chief Scientific and Technical Advisor for Environment and Energy, overseeing the agency's research portfolio, including programs such as CLEEN, ASCENT, and CAAFI. Dr. Hileman has also played a key role in international aviation policy through leadership positions within the International Civil Aviation Organization's Committee on Aviation Environmental Protection, contributing to global standards for noise, emissions, and carbon reduction. Earlier in his career, he was a Principal Research Engineer at MIT, where he focused on alternative fuels and innovative aircraft concepts, and contributed to major initiatives such as PARTNER and the Silent Aircraft Initiative. He holds a B.S., M.S., and Ph.D. in Mechanical Engineering from The Ohio State University and is an Associate Fellow of the American Institute of Aeronautics and Astronautics.

Plenary III: Pilots' and Controllers' Perspectives on Surveillance Resilience

Moderator

Greg Orrell, MITRE

Greg has been working at The MITRE Corporation for 16 years focused on surveillance systems and applications. Greg has a Master's in Human Factors and Systems Engineering from Embry-Riddle Aeronautical University. He has worked on surveillance and unmanned aircraft systems (UAS) systems, services, and applications across the Federal Aviation Administration, Department of Homeland Security, and Department of War. Most recently he has supported the FAA in their planning of the Surveillance Architecture Evolution Plan, focused on surveillance resilience, and in the prioritization of radar modernization actions as part of the Brand New Air Traffic Control System (BNATCS), as well as leading the concept maturation of the Aircraft-to-Everything (A2X) Surveillance Link for UAS and Advanced Air Mobility (AAM) for FAA. Additionally, he has recently supported the development robust cybersecurity profiles and overlays for civil and public UAS in the United States.

Plenary III: Panelists

Capt. Paul Harrison, Alaska Airlines

Capt. Paul Harrison has been a military and airline pilot for 40 years. He has been a Technical Pilot specializing in Surveillance and Data Comm for the last 15 years. He regularly participates in various industry CNS groups such as the PARC Nav and Comm Working Groups as well as the Data Comm Implementation Team. He notably participated in SC-186 WG-4 where operational requirements were written for ADS-B In. One of his crowning achievements was participating in the planning of and then flying in the successful FAA Sponsored Paired Approach demonstration in SFO in 2017. That demonstration showed how ADS-B In could be used to solve the chronic weather-related delays that occur in SFO.

Nicki Harricharan, CANSO

Nicki joined CANSO in 2024, bringing with her 16 years of FAA experience. She began her career as an Air Traffic Controller at the Washington DC ACC, then progressed to Front-Line Manager at New York ACC. She later served as a National Traffic Management Specialist at the FAA Command Center's Severe Weather Unit, where she managed traffic flow during severe weather events, presidential movements, and rocket launches.

Most recently, she led the Central Altitude Reservation Function (CARF) Unit and Space Operations team, integrating rocket launches into the National Airspace System and handling altitude reservations for military and civilian purposes.

Capt. Edward Conant, United Airlines

A seasoned aviation and defense professional with over 30 years of experience, this individual has served as a senior leader, operational fighter pilot, experimental test pilot, and project manager across organizations ranging from small teams to large-scale enterprises. Currently a Flight Test Operations Captain for United Airlines, they have flown the Boeing 777, 737, and Airbus A320, bringing extensive expertise in flight operations and testing. Their program management experience was developed during active-duty military service, including key roles within the F-35 Program Office and U.S. Air Force acquisition staff. They hold a Project Management Professional (PMP) certification and Level III certifications in Program Management and Test and Evaluation from the Defense Acquisition University.

Plenary III: Panelists (continued)

Josh Haviland, NATCA

Josh Haviland is an experienced Air Traffic Controller from Seattle, WA, with over 25 years of expertise. He began his career as an Air Traffic Controller in the United States Navy before transitioning to the FAA Contract Tower Program. Josh holds an FAA Commercial Pilot's license and is a Certified Flight Instructor for Instrument Airplane (CFII). He is also a recipient of the National Air Traffic Controllers Association (NATCA) Archie League Medal of Safety Award. Josh has held several key leadership roles throughout his career. As the Performance Based Navigation (PBN) Co-Lead for the FAA's Western Service Area, he applied extensive technical expertise and facilitated workgroups focused on designing Instrument Flight Procedures (IFP). He later served as the National Co-Lead for the Metroplex program until its conclusion in 2022. Currently, Josh represents NATCA as the National Airspace Representative, where he leads collaboration with the FAA on both strategic and technical initiatives, including the FAA's Airspace Modernization Roadmap, Established on Required Navigation Performance (EoR), and Multiple Airport Route Separation (MARS).

Dan Hicok, NAV Canada

Dan is an experienced air traffic management professional with over 25 years in systems engineering, program management, and technical leadership across both industry and the Federal Government. He currently serves as Acting Vice President for the PMO, following prior leadership roles including Director of Strategy in Mission Support and Director of Surveillance Services, where he launched the directorate in 2019 and oversaw all surveillance acquisition and sustainment programs for radar systems and Surveillance and Broadcast Services. Previously, as Chief Systems Engineer for the FAA's Air Traffic Systems directorate, he advised leadership and ensured alignment of NextGen technologies with enterprise architecture and acquisition programs. Earlier in his career, Dan led systems engineering efforts for key FAA initiatives such as Airport Surveillance Radar Model 11, Runway Status Lights, SBS Interval Management, and Terminal Sequencing and Spacing. He holds a B.S. in Aerospace Engineering and an M.S. in Electrical Engineering from Virginia Tech and is a member of several professional organizations, including ATCA, AIAA, INCOSE, and the FAA Managers Association.

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Frequentis, a trusted leader in safety-critical communications and air traffic management (ATM) solutions, has a mission: to make the world safer through innovative technology. The company has over 75 years of experience supporting air navigation service providers (ANSPs) and aviation stakeholders around the world. Frequentis' solutions emphasize seamless integration, digital transformation, and operational resilience, delivering technology that ensures airspace remains **Digital, Sustainable, and Safe.**

At the forefront of Frequentis' offerings is **OneATM**, a visionary approach designed to address the complex needs of modern ATM environments by uniting the latest technology into a single, open ATM ecosystem. This integrated approach simplifies operations, enhances performance, and provides a flexible foundation to support current and future demands in air traffic management.

Exhibitor

Aireon

Aireon pioneered the first global air traffic surveillance system using a space-based Automatic Dependent Surveillance-Broadcast (ADS-B), meeting the stringent real-time Air Traffic Service (ATS) requirements. The company continues to innovate by leveraging its high-quality data to develop new products for the aviation industry to improve efficiency, enhance safety and reduce emissions.

Founded in 2011, Aireon's service leverages space-qualified ADS-B receivers installed in the 66 satellites of Iridium NEXT, Iridium's second-generation satellite network. This pioneering system meets the stringent real-time Air Traffic Service (ATS) requirements and provides global coverage, ensuring comprehensive surveillance capabilities anywhere in the world. By harnessing high-quality data, Aireon continues to innovate, developing new products to enhance the aviation industry's performance and safety.

ICNS 2026 Day 2 Overview – Wednesday, 15 April 2026

Networking and Coffee Break

Plenary IV: Trajectory-Based Operations (TBO)

Moderator

Dr. Gabriele Enea, MIT Lincoln Library

Gabriele Enea is an assistant group leader in the Air Traffic Control and Weather Systems Group at MIT Lincoln Laboratory. The group develops advanced technologies to enhance the safety and efficiency of air transportation.

Before joining MIT Lincoln Laboratory, Enea worked at the Center for Advanced Aviation System Development at the MITRE Corporation and in industry with Engility Corp. He earned bachelor's and master's degrees in aeronautical engineering and a doctorate in transportation engineering from the University of Palermo in Italy. He also earned a master's degree in transportation engineering from Virginia Tech. Enea is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and chair of the AIAA Aircraft Operations Technical Committee.

Plenary IV: Panelists

Tobias Finck, German Aerospace Center (DLR)

Tobias Finck holds a master's degree in Aeronautics and Astronautics from the Technical University of Berlin. Since 2016, he has been a researcher at the German Aerospace Center's Institution of Flight Guidance, where he developed and validated a Flight Centric ATC concept for the Hungarian airspace under SESAR2020, serving as deputy Solution Lead, Exercise Lead and Document Lead of several documents (e.g. Validation Plan and Report). His current work focuses on an ECAC-wide Flight Centric ATC concept. Since June 2023, he leads the FCA project within the SESAR3 Programme, and since September 2024, he also serves as Business Manager at DLR.

Dr. Stéphane Mondoloni, MITRE

Dr. Stéphane Mondoloni is Director of the Transportation Evolution and Engineering Division at the MITRE Corporation, where he leads efforts to modernize Communications, Navigation, Surveillance, and Automation systems toward an information-centric vision of the National Airspace System. With over 20 years of experience in Air Traffic Management research, he has authored more than 50 technical publications and focuses on simulation, optimization, and operational performance improvement. He has spent over 15 years advising ICAO expert groups on advanced ATM concepts such as Trajectory-Based Operations (TBO) and FF-ICE, and has collaborated globally to advance these concepts from development through real-world demonstrations. He holds a Ph.D. in Aeronautical Engineering from MIT and an MBA from IESE Business School, and is a Fellow of the Royal Aeronautical Society and an Associate Fellow of the American Institute for Aeronautics and Astronautics.

Plenary IV: Panelists (continued)

Sherry Yang, The Boeing Company

Sherry Yang is senior manager of Airspace Operational Efficiency (AOE) at Boeing Research & Technology (BR&T). She is responsible for executing AOE's missions and collaborating with government agencies and industry partners for advanced technology development in the areas of trajectory-based operations (TBO), artificial intelligence and machine learning (AI/ML), air traffic management (ATM), and advanced air mobility (AAM). Working across technologies and businesses, Yang facilitates public and private partnerships to develop and evaluate new technologies and operation concepts for the aviation ecosystem. She is an associate fellow of American Institute of Aeronautics and Astronautics (AIAA), a technical advisor to the ICC AIA Member of the ICAO Information Management Panel, and a member of AIA, ATCA, and CANSO.

Will Estrada, Leidos

Will Estrada is Senior Director and ATM Product Manager at Leidos, bringing more than 35 years of experience advancing air traffic management (ATM) capabilities across the global aviation community. He offers deep operational and technical insight into the challenges, trade-offs, and opportunities Air Navigation Service Providers (ANSPs) face as they transition legacy systems to meet evolving demands. At Leidos, Will leads the evolution of the SkyLine™ ATM product suite, working closely with ANSP partners to modernize capabilities through collaboration and long-term partnerships. His approach emphasizes flexible, future-ready solutions that balance innovation, resilience, and sustainable growth. Prior to joining Leidos, Will held senior leadership roles at NAV CANADA, where he helped deliver innovations including internet flight planning, SATVOICE, and Space-Based ADS-B, earning a Bronze Medal from the UK's Royal Aeronautical Society.

Philippe Mason, Airbus

Philippe is an ATM programme manager at Airbus, optimizing flight operations and supporting the introduction of aircraft solutions and innovations into operations. Philippe has an ATM background, having worked in program lead and technical director positions for military and civil ATM system developments for over twenty years. He has been especially engaged in Datalink capabilities deployment, 4D trajectory management, ATM Conflict detection and resolution, UTM/U-Space definition, and sustainability through formation flying and non-CO2 operational mitigations, including enabling weather services. Philippe builds large consortiums and alignments, especially within the SESAR program.

ICNS 2026 Day 3 Overview – Thursday, 16 April 2026

Opening Keynote and Plenary V Moderator

Mr. Loftur Jónasson, Chief, CNS and Spectrum (CNSS), Air Navigation Bureau, International Civil Aviation Organization

Mr. Loftur Jonasson currently holds the position of Chief – Communications, Navigation and Surveillance, and, additionally, Acting Chief – Global Information Systems, at the International Civil Aviation Organization (ICAO). Since joining ICAO in 2007, major responsibilities include Standards and Recommended Practices for aeronautical CNS systems, and aeronautical frequency spectrum management, as well as being the focal point for ICAO and aeronautical interests at the ITU World Radiocommunication Conferences and related international and regional WRC preparatory meetings. Secretary of the Aeronautical Communications Panel (ACP) 2007 – 2013. Secretary of the Frequency Spectrum Management Panel (FSMP) 2013 – 2024. Prior to joining ICAO, 15 years of experience with various aeronautical radio- and telecommunication engineering tasks and projects, mainly in support of air/ground and ground/ground voice and data communications and surveillance applications in the North Atlantic region. Since 1996 an active member of the Aeronautical Communications Panel, including being the Rapporteur of two of its longstanding working groups.

Plenary V: CNS Standardization Efforts

Panelists

Mahesh Balakrishna, RTCA

Mahesh Balakrishna joined RTCA in 2025 and oversees committees developing standards in various areas including navigation performance, uncrewed aircraft systems integration, data communications, and aeronautical data. His work also includes close collaboration with international organizations to establish technically equivalent international aviation standards. Prior to joining RTCA, Mahesh worked for over 20 years on National Airspace System (NAS) modernization activities supporting the Federal Aviation Administration (FAA). He holds a bachelor's in electrical engineering, a master's in systems engineering, and is a licensed pilot.

Plenary V: Panelists (continued)

Mark Watson, EUROCAE

Mark Watson joined the EUROCAE Secretariat in May 2023.
After 8 years working in the telecommunications industry, Mark joined the aeronautical domain in 1996 to validate the draft ICAO ATN Upper Layer SARPs. He then gained substantial experience with air traffic management operational concepts through real-time simulation environments. Mark has supported the ramp-up and execution of SESAR 1 and SESAR2020 programmes. At EUROCAE, Mark is responsible for standardisation activities covering for Air Traffic Management, spectrum and space-based systems.

Dr. Wes Olson, MIT Lincoln Laboratory

Dr. Wesley A. Olson is the Leader of the Transportation Safety and Resilience Group at MIT Lincoln Laboratory. The group develops decision support architectures and technologies to enhance safety and resilience of the future transportation system. These technologies
improve aviation safety and facilitate integration of new airspace entrants. Dr Olson has participated in RTCA and ICAO standards development related to collision avoidance and detect and avoid systems for almost 20 years.

Prior to Lincoln Laboratory, Dr. Olson served for 22 years in the US Air Force and is a rated pilot with 3,500 flight hours and holds an FAA Air Transport Pilot rating. He has PhD and MS degrees from University of Illinois, and a BS from the United States Air Force
Academy.

Paul Prisaznuk, ARINC (Retired)

Paul Prisaznuk is an aviation professional that has served ARINC, EUROCAE, RTCA, and ICAO in various technical capacities for over 35 years. Most recently Paul served as the head of standards development at ARINC. In that role Paul led the development of over 250 technical standards used in the design and construction of commercial air transport, large military aircraft, and other aircraft. These include many air/ground standards applied to communications, navigation, and surveillance (CNS) systems.

Paul is a contributing author to the CRC Press publication, *Digital Avionics Handbook*. His contributions describe the ARINC 429, Digital Information Transfer System, and the ARINC 653, Avionics Application Software Standard Interface. Paul holds a bachelor's degree in electronic engineering from the University of Dayton.

Plenary V: Panelists (continued)

Kim Kolb, Boeing

Kim Kolb is an aerospace engineer and Technical Fellow with The Boeing Company, in Boeing's Global Spectrum Management organization. Mr. Kolb is an experienced radio frequency spectrum management engineer representing Boeing in venues such as the ITU, ICAO, and RTCA and EUROCAE. His experience has focused on aviation, RADAR, space, science and remote sensing issues. He has chaired many drafting group activities at the ITU developing several ITU-R Recommendations and Reports, in addition to leading several working groups in RTCA/EUROCAE joint committees. Mr. Kolb currently is on the leadership committees of RTCA SC-239/EUROCAE WG-119 (Radio Altimeter) and RTCA SC-242/EUROCAE WG-124 (Spectrum Management). He serves as the ICCAIA panel member for the ICAO Frequency Spectrum Management Panel.

Workshop - Space is Open for Business: Commercial Launch Growth and the Impact on CNS and the Air Traffic System

Commercial space launches have grown rapidly in recent years, with more frequent and varied missions, from satellite deployments to space tourism. This growth is creating an urgent need for air traffic system engineers to understand the evolving aerospace environment. This workshop will examine how increasing numbers of suborbital and orbital flights intersect with traditional aviation systems and what that means for communications, navigation, and surveillance (CNS) in the National Airspace System (NAS). It will also explore how launch and reentry trajectories affect radar coverage, position reporting, collision-avoidance protocols, and existing CNS infrastructure.

Moderator

Dr. Lance Sherry, George Mason University

Lance Sherry is a professor of systems engineering and operations research at George Mason University and serves as director of the Center for Air Transportation Research. He has more than 30 years of experience in the aviation industry, where he has worked as a flight-test engineer, flight control engineer, systems engineer, lead systems architect, program manager, and in strategic planning and business development. He was a fellow at the RAND Corporation from 1999 to 2001. He has published more than 100 papers and journal articles, holds several patents, and has received awards for his work.

Workshop Panelists

Stephen Marley, Aerospace Corporation

A FEAF-certified Enterprise Architect (2004), he has specialized in complex scientific data and information systems supporting environmental observation science and ground system operations. With nearly 30 years of experience in developing environmental satellite ground systems for scientific applications, he has successfully led and contributed to the design of major international programs, including the European Space Agency's European Remote Sensing (ERS) series, NASA's Earth Observing System (EOS) series, the U.S. Geological Survey's Landsat 7 mission, and NOAA's Geostationary Operational Environmental Satellite R Series (GOES-R).

Zheng Tao, AirSpace Innovation

Zheng is the Co-Founder and President of AirSpace Innovation, where he provides executive leadership across strategy, engineering, operations, and business development for an engineering firm focused on advancing commercial space launch and reentry, higher airspace operations, low-altitude operations, and Air Traffic Management (ATM) modernization. With a strong foundation in technical leadership, executive management, and strategic planning, he drives initiatives that enhance operational efficiency and support the integration of emerging aviation domains, including Advanced Air Mobility and commercial space operations. He has a proven track record of delivering customer-focused solutions and building strategic partnerships across government, industry, and academia, with an emphasis on measurable outcomes such as modernizing traffic flow management, enabling new entrants into the airspace, and advancing digital transformation through AI/ML and cloud-based technologies. His expertise spans systems engineering, airspace integration, modeling and simulation, and the application of data analytics to complex aviation challenges, alongside deep domain knowledge in ATM infrastructure, space launch and reentry regulations, and next-generation airspace operations.

Dr. Chaowei Yang, George Mason University

Dr. Chaowei "Phil" Yang is a Professor of Geographic Information Science at George Mason University and the founding Director of the NSF Spatiotemporal Innovation Center, a major collaborative initiative involving institutions such as Harvard and UCSB. He earned his BSc and MSc in Physics from Northeastern University and his PhD from Peking University, and completed postdoctoral research at the University of Calgary. His research focuses on leveraging spatiotemporal principles to optimize computing infrastructure for scientific discovery and engineering innovation, supported by over $40 million in research funding, more than 300 publications, and the mentorship of over 30 faculty members placed in the U.S. and internationally. Dr. Yang has also held prominent leadership roles, including President of CPGIS and co-founding chair of AAG CISG, and has received numerous national and international honors, including the Environmental Protection Stewardship Award presented by President Obama.

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L3Harris Technologies is a Trusted Disruptor for the global aerospace and defense industry. With customers' mission-critical needs always in mind, our 46,000 employees deliver end-to-end technology solutions connecting the space, air, land, sea, and cyber domains.

L3Harris plays a critical role in air traffic management through enterprise managed services and surveillance technologies for aircraft monitoring, providing solutions to make flight more safe, secure and efficient.

We provide safety critical, highly available and highly secure managed infrastructure services and solutions to deliver mission-critical communications, surveillance, and enterprise information management capabilities for aviation, defense, and security customers.

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MITRE

MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through public-private partnerships, as well as the operation of federally funded R&D centers, we work across government to tackle challenges to the safety, stability, and well-being of our nation.

MITRE operates the Center for Advanced Aviation System Development, which has supported the FAA for more than 60 years. In addition, MITRE provides technical expertise to various international civil aviation authorities, airport operators, airlines, and other aviation organizations in air traffic management systems engineering, aviation operations, airspace design, and systems automation and integration.

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Technical Session Track Overview

Track 1. Traffic Management (ATM)	
Co-chairs: Bernd Korn, DLR Germany Greg Saccone, The Boeing Company	Track 1 will focus on emerging developments in airspace utilization and air traffic management. Topics include advanced concepts for federated, resilient, high integrity ATM systems capable of evolutionary growth of air traffic. Airport departure management, arrival management, ground movement, and taxi operations will be presented and discussed with emphasis on resilience and environmental sustainability.
Track 2. Operational Efficiency and Special Topics	
Co-chairs: Laura Bickmeier, MIT Lincoln Laboratory Justin Oberman, Airspace Data	Track 2 will focus on evolutionary airspace improvements in the air and on the ground. Topics include trajectory-based operations and emerging CNS applications yielding operational efficiencies. Joint civil-military airspace utilization, UAS integration, and safety implications will be presented and discussed.
Track 3. Artificial Intelligence/Machine Learning	
Co-chairs: Christoph Schuetz, Johannes Kepler Univ. Linz Eduard Gringiner, Frequentis	Track 3 will focus on the possibilities for AI-driven optimization and support to aid decision-making for all types of operations. Topics may include air traffic efficiency and air traffic management using predictive analytics and traffic modelling. The application of AI/ML to aviation communication networks and the use of AI/ML techniques for navigation and surveillance will be presented and discussed.
Track 4. Communications and Security	
Co-chairs: David Robinson, FAA (Retired) Kelly Curran, U.S. DOT/Volpe Center	Track 4 will focus on data and voice communication resilience. Topics include controller pilot data link communication (CPDLC), L-band digital aeronautical communication system (LDACS), and the assessment of cybersecurity risk in aviation infrastructure. Future communication architectures and techniques will be discussed for air transport and for advanced air mobility. Cybersecurity modelling, intrusion detection and resilience, and GNSS spoofing will be presented and discussed.
Track 5. Navigation, Surveillance, and Special Topics	
Co-chairs: Anton Conte, U.S. DOT/Volpe Center Mark Cockburn, U.S. DOT/Volpe Center	Track 5 will focus on new and emerging navigation and surveillance infrastructure. Topics include GNSS resiliency, advancements in accuracy and integrity, the use of multilateration for improved positioning, and the application of machine learning to estimate aircraft position. Navigation and surveillance concepts will be presented and discussed.
Track 6. Special Topics	
Co-chairs: Billy Josefsson, space2ground Samet Ayhan, Boeing Technology Innovation	Track 6 will focus on unmanned aircraft systems (UAS), current developments and challenges of introducing UAS into established airspace, and the evolution of UAS traffic management. Topics include fleet management, mission planning, airspace and associated airspace management. Safety assurance, security, and the use of artificial intelligence for advanced air mobility, will be presented and discussed.

Time	Description	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
1310	Track Name	Air Traffic Management	Operational Efficiency	Artificial Intelligence/ Machine Learning	Communications and Cybersecurity	Navigation and Surveillance	UAS / UTM / AAM
	Session Name	Automation in ATM	Safety and Resilience	Trajectory Prediction	Securing ADS-B Surveillance	Navigation Resilience	(no presentations)
	Chair(s)	Juergen Teutsch, NLR Netherlands	Lance Sherry, George Mason University	Christoph Schuetz, Johannes Kepler University Linz	Mike Olive, Verticle Squared	Brian Jaury, Boeing	
	Room	Rivanna BC	Rivanna EF	Luray	Rivanna A	Rivanna G	
1310	Paper Title	Benchmarking Large Language Models for Automated Real-Time Air Traffic Communications Understanding	Fine-Tuning Variational Autoencoders to Generate Synthetic Flight Tracks for Collision Risk Analysis of New Arrival Procedures	Comparative Analysis of Time-Series and Non-Time-Series Deep Learning Models for UAV Trajectory Prediction Under Remote ID Packet Loss	Enhancing ADS-B Resiliency Against Spoofing	Standardization for Ensuring Resiliency Against GNSS Disruption	(no presentation)
	Speaker	Ronald Ankner, MIT Lincoln Laboratory	Shahab Aref, George Mason University USA	Rania Amin, University of North Dakota USA	Tony Boci, L3Harris	Mark Watson, EUROCAE	
1340	Paper Title	Improving Verification Practices for Complex ATC Systems Through Development of Specialized Automation Frameworks	Balancing Robustness and Fidelity in Synthetic Flight Tracks Generated via Gaussian Process Methods for Collision Risk Modeling	Maintaining UAV Surveillance During Remote ID Signal Loss Using Predictive Trajectory Modeling	Authentication feature for ADS-B using overlaid phase modulation	Anti-Spoofing: Let GNSS Provide Escort for Civil Aviation Flights	(no presentation)
	Speaker	Eric Heitmann, Sunhillo	Oleksandra Snisarevska, George Mason University USA	Tingjun Lei University of North Dakota USA	Daniel Polo Álvarez, Indra Spain	Zhijun Wu, Civil Aviation University of China	
1410	Paper Title	Deep Learning Framework for 4D Trajectory Prediction: From Airport Pairs to Full Flight Paths	Comparison of Trends in Collision Risk for Widely & Closely Spaced Approaches-Case studies of SFO and LAX	Use of Chronos2 foundational model for trajectory prediction	A Physical-Layer Intrusion Detection Framework for ADS-B Using Differential Constellation Trace	Infill radars for wind turbine clutter mitigation: Developments and Issues	(no presentation)
	Speaker	Álvaro Quintanar Pascual, Indra Spain	Fahimeh Ghorbani, George Mason University USA	Boris Veytsman, L3Harris	Mustafa Evcil, ASELSAN Turkey	David Mazel, Regulus Group	
1440	Paper Title	Applying Artificial Intelligence in Air Traffic Management Systems	Demonstrating Rare-Event Simulation Approaches for Efficient Calculation of Collision Risk	Impact of GNSS Signal Loss on UAV Trajectory Prediction with Multi-Modal Deep Learning Models	Ethical and Cybersecurity Implications of AI in ADS-B Systems: A Gap Analysis and Responsible Solutions	A Low SWaP Radar Framework for Aircraft Protection in Airport Ground Environments	(no presentation)
	Speaker	Faisal Ateeq, Saudi Air Navigation Services	John Shortle, George Mason University USA	Issam Boukabou, University of North Dakota USA	Antione Searcy, University of the District of Columbia	Giancarmine Fasano, UNINA Italy	
1510	Break						
1530	Session Name	Advanced ATM Concepts	Flight Track Optimization	Predictive Modeling and Anomaly Detection	Future CNS Infrastructure and Datalinks	Surveillance Infrastructure	(no presentations)
	Chair(s)	Tobias Finck, DLR Germany	Edward DeMello, The Boeing Company	Anuja Verma, L3 Harris	Nathan Lackey, The Boeing Company	Ali Bowens, DOT Volpe	
	Room	Rivanna BC	Rivanna EF	Luray	Rivanna A	Rivanna G	
1530	Paper Title	Smart Sector Grouping for Increased Flexibility of Air Traffic Controller Validations	A Predictive Services Architecture for Efficient Airspace Operations	Machine Learning Based Anomaly Detection on ARINC-429 Data Bus: A Simulation-Based Approach	Interoperable LDACS Reference Implementation and Demonstration Deployment	Optimization of Fault Tolerant Ground-based Radar Networks for AAM Airspace Surveillance	(no presentation)
	Speaker	Billy Josefsson, space2ground / Tatiana Polishchuk, LIU	Samet Ayhan, The Boeing Company	Musa Oğural, Hacettepe University Turkey	Josef Meser, Frequentis	Giancarmine Fasano, UNINA Leonardo Milone, UNINA Italy	
1600	Paper Title	Strategic Flight Route Prediction for Air Traffic Management Using Transformers	Randomized Gaussian Process for Synthetic Flight Track Generation	Agentic AI for Near Real-Time Anomaly Detection and Explainable Monitoring in a Multi-Source Surveillance System	LDACS Network Planning and Interference-Aware Resource Management for European Continental Coverage	Enhancing Resilient Inertial Heading Estimation for Planetary Descent Using Kalman Filtering and Long Short-Term Memory Networks	(no presentation)
	Speaker	Kendal Gilbert, Aireon	Jie Xu, George Mason University USA	Jack Dai, L3Harris	Davi Brilhante, Collins Aerospace Ireland	Khushboo Patel, Embry Riddle Aeronautical University USA	
1630	Paper Title	Predicting Air Traffic Controller Workload in a Flight-Centric ATM Concept Using Machine Learning	LAX (Los Angeles International Airport) Multi Runway Dynamic Air Traffic Optimization System Framework	Predicting Terminal Time Using Deep Learning and Interactive LLMs	Protocol-Aware CPDLC Monitoring: Contract Rules, Why-Flags, and Real-Time Anomaly Detection	Aircraft Dynamic Weather Avoidance Based on Maximum Diffusion Reinforcement Learning	(no presentation)
	Speaker	Premysl Volf, Agentfly	Aziz DURMUŞ, 213 Technic Turkey	Marcelo Guterres, Aeronautics Institute of Technology (ITA) Brazil	Cassidy Gorman, Vaughn College of Aeronautics and Technology USA	Yuxin Wang, Biehang University China	
1700	Paper Title	Advancing ATM through Info-centric and Composable Service Architectures	A System Congestion Solution Based on User Side Technology	Real-Time Flight Delay Prediction Using Integrated Machine Learning and Meteorological Intelligence for Enhanced CNS/ATM Operational Decision Support	Strengthening the Capacity and Performance of VHF Datalink Networks in High-Density Airspace	(no presentation)	(no presentation)
	Speaker	Dieter Eier, Frequentis	Matt Blake, Pace/TXT	Abiola Ajala, Morgan State University USA	Corinne Lefebvre, SITA		
1730	End						

Time	Description	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
1310	Track Name	Air Traffic Management	Operational Efficiency	Artificial Intelligence/ Machine Learning	Communications and Cybersecurity	Navigation and Surveillance	UAS / UTM / AAM
	Session Name	UAS Traffic Management	Process Efficiency	NLP and Computer Vision	Scalable Connectivity for UAS and Low-Altitude Operations	(no presentations)	UAS Risk Mitigation and Optimization
	Chair(s)	Joonas Lieb, DLR Germany	Justin Oberman , Airspace Data	Dieter Eier, Frequentis	Kelly Curran, DOT Volpe		Adrian Nomi, University of Michigan
	Room	Rivanna BC	Rivanna EF	Luray	Rivanna A		Rivanna G
1310	Paper Title	Air Traffic Control Intervention Timing Analysis in Support of Uncrewed Aircraft Systems	Automated Civil-Military Airspace Integration for Enhanced Air Defense and Operational Efficiency in the European Theater	Airport Ground Navigation Object Detection Dataset (AGNODD) for Bridging the Granularity Gap in Aviation Ground Movement Mapping	Beyond Visual Line of Sight: Network Capacity and Interference Effects of UAVs in Mobile Networks	(no presentation	UAS In-flight Mission Changes: Exploring the Frontiers of Dynamic Airspace Reconfiguration
	Speaker	Laura Bickmeier, MIT Lincoln Laboratory	Justin Oberman, Airspace Data	Durga Prasad Dhulipudi, The International Institute of Information Technology, India	Allan Tart, Ericsson		Juergen Teutsch, NLR Netherlands
1340	Paper Title	81 GHz UAS Traffic Management via ADS-B	eVTOL Aircraft Energy Consumption Estimation with Conflict Resolution in High-Density Airspaces	High Altitude Icing Condition Identification: A Lightweight Deep Segmentation Framework for Detecting Aircraft Induced Clouds in Ground-Based Sky Photography	Dynamic Frequency Assignment Manager (FAM) for Scalable UAS Command and Control in the C-Band	(no presentation	Achieving American Drone Dominance Through UAS Lifecycle Management and a Drone Marketplace
	Speaker	Bushara Dosa, NASA	Alex Zongo, George The Washington University USA	Lance Sherry, George Mason University USA	Jason Leistman, L3Harris		Vigneshwar Parameshwar, University of North Dakota USA
1410	Paper Title	Integrating UWB-Assisted Micro Drop-Points with UAS Traffic Management for Safe Urban Drone Delivery	Visualization of airspace-specific air traffic controller knowledge in Flight Centric ATC	Generating Realistic Air Traffic Control Voice Communication Using AI-Based Text-to-Speech Models	Direct-to-Device Connectivity for Integrated Communication, Navigation and Surveillance	(no presentation	Integrated CNS Infrastructure Planning for Urban Air Mobility: A Simulation and Stakeholder-Informed Study
	Speaker	Chavisa Sornsakul, Geo-Informatics and Space Technology Development	Tobias Finck, DLR Germany	Dao Vu, The George Washington University USA	Muhammad Ullah, VTT Technical Research Centre of Finland		Faizana Naeem, Institute for Air Transportation Systems Hamburg University of
1440	Paper Title	A Proposed Communication Architecture for Urban Air Mobility	Analysis of the Design of Alternate Checklists for Inspection of an Aircraft K-Loader	Flight Test Results and Validation of Machine Learning Prediction of AAM Path Loss	Security Serves Safety: Low-altitude Intelligent Network (LAIN) Supports Low-altitude Transportation (LAT)	(no presentation	Adaptive UAV Relay Fleet Sizing for Post-Disaster Communication Recovery
	Speaker	Momina Nadeem, Institute of Space Technology Islamabad, Pakistan	Andrew Kirk, George Mason University USA	Frederick Wieland, Mosaic ATM	Zhijun Wu, Civil Aviation University of China		Jimin Choi, University of Michigan USA
1510	Break						
1530	Track Name	Air Traffic Management	Operational Efficiency	Artificial Intelligence/ Machine Learning	Communications and Cybersecurity	Navigation and Surveillance	UAS / UTM / AAM
	Session Name	ATM Architecture	User Collaboration	Predictive AI and Decision Support	System-Wide Cyber Architectures and Data Integrity	(no presentations)	UAS Safety
	Chair(s)	Premysl Volf, AgentFly Technologies	Gabriele Enea , MIT Lincoln Laboratory	Sebastian Gruber, Johannes Kepler University Linz	David Robinson, Independent		Ruth Stilwell, Aerospace Policy Solutions / Nathan Lackey, Boeing
	Room	Rivanna BC	Rivanna EF	Luray	Rivanna A		Rivanna G
1530	Paper Title	Space-based solutions for a more secure, resilient and integrated CNS infrastructure.	Design of a Dashboard for Enroute Traffic Operations Using Open-Source Data	Adaptive AI Routing in LEO Cubesat Networks to Ensuring Integrity and Resilient Backup Link for CNS/APNT Applications	Integrating Zero Trust Architecture to Secure CNS Infrastructure	(no presentation)	Determining Well Clear Separation Standards for sUAS Operations: A Dual-Methodology Approach Using Virtual Reality and Live Flight Testing
	Speaker	Davide Tomassini, European Space Agency	Ashim Thapa, George Mason University USA	Atheer Alharthi, Saudi Air Navigation Services	Almudena Garcia, Indra Spain		Sreejith Vidhyadharan Nair, University of North Dakota USA
1600	Paper Title	Heterogeneous Air-Ground Collaborative Perception for Precise and Efficient Airborne Meteorological Situational Awareness	Towards a Mechanism for Ensuring Equity Over Time Among Airspace Users in Collaborative Flight Prioritization	A Framework to Evaluate How AI Conflict Alerts Affect Controllers' Manual Verification Behaviors	CLOANS Service-Enabled Cybersecurity for Automatic Terminal Information Service (ATIS) Data Reception	(no presentation)	Right-of-Way Compliance in UAV Swarm Networks
	Speaker	Hanjie Xu, Beihang University China	Tobias Harzfeld, Johannes Kepler University Linz Austria	Jean-Paul Stagarescu, George Mason University USA	Lance Sherry, George Mason University USA		Sreejith Vidhyadharan Nair, University of North Dakota USA
1630	Paper Title	Leveraging Ontogenetic AI Models for Enhanced Aviation Safety	Uncertainty Analysis Framework for Fault Tree Quantification: A Data Pedigree-Based Approach	Creating a Digital Twin RL DAA Model to Drone Flight Framework	CONTRAILS: Towards an Observation-Only Control Plane for NAS Data Supply Chains	(no presentation)	Standardized Take-Off and Landing Procedures for Urban Air Mobility Operations Across Diverse Operational Environments
	Speaker	Wayne Smith, L3 Harris	John Shortle, George Mason University USA	Michael Ullrich, University of North Dakota USA	Wen Zhu, NIRA USA		Faizana Naeem, Institute for Air Transportation Systems Hamburg University of Technology Germany
1700	Paper Title	Adressing Aviation Infrastructure Resilience through Functional Resonance Analysis Method and Synergies with Military	Practical Experience in the Application of Image Recognition Systems to Enhance the Safety of Freight Transport	Context-Aware Remote ID Anomaly Detection for UAS Activity Monitoring Using Multi-Agent LLM Reasoning	(no presentation)	(no presentation)	Reserved Airspace for Safe BVLOS Operations
	Speaker	Jorge Pereira, EUROCONTROL	Sviatoslav Stumpf, ITMO University, Russia	Sreejith Vidhyadharan Nair, University of North Dakota USA			Sreejith Vidhyadharan Nair, University of North Dakota USA
1730	END						

Time	Description	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
1310	Track Name	Air Traffic Management	Operational Efficiency	Artificial Intelligence/ Machine Learning	Communications and Cybersecurity	Navigation and Surveillance	UAS / UTM / AAM
	Session Name	(no presentations)	Resilient Communication	(no presentations)	Next-Generation Operations, Cyber Resilience and Recovery	(no presentations)	UAV Services
	Chair(s)		Laura Bickmeier, MIT Lincoln Laboratory		Brandon Nepute, The Boeing Company		Jimin Choi / Serra Dane University of Michigan
	Room		Rivanna EF		Rivanna A		Rivanna G
1310	Paper Title	(no presentation)	Impact of VoIP-Induced Latency on Controller-Pilot Communication Dynamics	(no presentation)	Internet Protocol Suite Very Large Demonstration Project Results Summary	(no presentation)	Impact of Magnetic Fields from Extra-High-Voltage Lines on UAS Brushless Motor Dynamics for Safe Power-Line Inspection
	Speaker		Dieter Eier, Frequentis		Greg Saccone, The Boeing Company		Issam Boukabou, University of North Dakota USA
1340	Paper Title	(no presentation)	Deep Learning-Based Joint Optimization of Movable Antenna Positioning and Beamforming for Satellite Non-Uniform Hotspot Downlink	(no presentation)	Tensor Completion for Data Recovery in Spacebourne Communication Systems	(no presentation)	Parcel delivery with drones and U-space: A case study on air traffic flow, environmental and societal effects
	Speaker		Tian Kening, Beihang University China		Andy Ramlatchan, Old Dominion University USA		Teemu Joonas Lieb, DLR Germany
1410	Paper Title	(no presentation)	Provably Safe Optimization of Arrival Flows into Terminal Airspace	(no presentation)	Detecting gPTP Timing Attacks in Avionic Time-Sensitive Networks	(no presentation)	Optimal Agricultural Drone Deployment and Routing with Weather-Aware Planning
	Speaker		Kuang Sun, University of Michigan USA		Selami Yücel, ASELAN Turkey		Ethan Kolby, University of Michigan USA
1440	Paper Title	(no presentation)	Enhancing ICNS Resilience through Dynamic ATS: An Operational–Technical Perspective for Multi-Center ATM Environments	(no presentation)	Enhancing Future CNS-ATM Resilience Through Pilot-Centric Mitigation of Cyber Deception	(no presentation)	Quantifying Security Induced Overhead in Vision Based UAS Traffic Monitoring Pipelines
	Speaker		Tarek Aljazairy, Saudi Air Navigation Services		Nathan Johnson, Embry Riddle Aeronautical University USA		Fadjimata Issoufou Anaroua, Radu Babiceanu, Embry Riddle Aeronautical
1510	ADJOURN						

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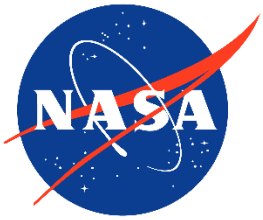

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