Towards a Robust and Sustainable Open-Source Software Ecosystem for Future Wireless Research and Development

Workshop Objective: The goal of this workshop is to examine the open-source software ecosystem that supports future wireless & spectrum R&D, explore the objectives and constraints of the diverse communities that shape the direction of key OSS projects, and identify opportunities to increase collaboration between Federal R&D and OSS communities required to foster and sustain the robust open-source platforms necessary to drive future wireless innovation.

8:00 AM **Check-In**

8:30 AM **Welcome from LSN Co-Chair**
Doug Montgomery (NIST)

8:35 AM **Welcoming Remarks**
Dr. Craig Schlenoff (NITRD)

8:40 AM **Keynote: USG Future Wireless R&D Vision, Requirements, and the Need for OSS**
Dr. Tom Rondeau (DoD)

9:00 AM **Session 1: Customer and sponsor perspectives on OSS requirements for future wireless & spectrum R&D.**
Session objective: To understand and discuss requirements, challenges, and potential of OSS ecosystems from the perspective of customers and sponsors of wireless & spectrum R&D.

Dr. Sudharman K. Jayaweera (NSF) – *MODERATOR*
Tracy van Brakle (AT&T)
Brad Hunt (NTIA Public Wireless Supply Chain Innovation Fund)
Maggie Cogdell (NSA)
Dr. Martin Weiss (DoD)
Dr. Sheryl Genco (Ericsson)

10:15 AM **BREAK**

10:35 AM **Session 2: The current state of the wireless OSS ecosystem**
Session Objective: To understand and discuss the capabilities, development plans, collaboration opportunities, and governance processes associated with open-source software initiatives that are relevant to future wireless research. A particular focus of this session will be to examine the current and potential future involvement of Federal R&D in the evolution of OSS platforms.

Dr. Martin Weiss (DoD) – *MODERATOR*
Mike Woster (Linux Foundation)
Dr. Irfan Ghauri (OpenAirInterface Foundation)
Dr. Paul Sutton (SRS)
Josh Morman (GNU Radio)

11:50 AM **LUNCH**

12:35 PM **Session 3: Emerging security and resilience requirements**

Session Objective: To explore the intersection of open-source software and emerging security and resilience requirements. This session will address the evolving security landscape, highlighting the role of open-source solutions in advancing cybersecurity defenses and the challenges they present.

Maggie Cogdell (NSA) – *MODERATOR*
Mike Loushine (AT&T)
Jorge Laurel (NSA)
Dr. DJ Shyy (MITRE)
Muddasar Ahmad (MITRE)
Dr. David Wheeler (Linux Foundation)

1:40 PM **Session 4: Researcher and experimenter perspectives on leveraging OSS to support wireless & spectrum R&D**

Session Objective: To discuss the specific projects and programs where OSS is being applied to wireless & spectrum R&D, highlighting requirements, constraints, and challenges of OSS ecosystems from the perspective of researchers & experimenters in wireless & spectrum fields.

Dr. Alhussein Abouzeid (NSF) - *MODERATOR*
Dr. Nada Golmie (NIST)
Dr. Kobus Van Der Merwe (University of Utah)
Sam Edwards (INL)
Dr. Johnathan Ashdown (AFRL)
Dr. Aloizio Pereira da Silva (Virginia Tech)

2:55 PM **BREAK**

3:15 PM **Session 5: Increasing transparency and confidence in OSS supply chains**

Session Objective: To examine how the Federal R&D and open-source communities can collaborate to increase transparency and confidence in OSS supply chains and their ability to meet USG requirements.

Doug Montgomery (NIST) - *MODERATOR*
John Cummings (ONCD)
Julie Kub (NTIA ITS)
Dr. Mike Anderson (DoD NIWC Pac)
Dr. Tommaso Melodia (Northeastern University)
Dr. Ian Wong (VIAVI Solutions)
Shankar Venkatraman (Verizon)

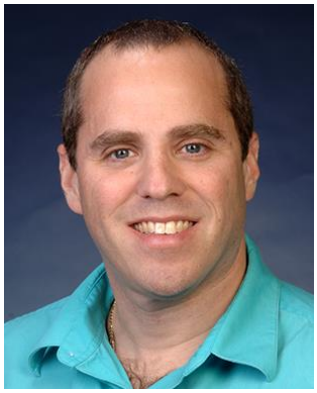
4:20 PM **Concluding remarks and next steps**

Mike DiFrancisco (NTIA)

Speaker Bios

Doug Montgomery
Manager, Internet Technology Research, NIST

Doug Montgomery has led Internet Technologies Research at the National Institute of Standards and Technology (NIST) since 1986. In that role, he provides technical leadership to NIST's current research and standardization efforts in Trustworthy Networks, including internet infrastructure protection, next-generation Internet technologies, zero trust security architectures and technologies, advanced security architectures for next-generation wireless, and measurement, modeling, and analysis of behaviors core network infrastructures.



Dr. Craig Schlenoff
Director of the NITRD Program

Dr. Schlenoff serves as the Director for the NITRD Program. Dr. Schlenoff joins the NITRD NCO from the National Institute of Standards and Technology (NIST), where he served as the Group Leader of the Cognition and Collaboration Systems Group and the Program Manager of the Measurement Science for Manufacturing Robotics Program in the Intelligent Systems Division. He also served as a co-chair for the NITRD Artificial Intelligence Research and Development Interagency Working Group.

While at NIST, Dr. Schlenoff led the Agility Performance of Robotic Systems project and co-led the Embodied AI and Data Generation for Manufacturing Robotics project. He has also led multiple million-dollar projects, dealing with performance evaluation of advanced military technologies and agility performance of manufacturing robotic systems. Previously, Dr. Schlenoff served as the Program Manager for the Process Engineering Program at NIST and the Director of Ontologies at VerticalNet. Dr. Schlenoff is the Associate Vice President for Standardization within the IEEE Robotics and Automation Society and the vice chair of the IEEE Robot Task Representation Working Group.

Dr. Thomas Rondeau
FutureG Principal Director, OUSD(R&E)

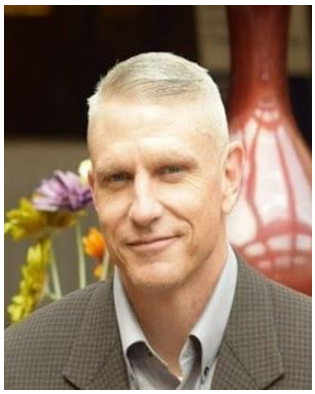
Dr. Tom Rondeau is the Principal Director for the FutureG Office for the US Department of Defense, serving in the Office of the Undersecretary of Defense for Research and Engineering (OUSD(R&E)). In this role, Dr. Rondeau is responsible for the research, funding, and execution of programs to advance warfighting capabilities using future-generation wireless technologies.

Dr. Sudharman K. Jayaweera
Program Director, NSF

Dr. Sudharman K. Jayaweera is a Program Director in the Emerging Technologies section of the Division of Innovation Technology and Ecosystems (ITE) in the Directorate of Technology, Innovation and Partnerships (TIP) at the National Science Foundation (NSF) with primary responsibility for the Advanced Telecommunications and Immersive Technologies. He is on IPA-assignment from the University of New Mexico where he is a tenured Professor in Electrical and Computer Engineering. Dr. Jayaweera is also the Founder and President of Bluecom Systems and Consulting, an R&D startup company in Albuquerque, NM. His research expertise is in wireless/cognitive/cooperative communications, Physical Layer Security (PLS), machine learning (ML), artificial intelligence (AI), dynamic spectrum sharing and coexistence, spectrum and space situational awareness, statistical signal processing and information theory. He received the B.E. degree in Electrical and Electronic Engineering (EEE) with First Class Honors from the University of Melbourne, Australia and obtained his M.A. and PhD degrees in Electrical Engineering (EE) from Princeton University.

Tracy van Brakle
Expert Member Technical Staff, AT&T

Tracy van Brakle is an Expert Member of Technical Staff, AT&T Labs / CTO-RAN, and a co-chair or key contributor within several open-source projects and standards development organizations. At present, she is the Principal Investigator (PI) of the NTIA PWSCIF project “ACCoRD” (Accelerating Compatibility and Commercialization of open RAN for Deployments), and the PI of the NSF/DoD Convergence Accelerator project “INDIGO” (Intelligent Networks Designed and Integrated for Globalized Operations). Within the O-RAN ALLIANCE™, Ms. Van Brakle is the co-chair of the O-RAN ALLIANCE™ Open Source Focus Group and RS-08 next Generation Research Platforms. Her primary area of interest is AI-enabling, integrating, and ultimately commercializing open RAN technologies with open platforms using model-driven interfaces from O-RAN, 3GPP, and other standards organizations. She holds 18 active US patents in Wireless Technologies. Before joining AT&T, Tracy was a Senior Technologist with Goldman Sachs.



Brad Hunt
Technology Lead, NTIA Public Wireless Supply Chain Innovation Fund

Brad Hunt is a 25+ year telecommunications professional with a unique background in engineering, operations, and finance. He has been part of thousands of network builds and is the technology lead for the Innovation Fund. His focus lies in the advancement of technologies to support the Innovation Fund goals of enabling a robust wireless supply chain focused on open networks and interoperability.

Maggie Cogdell
Computer System Researcher, National Security Agency, Laboratory for Advanced Cybersecurity Research

Ms. Maggie Cogdell works for the Laboratory for Advanced Cybersecurity Research at the National Security Agency. She has worked at the Agency for 15 years in a variety of offices and has specialized in topics such as key management, network configuration, and 5G/6G security. Ms. Cogdell is a member of the Linux Foundation's Open Network Automation Platform Security Committee. She is currently focused on network analytics, automation, and cloud security.

Dr. Martin Weiss
Director, Applied Research, OUSD(R&E), FutureG

Dr. Martin Weiss is currently the Director for FutureG Applied Research, and Technical Lead for Resilient and Open Commercial Solutions and Integrated Sensing and Communications within the Office of the Under Secretary of Defense for Research and Engineering. In this capacity, Dr. Weiss oversees multiple efforts to promote FutureG applied research which enable government, academia, and industry to build commercially useful solutions to meet the Department of Defense's wireless communications needs.

Prior to joining the FutureG Office, Dr. Weiss was a Professor in the Department of Informatics and Networked Systems in the School of Computing and Information and is Associate Director of the Center for Governance and Markets at the University of Pittsburgh. He was a founding member of SpectrumX, an NSF-funded Spectrum Innovation Institute. He earned his PhD. in Engineering and Public Policy from Carnegie Mellon University, Master of Science in Engineering in Computer, Control, and Information Engineering from the University of Michigan, and a Bachelor of Science in Engineering in Electrical Engineering from Northeastern University. His research interest is on the governance of technological systems and infrastructures.

Dr. Sheryl Genco
VP Advanced Technology Group, Ericsson

Dr. Sheryl M. Genco is Vice President of Advanced Technology Group within Ericsson's CTO office, is a senior advisor to the Defense Innovation Board, serves as a senior consultant to the DARPA Director's Office, and is an Executive Board member for the National Spectrum Consortium. As an SES for the Department of Commerce (DOC), she was the laboratory director for NTIA's Lab. Prior to joining NTIA, Dr. Genco was the senior engineering director at Honeywell where she led the engineering organization in developing trapped ion quantum computers. She was awarded a DOC Gold Medal and earned a PhD in electrical engineering. Dr. Genco founded a STEM-focused K-8 public school that has won multiple awards. The school has educated more than 20,000 students in over two decades of continuous operation. Dr. Genco was the founder for the Women in Spectrum Scholarship from the NSC.

Mike Woster
Chief Revenue Officer, Linux Foundation

Mike Woster is the Chief Revenue Officer and a Founding Executive Team Member of the $270 million Linux Foundation. The Linux Foundation builds ecosystems around open source projects that span hundreds of thousands of community developers and over 1700 corporate members across all areas of technology. As COO & CRO, Mr. Woster and his team have been the engine for growth and sustainability at The Linux Foundation. Mr. Woster built and operated the Collaborative Projects, Training, and IT services business units, oversaw finance and operations, and hired much of the executive team to scale the business. Notable industry initiatives Mr. Woster helped launch include LF Networking, Nephio, ONAP, LF Edge, Cloud Native Computing Foundation, Open Container Initiative, and hundreds of others. Mr. Woster earned his MBA from Northwestern University's Kellogg Graduate School of Management and graduated cum laude with a B.S. in Computer Science and Honors Engineering from Texas A&M University.

Dr. Irfan Ghauri
Board Member and Secretary, OpenAirInterface Foundation

Irfan Ghauri is Board Member at the newly founded OpenAirInterface (OAI) Foundation, a US based non-profit organization created for supporting the US based community of OAI. He also holds the role of the Director of Operations at the OpenAirInterface Software Alliance and Co-chair of the Open Source Focus Group (OSFG) at the O-RAN Alliance. In these synergistic roles, Irfan sees his potential contribution and that of OAI Foundation in supporting the broader Open RAN industry in enabling technology translation and taking their share of responsibility in the formidable task of workforce development in the cellular wireless industry.

Dr. Paul Sutton
CEO of Software Radio Systems

Paul is co-founder and CEO of Software Radio Systems, the team behind the open-source srsRAN Project. The srsRAN Project provides complete 4G and 5G RAN software stacks, designed for production network deployments. Production deployments of srsRAN include two nationwide air-to-ground networks here in the US for both commercial and federal users featuring a combined total of just under 1000 deployed RAN software stack instances. The srsRAN project is used in research and development by thousands of developers worldwide across government, industry and academia.

Josh Morman
President, GNU Radio

Josh Morman has been deeply involved with the GNU Radio Project for the past decade, serving in various capacities as a user, contributor, maintainer, organizer, and currently as the president. He is currently a Senior Research Scientist with Peraton Labs focusing primarily on leading and developing wireless communication applications for Software-Defined Radio (SDR).

Mike Loushine
Cybersecurity Expert, AT&T Chief Security Office

Mike Loushine is a Cybersecurity Expert in the AT&T Chief Security Office. Mike develops cybersecurity mechanisms and platforms for mobility and enterprise systems. Mike has decades of experience in the communications industry within various engineering and research capacities. Mike currently serves as AT&T delegate to the 3GPP SA3 Security and Privacy Work Group and O-RAN Alliance WG11 Security Work Group. Within these and other standards development organizations Mike works with mobile network operators and vendors to drive security into mobility standards and to establish industry-wide best practices. Mike regularly contributes to industry alliances focused on emerging cybersecurity requirements and US national security solutions for 5G, Next G, and 6G systems.

Jorge Laurel
Chief, Enduring Security Framework (ESF), NSA

Jorge Laurel is the Chief of the National Security Agency (NSA) Enduring Security Framework (ESF) and is responsible for leading multi-lateral, public-private partnership efforts to address risks to critical infrastructure and National Security Systems. He previously served as an ESF Project Director before assuming the role as ESF Chief. Mr. Laurel was an Operations Officer in NSA's Mission Engagement Requirements & Assessments directorate before joining ESF. Prior to joining the NSA, Mr. Laurel was a Senior Cyber Intelligence Strategist with CACI at United States Cyber Command.

Dr. DJ Shyy
Principal 5G Technologist, MITRE

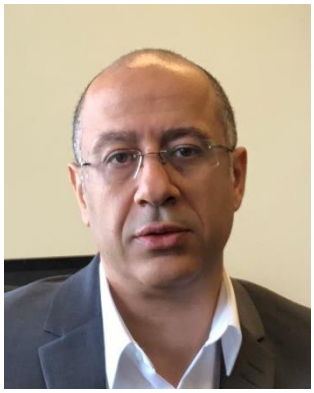
Dr. Shyy is a Principal 5G Technologist at MITRE. He has experience in LTE, 5G, and 6G including cellular communications system design and optimization; TRANSEC; spectrum sharing; 3GPP/O-RAN Alliance standards as well as lab / field performance testing. He is also a 5G technical advisor for Gov sponsors. He was the Principal Investigator for five MITRE Innovation Projects – with his research in 5G including a 6G AI/ML Industry Assessment. Dr. Shyy received his M.S. and Ph.D. degrees in electrical engineering from Georgia Institute of Technology, Atlanta, GA.

Muddasar Ahmad
Principal Architect, MITRE

Muddasar is a Principal Architect at MITRE specializing in architectures and security of Cloud and Modern Networks, including 5G. Muddasar is currently serving LFN Technical Advisory Council as a Vice Chair and engaged in advancing LFN Quality and Security Goals, 5G Super Blueprint, Open Network Automation Platform as well as in LFN AI Task Force. Muddasar is also active in improving the standards, often supports his colleagues on Key Issues/Solutions making into Technical Specs in 3GPP, ORAN Alliance, GSMA, and ETSI. Muddasar is a founding member of team that developed FiGHT, a 5G threat model for Mobile Operations.

Dr. David Wheeler
Director of Open Source Supply Chain Security, Open Source Security Foundation (OpenSSF), The Linux Foundation

Dr. David A. Wheeler is an expert on open source software (OSS) and on developing secure software. He helped develop the 2009 U.S. Department of Defense (DoD) policy on OSS. Dr. Wheeler has a PhD in Information Technology, a Master's in Computer Science, a certificate in Information Security, a certificate in Software Engineering, and a B.S. in Electronics Engineering, all from George Mason University (GMU). He is a Certified Information Systems Security Professional (CISSP) and a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE). He lives in Northern Virginia.



Dr. Alhussein Abouzeid
Program Director, NSF

Dr. Alhussein Abouzeid is a Program Director in the Computer and Network Systems division, Computer and Information Science and Engineering directorate of the U.S. National Science Foundation. He received his Ph.D. and M.S. degrees from University of Washington, Seattle, in 2001 and 1999, respectively, and the B.S. degree from Cairo University, Cairo, Egypt, in 1993, all in electrical engineering. He helped create several NSF national and international research programs. His research is in the area of wireless networking and mobile computing.

Dr. Nada Golmie
NIST Fellow

Nada Golmie (a Fellow of IEEE) received her Ph.D. in computer science from the University of Maryland at College Park in 2002. Since 1993, she has been a research engineer at the National Institute of Standards and Technology (NIST). From 2014 until 2022, she served as the chief for Wireless Networks Division at NIST. She is a NIST Fellow in the Communications Technology Laboratory. Her research in wireless communications systems and protocols, propagation measurement and modeling, next generation wireless, and millimeter-wave communication systems led to over 200 technical papers presented at professional conferences, journals, and contributed to international standard organizations and industry led consortia. She is the author of “Coexistence in Wireless Networks: Challenges and System-level Solutions in the Unlicensed Bands," published by Cambridge University Press (2006). She leads several projects related to the modeling and evaluation of future generation wireless systems and protocols and serves as the chair of the NextG Channel Model Alliance.

Dr. Kobus Van Der Merwe
Professor, University of Utah

Kobus Van der Merwe is the Jay Lepreau Professor in the School of Computing and Director of the Flux Research Group at the University of Utah. He joined the University of Utah in 2012 after fourteen years at AT&T Labs - Research. He does networking systems research in a broad range of areas including mobile and wireless networking, spectrum management, network evolution, network security and cloud computing. He is the PI and Director of the POWDER project (Platform for Open Wireless Data-driven Experimental Research), one of the NSF-funded PAWR platforms. He received the AT&T Science and Technology Medal in 2010, the USENIX Test of Time award in 2015, and the University of Utah Distinguished Research Award in 2022.

Sam Edwards
Senior Project Manager, Idaho National Laboratory (INL) Wireless Test Bed

Sam Edwards is a retired Coast Guard officer and current Project Manager supporting wireless testing at Idaho National Laboratory (INL). With OUSD R&E support and funding, Sam helped INL to deploy the nation's first open-air, 5G wireless test range – a Mavenir end-to-end cellular network - to support advanced security testing, training and technology development. In his previous career, Sam was U.S. Coast Guard's representative to the DHS Joint Wireless Program Management Office (JWPMO). He also helped to deploy two of the Coast Guard's largest-ever IT investments: a nationwide marine-band radio network (Rescue 21), and a shore network for ship to ship messaging called Nationwide Automatic Identification System (NAIS).

Dr. Johnathan Ashdown (AFRL)
Senior Electronics Engineer, AFRL

Dr. Jonathan Ashdown was born in Niskayuna, NY, USA. He received the B.S., M.S., and Ph.D. degrees from Rensselaer Polytechnic Institute, Troy, NY, USA, in 2006, 2008, and 2012, respectively, all in electrical engineering. His Ph.D. dissertation was on a high-rate ultrasonic through-wall communication system using MIMO-OFDM in conjunction with interference mitigation techniques. In 2012, he was a recipient of the Best Unclassified Paper Award at the IEEE Military Communications Conference. From 2012 to 2015, he worked as an electronics engineer with the Department of Defense (DoD), Naval Information Warfare Center Atlantic, Charleston, SC, USA where he was involved in several basic and applied research projects for the U.S. Navy, mainly in the area of software defined radio. In 2015, he transferred within DoD. He is currently a senior electronics engineer with Air Force Research Laboratory, Rome, NY, USA, where he

is involved in the research and development of advanced emerging communications and networking technologies for the U.S. Air Force. He currently serves as the Government Principal Investigator (PI) for the 5G Dynamic Spectrum Sharing effort at Hill AFB and currently serves as PI on the 5G at Playas Research and Training Center (PRTC) under OUSD(R&E)'s FutureG Initiative.

Dr. Aloizio Pereira da Silva
Wireless xG Testbed Director, Commonwealth Cyber Initiative Virginia Tech

Dr. Aloizio Da Silva serve as a CCI xG Testbed director at Commonwealth Cyber Initiative (CCI) and Research Faculty at Electrical and Computer Engineering (ECE) Department at Virginia Tech. Dr. DaSilva currently leads the O-RAN Open Testing Integration Center (OTIC) at Washington DC metro area US. Da Silva's areas of interest include wireless network, O-RAN, spectrum sharing, AI in wireless, edge-cloud computing, network virtualization and 5G and beyond. He also has a background in deep-space communication intersecting with delay and disruption tolerant networks (DTNs) acquired during his PhD thesis and internship at JPL-NASA. Da Silva is also Technical Project Manager for Platforms for Advanced Wireless Research (PAWR) program at US-IGNITE/National Science Foundation (NSF) PAWR PPO where he manages and oversees PAWR testbeds, including AERPAW, POWDER, COSMOS and ARA. DaSilva has large experience on European Horizon projects acquired during his role as 5G portfolio manager and research fellow at University of Bristol UK. Da Silva earned his bachelor of science degree in computer science from the Pontificia Universidade Católica de Minas Gerais, master of science (MSc) in computer science from the Universidade Federal de Minas Gerais (UFMG), master of business administration (MBA) in project management from the Fundação Getúlio Vargas (FGV) and Babson Executive College, and doctorate (Ph.D) in computer engineering from the Instituto Tecnológico de Aeronáutica (ITA).

John Cummings
Director of Data, Privacy, and Digital Economy, The White House, Office of the National Cyber Director

John Cummings serves as the Director of Data, Privacy, and Digital Economy in the Office of the National Cyber Director at the White House. Prior to joining the White House, Cummings served as Associate General Counsel at the Office of the Director of National Intelligence. Before that role, he served as interim Chief Counsel for ODNI's National Counterintelligence and Security Center and as Associate General Counsel for the Office of the Inspector General of the Intelligence Community. He has provided legal advice and counsel on matters of government-wide and interagency policy and national security in the areas of executive authority, cyber, constitutional law, civil rights and civil liberties, legislative affairs, and international cooperation.

Julie Kub
ITS.E Division Chief, NTIA

Julie Kub has worked the National Telecommunications and Information Administration's Institute for Telecommunication Sciences (NTIA/ITS) for 28 years. Ms. Kub been the ITS.E (Software Engineering and Data Science) Division Chief since 2015. She is the Program Leader for the International Open RAN Symposium (IORS). From FY21 to FY24, she served as Program Leader for the 5G Challenge and RIC (RAN Intelligent Controller) Forum. Ms. Kub is asked to speak and provide technical expertise on 5G Open RAN, both nationally and internationally, every few months. Project leaders in Ms. Kub's division are responsible for machine learning clutter development, program/project management process improvement, open data, and boulder labs frequency management for ITS, NOAA, and NIST. Her group develops and maintains the AWS-3 1695-1710 MHz Radio Frequency Coordination Portal (RFCP) to coordinate spectrum sharing and the Propagation Modeling Website (PMW) to enable multiple agencies to achieve their mission-critical communication systems planning. Ms. Kub has a BEE from Carnegie Mellon University (CMU) and an MEE from University of California Los Angeles (UCLA).

Dr. Mike Anderson
Communications Branch Head, DoD NIWC Pacific

Dr. Michael Anderson is the head of the Joint Tactical Communications & Software Defined Radio branch at the Naval Information Warfare Center Pacific. He has an extensive background in the design of wireless communication systems and the use and deployment of military technologies. Dr. Anderson is former enlisted infantry Marine, holds a BS and MS in Electrical Engineering from the University of Michigan, and a PhD in Information Sciences from the Naval Postgraduate School.

Dr. Tommaso Melodia
Professor, Northeastern University

Tommaso Melodia is the William Lincoln Smith Professor with the Department of Electrical and Computer Engineering at Northeastern University in Boston. He received his Laurea (integrated BS and MS) from the University of Rome - La Sapienza and his Ph.D. in Electrical and Computer Engineering from the Georgia Institute of Technology, USA in 2007. He is an IEEE Fellow, an ACM Distinguished Member, and a recipient of the National Science Foundation CAREER award. Prof. Melodia is the Founding Director of the Institute for the Wireless Internet of Things, a research institute, think tank, and technology incubator in the areas of wireless, 5G/6G, networking, IoT, and applications of AI to systems. It counts over 150 researchers, faculty, and PhD students. Prof. Melodia is also the Director of Research for the PAWR Project Office, a $100M public-private partnership building testbeds for advanced wireless research

throughout the United States. Prof. Melodia is the Director of Colosseum, the Open RAN Digital Twin and the world's largest emulator of wireless systems. He received several best paper awards, including at IEEE Infocom 2022. Prof. Melodia is a frequent Keynote Speaker at prime IEEE and ACM events. He is the Editor in Chief for Computer Networks and a co-founder of the 6G Symposium and served as the Technical Program Committee Chair for IEEE Infocom, and General Chair for ACM MobiHoc, among others. Prof. Melodia's research on modeling, optimization, and experimental evaluation of wireless networked systems has been funded by many US government and industry entities, including US National Science Foundation, DARPA, the Office of the Undersecretary of Defense, the Air Force Research Laboratory, NTIA/Department of Commerce, Office of Naval Research, and Army Research Laboratory, among others. His research interests include Open RAN (open, programmable, and virtualized wireless systems), AI for inference and control in wireless systems, infrastructure, and spectrum sharing for wireless systems.

Dr. Ian Wong

Senior Director, RF and Wireless Architecture, CTO Office, VIAVI Solutions

Dr. Ian Wong is Senior Director of RF and Wireless Architecture at the CTO Office in VIAVI, and Chief Architect of the VIAVI Automated Lab-as-a-service for Open RAN (VALOR). He serves on the O-RAN Alliance as co-chair of the Test and Integration Focus Group (TIFG), the founding co-chair of the Next-Generation Research Platforms research stream, and is editor of the End-to-end test specifications. He also sits on the board of the Open Air Interface Software Alliance. He is a senior member of the IEEE and co-authored the books Open RAN: The Definitive Guide and Resource Allocation for Multiuser Multicarrier Wireless Systems.

Shankar Venkatraman

Distinguished Fellow, Global Networks & Technology, Verizon Communications Inc.

Shankar is a Distinguished Fellow at Verizon, within the emerging RAN Technologies group. He is the lead technical architect behind Verizon's Virtualized RAN and Open RAN deployment. Shankar led the development of Open Fronthaul from inception in the xRAN forum and continues to co-chair O-RAN WG4. He also plays an active role in the NTIA funded ACCoRD project in efforts to realize high performance multi-vendor Open Fronthaul at scale. Prior to Verizon, he has worked at RAN OEMs such as Nortel Networks and Powerwave Technologies with over 20 years of experience in design, standardization and deployment of innovative wireless technologies & products.

Mike DiFrancisco

Electronics Engineer/Sr. Technical Advisor, NTIA/Office of Spectrum Management

Mr. DiFrancisco serves as senior technical advisor in NTIA's Office of Spectrum Management. In this role he acts as co-chair of the Wireless Spectrum R&D Interagency Working Group, tracks and monitors advances in spectrum-related technologies, develops plans to establish Dynamic Spectrum Sharing (DSS) capability and supports implementation plans for the National Spectrum Strategy. Mr. DiFrancisco previously served as Chief Engineer at the Virginia Tech Applied Research Corporation (VT-ARC) where he focused on research and testing related to wireless technology. Prior to joining VT-ARC, Mr. DiFrancisco was a Principal in Booz Allen Hamilton's Cyber Technology Center of Excellence focused on developing and managing Cyber Technology-related business with Intelligence Community customers. Earlier in his 25-year Booz Allen career, Mike focused on network & communications systems support to DoD customers, serving as Program Manager and Lead Systems Engineer on several large programs. Mr. DiFrancisco received a B.S. degree in Electrical Engineering from Penn State and a M.S.E.E. (Communications) from George Washington University.