AESS Bangalore Chapter

IEEE SPACE 2026

Space, Aerospace & defenCE Conference

AESS

IEEE SPACE 2026

IEEE SPace, Aerospace and defenCE Conference

July 19–21, 2026

Sheraton Grand Bengaluru Whitefield Hotel &
Convention Center Bengaluru, India

PROGRAM BOOK

MESSAGE FROM GENERAL CHAIR & CO-CHAIRS

It is our distinct privilege to welcome you to the **second edition of the IEEE Space, Aerospace, and Defence (SPACE) Conference**, hosted at the **Sheraton Grand Bengaluru Whitefield Hotel and Convention Centre in Bengaluru, India.**

The core mission of **SPACE 2026** is to provide a premier, interdisciplinary forum where global experts, visionary engineers, and leading researchers can unite to shape the future of aerospace and defence technologies. This conference serves as a vital platform for sharing breakthrough research, exploring disruptive methodologies, and addressing the critical technical challenges faced by global aerospace and defence organizations.

Reflecting the vibrant growth of our field, the conference received **over 900 submissions** this year. Following a rigorous peer-review process, the Technical Programme Committee selected **more than 600 high-quality papers** (an acceptance rate of ~62%). These will be presented across **73 technical sessions** running in **12 parallel tracks**. Complementing these presentations, we have gathered **world-renowned experts** for our Plenary Talks, Invited Lectures, and dynamic panel discussions to share their latest visionary findings.

Complementing the academic tracks, our Industry Exhibition features **over 30 leading companies** showcasing cutting-edge products, services, and commercial technologies. We are also proud to feature 10 curated Special Sessions covering high-impact domains: (1) AI Technologies, (2) Quantum Technologies, (3) Software Defined Radio Technologies, (4) Women-Led Technology Developments, (6) Bharatiya Antriksh Station (7) Next-Generation Radio Astronomy (8) Space Medicine & Biology, (9) Advances in Measurements (10) Advancement in Stealth Technologies for Airborne Applications (11) Efficient AI-Compute for Autonomous Space Missions

These specialized tracks aim to deliver actionable insights into future trends, inspiring participants to design technologies that truly benefit humanity. Ultimately, SPACE 2026 will bring together more than 1,000 delegates to collaborate, debate, and share expertise under one roof.

Driven by a commitment to the next generation, SPACE 2026 introduces 8 path-breaking initiatives for students, young professionals, and startups: (1) Three-Minute Thesis (3MT) Competition (2) Dedicated B.Tech and M.Tech Initiative (3) Startup Pavilion, (4) Up to 50% subsidized registration fees for IEEE and AESS members (5) A 30% Early Submission advantage discount for authors, (6) Highly subsidized workshop registration for AESS Student Members, (7) The Young Faculty Laureate Programme (8) SPACE Ambassador Program.

An event of this scale is only possible through the immense generosity of our corporate sponsors. We extend our deepest gratitude to Emerson NI, RTX, ANSYS (part of Synopsys), Anritsu, R&S, APC Technology & Maury Microwave, CADFEM, ATL, L&T, Apollo Microsystems,

Saraswati Dynamics, Cyronics, Centum, MVG India, FormionIC, COMSOL, Mathworks, Airbus, Astra Microwave Products, Unified, Azista Aerospace, Prolim, JV Micronics, Albatross Projects, TEKKNOW, Paras Defence & Space, SSD Polymers, Western Systems, and MMRFIC.

We also express our profound thanks to our **Chief Patrons, Patrons, General Co-Chairs, TPC Chairs, reviewers, and our dedicated organizing committees.** We are equally grateful to our eminent speakers, as well as our organizational partners: **IEEE AESS, the IEEE Bangalore Section, the IEEE AESS Bangalore Chapter**, and our Academic Partner, **JSS S&TU, Mysuru.**

Finally, we hope you find your time at SPACE 2026 both intellectually stimulating and personally rewarding. We encourage you to immerse yourselves in the technical exchange, forge new partnerships, renew old friendships, and take some time to explore the rich history and culture of Bengaluru—India's beautiful Garden City.

We wish you a productive, inspiring, and comfortable stay!

Puneet Kumar Mishra
2025 VP (Education), IEEE AESS,
General Chair, IEEE SPACE 2026

Dr. K. Rajalakshmi Menon
DS & DG(Aero), DRDO & Director, CABS
General Co-Chair, IEEE SPACE 2026

Dr. Rajeev Jyoti
DS & Director-Technical, IN-SPACe
General Co-Chair, IEEE SPACE 2026

Dr. Seema Chopra
ED & Sr. TF, Boeing India
General Co-Chair, IEEE SPACE 2026

DAY 01 | JULY 20, 2026 (MONDAY)

Time (IST)	Topics
8.00-10.00	Contributory Presentations in 12 Parallel Halls
10.00-10.30	Exhibition Inauguration & Tea/Coffee/Networking
10.30-12.00	**Inaugural Session**
10.30-10.32	**Setting the Context: Master of Ceremony**
10.32-10.37	Welcome Address: **Dr. K. Rajalakshmi Menon**, DS & DG(Aero), DRDO, General Co-Chair, SPACE
10.37-10.40	Lighting the Lamp: **By All Dignitaries**
10.40-10.45	About SPACE: **Mr. Puneet Kumar Mishra,** VP (Education), IEEE AESS & General Chair, SPACE
10.45-10.50	About SPACE Technical Program: **Shri. Rajeev Jyoti**, DS & Director, Technical IN-SPACe, General Co-Chair, SPACE
10.50-10.55	Release of SPACE 2026 **Technical Program booklet & SPACE-YFLP Compendium**
10.55-11.00	Address by 2026-2027 IEEE AESS President: **Dr. Braham Himed**, AFRL
11.00-11.05	Address by 2025 IEEE President: **Prof. Kathleen Kramer**
11.05-11.06	Introduction of Chief Guest **Shri M Sankaran**
11.06-11.16	Satellites to Space Stations: Engineering Global Frontiers in the New Space Era **Shri. M Sankaran**, DS & Director URSC
11.16-11.17	Introduction of Chief Guest **Dr. B K Das**
11.17-11.32	Tactical to Orbital: Scaling Strategic Defence Electronics for Next-Gen Space Hubs **Dr. B K Das**, DG(ECS)
11.32-11.40	**Felicitation of Dignitaries on the Dias**

Time (IST)	Topics
11.40-11.45	Vote of Thanks: **Dr. Seema Chopra**, ED, Boeing India, General Co-Chair, SPACE
11.45-11.50	MoU Signing Between **AESS Gujrat Chapter**, **Bangalore Chapter** and **Dhankesh and Baikoo Edutech Pvt. Ltd.**
11.50-12.00	Buffer Time
12.00-12.30	**Plenary Talk** A Vision for Space, Aerospace and defenCE (SPACE) Technologies towards AtmaNirbhar and Viksit Bharat **Dr. S Somanath,** 2022-2025, Secretary DoS/Chairman ISRO
12.30-13.00	**Plenary Talk** The Confluence of Engineering and National Security: Driving Indigenous Aerospace Innovation **Dr. G Satheesh Reddy**, 2018-2022 Secretary DDR&D & Chairman DRDO
13.00-14.00	Lunch & Networking
14.00-15.00	**Plenary Talks (**Chair: **Debatosh Guha**, University of Calcutta, India) 1. Future Proofing Aerospace Through Platform-Based, Software Defined Systems **Mr. Bhaskar Ceri**, MD NI India 2. Agility Over Advantage: Space, Security, and the Asymmetry Trap **Dr. Aniruddha Mukhopadhyay**, Lead Chief Technologist, Synopsys Inc. 3. Born Digital, Flown Physical **Mr. Savyasachi Srinivas**, VP-GETC. Collins Aerospace
15.00-16.00	**Panel Discussion on** Building Sovereign Capability-Private Sector's Role in India's and Space, Aerospace & Defence Moderator: **Dr. K. Rajalakshmi Menon,** DS & Director General (Aero), DRDO Panellists: **Dr. Arun T Ramchandani,** Senior VP & Head L&T PES, Larsen & Toubro**,** **Dr. Apparao Venkata Mallavarapu,** Founder & CMD Centum Electronics Ltd**, Dr. R Muralidharan,** CTO, TASL**, Shri. A. Anbarasu,** Director General (Acquisition), Ministry of Defence (MoD)**, Mr. Prem Andrade,** Distinguished Engineer, Ansys
16.00-16.30	Tea/Coffee & Networking

Time (IST)	Topics
16.30-17.30	**Panel Discussion on** The New Space Age: Scaling Deep-Tech Innovations Moderator: **Shri. Rajeev Jyoti**, DS & Director Technical, IN-SPACe Panellists: **Mr. Padmesh Mandloi,** Board Member, Indian Chamber of Commerce in Korea (ICCK)**, Mr. Prateep Basu,** CEO, SatSure**,** **Mr. Lokesh Kabdal,** CEO, VyomIC**, Mr. Sunil Indurti,** ED, Asiata BST**, Mr. Srinath Ravichandran,** Co-Founder & CEO, Agnikul**,** **Shri. Sanjeev Kulshreshtha,** DD, ASA, SAC
17:30-18:00	**Fire Side Chat:** The New Space Frontier: Data Centres, Tech Initiatives, and the Power of One IEEE Moderator: **Puneet Kumar Mishra**, GC, IEEE SPACE Panellists: **Prof. Kathleen Kramer**, Immediate Past President, IEEE **Tom Coughlin**, 2024 IEEE President
18.00-18.30	**PS: Lightening Talks:** 1. System Engineering Foresight for Assured Space Situational Awareness and Resilient Space Defence **Mr. Sai Santhosh Manepally,** Director-TE, CADFEM 2. Bridging Lab Testing and Real-world Space using Maury Satellite Link Emulator Solution **Dr. Zacharia Ouardirhi,** Sr. VP(CE), Maury Microwave 3. The New Space Race: Driving India's Commercial Aerospace Ecosystem **Dr. Subbarao Pavuluri**, President SIA-India and CMD, ATL
18.30-19.30	**Astronaut Panel:** Bridging Simulations and Earth-Orbit Missions: Engineering the Future of Deep Space Exploration Moderator: **Shri. Puneet Kumar Mishra,** Head, EIS-3, URSC Panellists: **Grp Capt. Prasanth B Nair**, Astronaut, India **Grp Capt. Angad Pratap**, Astronaut, India **Matt Harasymczuk,** CEO, AATC, Poland **Jahnavi Dangeti,** Analog Astronaut **Mohan San Akula,** Analog Astronaut **Agata Maria Harasymczuk,** AGH University of Kraków
19.30-20.30	Welcome Dinner & Networking

DAY 02 | JULY 21, 2026 (TUESDAY)

Time (IST)	Topics
8.00-9.00	3 Minute Thesis (3MT) Competition
09:00-09:30	MW-GW Pulsed Power System **Dr. Archana Sharma**, Prime Minister's professor, NIT Raipur & Former AD, BARC, Mumbai
09:30-10:00	Air Traffic Model of India (ATMI) **Prof. Radhakant Padhi,** IISc, Bengaluru
10.00-10.30	Tea/Coffee/Networking
10.30-11.50	**Plenary Talk** 1. RF Technologies for Microwave / mm-wave /sub-mm-wave Sensors for Space Applications **Dr. Ch. V N Rao**, DS & AD(R&D), SAC, ISRO 2. AstroNav: Autonomy for Navigating the Cosmos **Dr. Swati Mohan**, NASA 3. Reimagine Certification for Aerospace **Dr. Sanjay K Bramhane**, Joint DGCA
11.50-12.50	**Panel Discussion on** Space, Aerospace and Defence Convergence: Need, Awareness and Fourth-Dimension Warefare Moderator: **Lt. General (Retd.) Ramesh Halagalli,** Deputy Chief of Army Staff Panellists: **Dr. Subbarao Pavuluri**, CMD ATL **Shri. M Sheik Althaf**, Director, LRDE **Shri. Jasvinder Singh Khoral**, Prog. Dir. URSC **Grp Capt HN Prasanna**, Director of Space, DSA
12.50-13.50	Lunch/Networking

Time (IST)	Topics
13.50-14.50	**Panel discussion on** Unlocking India's Orbit: Overcoming Regulatory, Ground Segment, and Market Access Barriers in Satcom Chair: **Dr. P K Jain**, Director-PMA, IN-SPACe Panelists: **Mr. Rajanish Sharma**, GD MCF-ISRO, **Mr. Siddharth Dubey**, Director, Program Headquarters, Hughes India, **Mehul Bhandari**, Principal, RegStack Access, **Dr. Prafulla Kumar**, VP -Satellite Technology, Reliance Jio, **Mr. Mahesh Basavaraju**, Market Segment Manager, Wireless
14.50-15.30	**Plenary Talk** 1. RELEVANCE OF THE SELF-RELIANCE IN SEMICONDUCTORS **Dr. Kamaljeet Singh**, Director, SCL 2. From Lucknow to the ISS: Chasing India's Space Dreams **Gp. Capt. Shubhanshu Shukla**, Gaganyatri, HSFC
15.30-16.00	Tea/Coffee/Networking
16:00-17:30	**Special Session:** The Human in the Loop: Engineering for Life in India's Human Spaceflight Programme **Gp Capt. (Dr.) Stuti Mishra**, **Gp Capt. (Dr.) Punyashlok Biswal, Wg Cdr. (Dr.) Polash Sannigrahi, Dr. ChN Sowgandhi**, Sc F
17:30-18:00	**Keynote Talk:** System Engineering Aspects of SARAS **Dr. Abhay A Pashilkar**, Director, NAL
18:00-18:30	**Plenary Talk** Indian Interplanetary Missions: Scientific Outcomes and Next-Generation Roadmap **Shri. A S Kiran Kumar,** 2015-2018 Secretary DoS and Chairman, ISRO,
18:30-19:30	**Awards Night & Valedictory** **Shri. A S Kiran Kumar,** 2015-2018 Secretary DoS and Chairman, ISRO**, Braham Himed,** President IEEE AESS**,** **Puneet Kumar Mishra,** GC**, Chandrakanta kumar,** TPC Chair
19.30-20.30	Conference Dinner & Networking

INAUGURAL SESSION:

July 20 | 10:30 - 12:00 | Convention Hall

Prof. Kathleen Kramer
2025 IEEE President

Kathleen A. Kramer is a Professor of Electrical Engineering at the University of San Diego in California, USA. She worked to develop new engineering programs as a founding member of the faculty and eventually became the chair of electrical engineering, then serving as Director of Engineering (2004-2013), providing academic leadership for all of the university's engineering programs. Her teaching interests are in the areas of signal processing, mechatronics and robotics, and communication systems. She has also been a member of technical staff at several companies, including ViaSat, Hewlett Packard, and Bell Communications Research. She is a Distinguished Lecturer for the IEEE Aerospace and Electronic Systems Society (AESS) and is a past vice president of the Society. She is a Fellow of ABET and a leader in the development of criteria for cyber security, mechatronics, and robotics. Kathleen served on the IEEE Board of Directors as IEEE Secretary and chair of Governance and IEEE Region 6 (Western USA) Director. She was also chair of the 2023 IEEE Ad Hoc Committee on Innovating Funding Models. She received the B.S. degree in electrical engineering magna cum laude with a second major in physics from Loyola Marymount University, and the M.S. and Ph.D. degrees in electrical engineering from the California Institute of Technology.

Chief Guest

Shri M Sankaran
DS & Director URSC

Shri M Sankaran is a Distinguished Scientist of Indian Space Research Organisation(ISRO). He took over as Director of U R Rao Satellite Centre (URSC), the lead Centre in the country for design, development and realisation of all satellites of ISRO, on June 01,2021. He is currently leading satellite fraternity to realise various types of satellites to meet the national requirements in the areas like communication, navigation, remote sensing, meteorology and inter-planetary exploration. Before taking over as Director, URSC he was functioning as Deputy Director for Communication and Power Systems Area in URSC and spearheading the developments. During his 35 years of experience in URSC / ISRO, he has contributed primarily in the areas of Solar arrays, Power systems, Satellite Positioning System and RF communication systems for Low Earth Orbit(LEO) Satellites, Geostationary Satellites, Navigation Satellites and Outer Space Missions like Chandrayaan, Mars Orbiter Mission (MOM) and others. He was instrumental in successful realisation of the 70V bus for the ISRO satellites, unique design for power generation and distribution systems for the interplanetary mission like Chandrayaan-1 & 2, Mars Orbiter Mission, Astrosat, etc. He has fostered the industries in the country for fabrication and testing of solar panels, battery systems, etc. Among his works in the recent years, he is leading the efforts towards to miniaturisation of avionics systems, indigenisation of electronics & power system components, micro/mini satellite bus development, etc. He is also spearheading the avionics system design, realisation and qualification for the Gaganyaan Programme. He joined the ISRO Satellite Centre (ISAC), currently known as URSC after obtaining his Master's degree in Physics from Bharathidasan University, Tiruchirappalli in 1986. He has been awarded ISRO's Performance Excellence Award for the Year 2017 and ISRO Team Excellence awards in 2017 and 2018. He has about 50 publications to his credit in Peer Reviewed Journals and International conferences.

INAUGURAL SESSION:

July 20 | 10:30 - 12:00 | Convention Hall

Chief Guest

Dr. B K Das
DG(ECS)

Dr B K Das, Distinguished Scientist has been appointed as Director General (Electronics & Communication System) on 29th April 2022. Prior to this, he was Director, ITR followed by Director, IRDE and Director, DEAL. He was an integral part of Indian Missile Program for 33 years and worked relentlessly towards Test and Evaluation of various state of the art Missiles and other air borne Weapon Systems. He was instrumental in flight evaluation of all missiles under IGMDP, Agni and its variants, BMD, BrahMos, LRSAM, MRSAM, air to air missiles and all other class of weapon systems. He has led the team towards planning and establishment of new test ranges beyond ITR. He has spearheaded the Test Range, which is the Best and Busiest Range in the world today.

He has transformed the Test Range Technology for the country to have entire capability of indigenous Test Systems with international capabilities. Indigenous development of Electro Optical Tracking System, Tracking Radar System, Long Range Telemetry System, Phased Array & drone-based Telemetry system, Dual Band Telemetry to beat the plasma, Telecommand System and number of multitarget tracking Systems along with various processes and system software creating automated system for mission management has been achieved under his dynamic leadership. In IRDE, under his dynamic leadership a number of state-of-the-art products could be realized like Electro-optic Mast, Light weight Electro Optic Payload for helicopters, Compact Optronic Payload for UAVs and Aircrafts, Advanced Gunner Main Sight and Indigenous Commander Panoramic Sight, Time Gated Raman Spectroscopy, LIDARs, Hyperspectral Systems and many more critical EO systems. During this period, he has created various infrastructure and state of the art Test Facilities for Electro Optical Systems which will reduce the development cycle of such systems.

He has led various projects of national importance in both the Labs and defined the vision for both of these laboratories for next 20 years. He has also spearheaded critical communication programmes like Software Defined Radio, CTCS, Datalink etc. As Director General of Electronics and Communication System, he has led significant programmes of national importance like Active Electronically Scanned Array Radar (Uttam) and its variants for fighter aircrafts enabling its production and next gen technologies in fighter radars, land based and air borne Electronic Warfare Systems, Long Range Radars, first antidrone system leading to production in a record time of 24 months, Dornier Midlife upgrade system etc. He has taken some game changing initiatives to have a faster realisation of systems and building the defence ecosystem with Industries, Academia, Startups, MSME and Incubation Centres. He has brought defence challenges across these entities towards realising a techno rich organisation. He received numerous awards including Lakshmipat Singhania-IIM, NRDC, Young Engineer National Award and Medallion by Indian National Academy of Engineering (INAE), Biju Ratna Award, Agni Award of Excellence in Self Reliance from DRDO, Scientist of The Year Award for the year 2003, Award for DRDO path breaking research for Air Defence Systems for the year 2006-07, Award for DRDO Path breaking research for the year 2007-08, etc.

INAUGURAL SESSION:

July 20 | 10:30 - 12:00 | Convention Hall

Dr. Braham Himed
IEEE AESS President

Dr. Braham Himed was born in Algiers, Algeria. He received his Engineer Degree in electrical engineering from Ecole Nationale Polytechnique of Algiers in 1984, and his M.S. and Ph.D. degrees both in electrical engineering, from Syracuse University, Syracuse, NY, in 1987 and 1990, respectively. From 1990 to 1991 he was an Assistant Professor in the Electrical Engineering Department at Syracuse University, where he taught graduate courses in analog and digital communications, digital signal processing, probability, and random processes.

In 1991, he joined Adaptive Technology, Inc., Syracuse, NY, where he was responsible for radar systems analyses and the design of antenna measurement systems. In 1994 he joined Research Associates for Defense Conversion, Marcy, NY, where he was responsible for radar systems analyses and radar signal processing, including techniques for the detection and estimation of targets in severe clutter and jamming environments. From March 1999 to July 2006, he was a senior research engineer with the U.S. Air Force Research Laboratory, Sensors Directorate, Radar Signal Processing Branch, Rome, NY, where he led scientific and management aspects of airborne and space-borne phased array radar systems.

From August 2006 to June 2008, he served as the Chief Research Officer with Signal Labs Inc, in Reston VA, directing R&D for the company. From 2008 - 2018, he served as the Technical Advisor for the RF Technology branch with the Air Force Research Laboratory, Wright Patterson Air Force Base, OH. Since January 2019, he serves as a Division Research Fellow within the RF Technology Branch, Multi-Spectral Sensing and Detection Division, of the Sensors Directorate.

His research interests include detection, estimation, multi-channel adaptive signal processing, time series analyses, array processing, adaptive processing, waveform design, diversity, and optimization, distributed MIMO radar, passive radar, and over the horizon radar. Dr. Himed serves as the US Air Force representative on several international forums, including TTCP (The Technology Cooperation Program) and NATO SET panels. Currently, he serves as both the US National lead and Panel Chair of the TTCP Intelligence Surveillance, Target Acquisition, and reconnaissance (ISTAR) Technical Panel - 2 on RF Sensing.

Dr. Himed has published over 280 peer-reviewed journals and conference papers. He served as the general technical co-chair for the 2010 and 2015 IEEE International Radar Conferences. Dr. Himed is the recipient of the 2001 IEEE Region I award for his work on bistatic radar systems, algorithm development, and phenomenology. He joined the IEEE AESS Radar Systems Panel in 2001, served as vice-chair from 2014-2016, and panel chair from 2016-2018. Currently, he serves the panel as past-chair, and chair of the Warren White award.

Dr. Himed is a Fellow of the IEEE (2007). He is also the recipient of the 2012 IEEE Warren White award for excellence in radar engineering, and he is a Fellow of AFRL (2013).

PLENARY TALK

Monday, July 20 | 12:00 - 12:30 | Convention Hall

A Vision for SPace, Aerospace and defenCE(SPACE) Technologies towards AtmaNirbhar and Viksit Bharat

Dr. S Somanath
2022-2025, Secretary DoS & Chairman ISRO

Dr. Sreedhara Panicker Somanath served as a Distinguished Scientist (Apex) and Secretary, Department of Space and Chairman, ISRO till January 2025. Dr. S. Somanath, having a career spanning nearly 40 years, is an expert in the field of space technology and systems engineering of launch vehicles, and has made significant contributions. Presently he serves as the Prof. Vikram Sarabhai Professor at ISRO, Distinguished visiting professor at IISc, Bangalore, Chancellor of Chanakya University, Bangalore and an Advisor to State Government of Andhara Pradesh.

As Secretary of DoS, he had piloted the National Space Policy, engagement of ISRO with private space initiatives and start-ups in space sector. Under his leadership mission Chandrayaan-3 landing near the south pole of the Moon was accomplished. Notable missions during his tenure include Aditya-L1, XpoSat, INSAT-3DS, NVS-01, Oceansat, GSAT-24, SpaDeX & LVM3-OneWeb missions. Under his leadership Small Satellite Launch Vehicle and Test Vehicle were developed and landing experiments of the Re-usable Launch Vehicle (RLV-LEX) were conducted. He played a key role in the architecture of Gaganyaan and accomplished the first mission abort demonstration. He was instrumental in developing the 'Space Vision-2047', where Gaganyaan expansion program, Chandrayaan series and other exploration missions, Bharatiya Antariksha Station development and human mission to Moon, new launch pads were approved by government.

He was the Director of Vikram Sarabhai Space Centre (VSSC) during 2018-21 and the Director of Liquid Propulsion Systems Centre (LPSC) during 2015-18. He was System Engineer and the Project Director of LVM3-X/CARE mission which was successfully accomplished in December, 2014. Dr. S. Somanath took his B. Tech in Mechanical Engineering from TKM College of Engineering, Kollam with a university rank, Masters in Aerospace Engineering from IISc, Bangalore with gold medal and PhD from IITM Chennai. He has been bestowed with Honorary Doctorates from 18 universities.

He is a Fellow of Indian National Academy of Engineering (INAE), Indian National Academy of Science (INSA), Aeronautical Society of India (AeSI), Astronautical Society of India (ASI), US National Academy of Engineers (US-NAE) and a member of International Academy of Astronautics (IAA). He is the President (Elect) of AeSI and President of Society of Aerospace Quality and Reliability (SAQR). He received 'Hall of Fame' award from International Astronautics Federation (IAF), Von-Karman award from International Academy of Astronautics (IAA), National Aeronautics Prize from AeSI, Space gold medal from ASI, Distinguished alumni award of IISc, Bangalore and IIT Madras, distinguished fellow award from IIT Kanpur, Karnataka Rajyotsava award, Kerala Prabha and Kerala Sasthra Puraskaram. He has published papers in journals and conferences in structural dynamics and control, materials modelling, dynamic analysis of separation mechanisms, vibration and acoustic testing, launch vehicle design and launch services management. Dr. S. Somanath has widely travelled and visited across most global space agencies and facilities, has been a delegate to UN-COPUOS, vice President of International Astronautical Federation (IAF) and participated in International Astronautical Congress (IAC) held at different countries.

PLENARY TALK

Monday, July 20 | 12:30 - 13:00 | Convention Hall

The Confluence of Engineering and National Security: Driving Indigenous Aerospace Innovation

Dr. G Satheesh Reddy
2018-2022 Secretary
DDR&D & Chairman DRDO

Dr G. Satheesh Reddy is an eminent Indian aerospace scientist who has spearheaded India's defence self-reliance over nearly four decades. Rising from a navigation scientist at the Defence Research and Development Organisation (DRDO), he served as its Chairman, Secretary of the Department of Defence R&D, and Scientific Adviser to the Defence Minister.

As a pioneer in advanced avionics, Dr Reddy masterminded critical systems like the Agni-5 missile and India's historic "Mission Shakti" Anti-Satellite (ASAT) test. Beyond his central roles, his strategic expertise is heavily leveraged across various governments. He serves as a Member of the National Security Advisory Board (NSAB) for the Union Government and holds a Cabinet-rank position as the Honorary Advisor (Aerospace & Defence Manufacturing) to the Government of Andhra Pradesh.

He also acts as an honorary advisor (R&D) to IIT Hyderabad.His monumental contributions have earned him global accolades. He is the first Indian in over a century to receive the Honorary Fellowship from the Royal Aeronautical Society, London.

He was also the first non-US recipient in four decades to win the Missile Systems Award from the American Institute of Aeronautics and Astronautics (AIAA). Domestically, he has been honoured with India's prestigious Aryabhata Award, Homi J. Bhabha Gold Medal, and National Design Award. Dr Reddy is an inducted Fellow of the Indian National Academy of Engineering (INAE) and the UK's Royal Institute of Navigation

PLENARY TALK

Monday, July 20 | 14:00 - 15:00 | Convention Hall

1. Future Proofing Aerospace Through Platform-Based, Software Defined Systems

Mr. Bhaskar Ceri
MD NI-India & Global Business Manager for Aerospace, Defense & Government - BU

Baskar Ceri has more than 2 decades of experience across various Industries (Aerospace, Defense, Research, Automotive, Railways, Software Services, etc.) playing various roles starting from Engineering, Sales, Business Development, Operations to General Management. Baskar started his career at NI in Austin, USA and was part of the 2-member team that started NI operations in India growing the team and the revenue to multi million dollars in India. After his initial corporate role, Baskar founded an Engineering Services Company to provide Deep-Tech Engineering Solutions to Indian Defense, Space & Automotive companies and later founded a Knowledge Engineering Products company, the first Indian company to build products & systems that improve Safety & Efficiency of Railway Assets. Baskar has also been involved in several acquisitions & divestments during his experience & currently serves on the board of several companies and has keen interest in mentoring & building world changing companies. Baskar holds an Electrical & Electronics Engineering degree from BITS-Pilani, India and a Master's in Electrical Engineering from Vanderbilt University, USA. In his current role at NI, Baskar serves a dual role as Global Director of Business Development of ADG BU to build strategies and execute the business growth of the Aerospace & Defense Business across the globe with Regional Sales, and in India as Managing Director of NI-India, responsible for NI India growth and development.

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2. Agility Over Advantage: Space, Security, and the Asymmetry Trap

Dr. Aniruddha Mukhopadhyay
Lead Chief Technologist, Synopsys Inc.

Aniruddha Mukhopadhyay serves as the Lead Chief Technologist at Synopsys, Inc., headquartered in Sunnyvale, USA. In this capacity, he provides strategic counsel to senior executives across global enterprises on technologies pertaining to digital engineering initiatives. His domain of expertise encompasses model-based engineering, open collaborative ecosystems, software-defined systems, and AI/ML-driven analytical frameworks for data-informed decision-making. Holding a Ph.D. in Mechanical Engineering and possessing several decades of distinguished professional experience, Aniruddha is recognized as a subject matter authority in the Automotive, Aerospace, Defense, and High-Technology sectors. His present responsibilities center on the formulation and execution of technology adoption strategies designed to accelerate product design and validation, thereby enabling continuous design iteration across global supply chains and R&D organizations. In addition, Aniruddha leads a dedicated R&D team based in Pune, India, focused on the automated synthesis of cyber-physical systems and mission architectures, virtualization, IT-OT integration frameworks, and the deployment of embedded digital twins at the edge.

PLENARY TALK

Monday, July 20 | 14:00 - 15:00 | Convention Hall

3. Born Digital, Flown Physical

Mr. Savyasachi Srinivas
Vice President Global Engineering & Technology Centres Collins Aerospace India, Poland, and Puerto Rico

Savyasachi Srinivas (Savya) is the Vice President of Global Engineering & Technology Centres (GETC) at Collins Aerospace, leading operations across India, Poland, and Puerto Rico. GETC is home to over 4,000 engineers and plays a pivotal role in advancing Collins Aerospace's innovation agenda globally.

In his current role, Savya is part of the Enterprise Engineering organisation and is responsible for the overall strategy, growth, and delivery of global engineering centres. His teams provide critical engineering support across all Collins Aerospace Strategic Business Units (SBUs), driving execution of both commercial and military programs for customers worldwide.

Savya brings over two decades of global aerospace and defence experience across the United States and India. He has led cross-functional, geographically distributed teams to develop and deliver large-scale, mission-critical systems in aerospace, aviation, and defence domains.
He began his career at Lockheed Martin in the U.S. as a Systems Engineer, where he advanced into leadership roles overseeing functional and program teams for air traffic management systems and mission-critical platforms. He then moved to Thales India as Director of Engineering, supporting programs in avionics, cabin systems, air traffic management, and IT.

In 2013, Savya joined Rockwell Collins as Director of the India Design Centre, later serving as Senior Director of Asia Pacific Engineering, where he led engineering sites in India, Australia, and Singapore. Most recently, he served as Executive Director for GETC India, before taking on his current global leadership role.

A passionate advocate for innovation and capability development, Savya is focused on building an environment that fosters collaboration, technical excellence, and sustainable value creation for the enterprise.
Savya holds a Bachelor's degree in Mechanical Engineering from Bangalore University, a Master's in Industrial Engineering from the University of Arizona, and a Master's in Technical Management from Johns Hopkins University.

Technical Sessions at a Glance

DAY 01 | JULY 20, 2026 (MONDAY)

Time(IST)	Convention Centre	Amaryllis	Petunia	Scarlet 1	Scarlet2
08:00-10:00		**S29:** AITC-II	**S30:** AMSS-I	**S31:** RT-I	**S32:** Metasurfaces
10:00-10:30	**TCBN3:** Tea/Coffee Break & Networking				
10:30-12:00	**IS: Inaugural Session** **Prof. Kathleen Kramer,** 2025 IEEE President**, Dr. Braham Himed,** AFRL,IEEE AESS President**, Dr. B K Das,** DG(ECS), DRDO**, Shri M Sankaran,** DS & Director URSC**, Dr. Rajalakshmi Menon,** DS & DG(Aero), DRDO**, Shri Rajeev Jyoti,** DS & Director, Technical IN-SPACe**, Dr. Seema Chopra,** ED, Boeing India**, Mr. Puneet Kumar Mishra,** VP(Education), IEEE AESS & General Chair, SPACE				
12:00-12:30	**Plenary Talk:** A Vision for SPace, Aerospace and defenCE(SPACE) Technologies towards AtmaNirbhar and Viksit Bharat **Dr. S Somanath**, 2022-2025, Secretary DoS & Chairman ISRO				
12:30-13:00	**Plenary Talk:** The Confluence of Engineering and National Security: Driving Indigenous Aerospace Innovation **Dr. G Satheesh Reddy,** 2018-2022 Secretary DDR&D & Chairman DRDO				
13:00-14:00	**LBN2:** Lunch Break & Networking				
14:00-15:00	**PS1A: Plenary Talks** 1: Future Proofing Aerospace Through Platform-Based, Software Defined Systems 2. Agility Over Advantage: Space, Security, and the Asymmetry Trap 3. Born Digital, Flown Physical				
15:00-16:00	**PS1B:** Panel Discussion on Building Sovereign Capability-Private Sector's Role in India's Defence & Space				
16:00-16:30	**TCBN4:** Tea/Coffee Break & Networking				

Technical Sessions at a Glance

DAY 01 | JULY 20, 2026 (MONDAY)

Scarlet 3	Zinnia	Tulip	Poinsettia 1	Poinsettia 2	Heliconia 1	Heliconia 2	Hibiscus 1	Hibiscus 2
S33: AUT-II		**S34:** SDRT	**S35:** CSCSIT-I	**S36:** MPCNG-II	**S37:** CSCSIT-II	**S38:** SACASM	**S39:** SDP-II	**S40:** ARMP
TCBN3: Tea/Coffee Break & Networking								
LBN2: Lunch Break & Networking								
TCBN4: Tea/Coffee Break & Networking								

DAY 01 | JULY 20, 2026 (MONDAY)

Time(IST)	Convention Centre	Amaryllis	Petunia	Scarlet 1	Scarlet2
16:30-17:30	**PD:** Panel Discussion on The New Space Age: Scaling Deep-Tech Innovations	**S41:** AITC-III	**S42:** AMSS-II	**S43:** RT-II	**S44:** SA-III
17:30-18:00	**Fire Side Chat:** The New Space Frontier: Data Centres, Tech Initiatives, and the Power of One IEEE, **Prof. Kathleen Kramer**, Immediate Past President, IEEE, **Tom Coughlin**, 2024 IEEE President, **Puneet Kumar Mishra**, GC, IEEE SPACE (Moderator)				
18:00-18:30	**PS: Lightening Talks: 1.** System Engineering Foresight for Assured Space Situational Awareness and Resilient Space Defence 2. Bridging Lab Testing and Real-world Space using Maury Satellite Link Emulator Solution 3. The New Space Race: Driving India's Commercial Aerospace Ecosystem				
18:30-19:30	**Astronaut Panel:** Bridging Simulations and Earth-Orbit Missions: Engineering the Future of Deep Space Exploration **Shri. Puneet Kumar Mishra,** Head, EIS-3, URSC, (Moderator), **Grp Capt. Prasanth B Nair, Grp Capt. Angad Pratap, Matt Harasymczuk**, CEO, AATC, Poland**, Jahnavi Dangeti,** Analog Astronaut, **Mohan Said Akula,** Analog Astronaut, **Agata Maria Harasymczuk**, AGH University of Kraków				
19:30-20:30	**DN1:** Welcome Dinner & Networking				

DAY 01 | JULY 20, 2026 (MONDAY)

Scarlet 3	Zinnia	Tulip	Poinsettia 1	Poinsettia 2	Heliconia 1	Heliconia 2	Hibiscus 1	Hibiscus 2
S45: WLTD-2		**S46:** NGRA	**S47:** Quantum-II	**S48:** MPCNG-III	**S49:** RASE-II	**S50:** SERQA-II	**S51:** SDP-III & SMB	**S52:** TRT

DAY 02 | JULY 21, 2026 (TUESDAY)

Time(IST)	Convention Centre	Amaryllis	Petunia	Scarlet 1	Scarlet2
08:00-09:00	**3MT:** 3 Minute Thesis Competition	**S53:** AITC-IV	**S54:** MPCNG-IV	**S55:** RT-III	**S56:** SA-IV
09:00-10:00	**IT:** 1. MW-GW Pulsed Poer System, 2. Air Traffic Model of India				
10:00-10:15	**TCBN5:** Tea/Coffee Break & Networking				
10:15-10:30					
10:30-11:30	**PT:** 1. RF Technologies for Microwave / mm-wave /sub-mm-wave Sensors for Space Applications, 2. AstroNav: Autonomy for Navigating the Cosmos, 3. Reimagine Certification for Aerospace			**SS:** Application of AI/ML in Airborne Surveillance Systems	**MI:** Move India: 1st Anniversary Celebrations
11:30-12:30	**PD:** Panel discussion on Space, Aerospace, and Defence (SPACE) Convergence: Need, Awareness, and Fourth-Dimension Warfare				
12:30-13:30	**LBN3:** Lunch Break & Networking				
13:30-14:30	**PD:** Panel discussion on Unlocking India's Orbit: Overcoming Regulatory, Ground Segment, and Market Access Barriers in Satcom,			**SS:** Next Gen Technologies in Radar System	**CCM:** R10 Chapter Chairs Meeting
14:30-15:30	**PT:** 1. Relevance of The Self-Reliance in Semiconductors, 2. From Lucknow to the ISS: Chasing India's Space Dreams				
15:30-16:00	**TCBN6:** Tea/Coffee Break & Networking				
16:00-17:30	**SS:** The Human in the Loop: Engineering for Life in India's Human Spaceflight Programme	**S65:** ESVRMNE	**S66:** ASTAA	**S67:** RT-IV	**S68:** EMI/EMC/GST
17:30-18:00	**KT:** System Engineering Aspects of SARAS: **Dr. Abhay A Pashilkar**, Director, NAL				
18:00-18:30	**PT:** Indian Interplanetary Missions: Scientific Outcomes and Next-Generation Roadmap or topic of your interest: **Shri. A S Kiran Kumar**, 2015-2018 Secretary DoS and Chairman, ISRO,				
18:30-19:30	**ANV:** Awards Night & Valedictory: **Shri. A S Kiran Kumar**, 2015-2018 Secretary DoS and Chairman, ISRO, **Braham Himed**, President IEEE AESS, **Puneet Kumar Mishra**, GC, Chandrakanta kumar, TPC Chair				
19:30-20:30	**DN2:** Conference Dinner & Networking				

DAY 02 | JULY 21, 2026 (TUESDAY)

Scarlet 3	Zinnia	Tulip	Poinsettia 1	Poinsettia 2	Heliconia 1	Heliconia 2	Hibiscus 1	Hibiscus 2
S57: AUT-III		**S58:** COMNET-II	**S64:** PE-II	**S60:** MD	**S61:** mm-wave/THz	**S62:** MORS-II	**S63:** PLNDA	**S64:** ENPT
	TCBN5: Tea/Coffee Break & Networking							
				TCB5: Tea/Coffee Break				
	LBN3: Lunch Break & Networking							
YFLP: Young Faculty Laureate Program								
	TCBN6: Tea/Coffee Break & Networking							
S69: BAS		**S70:** SSI & SDR	**S71:** COMNET-III	**S72:** MPCNG-V	**S73:** CSCSIT-III	**S74:** SERQA-III	**S75:** RASE-III	**S76:** MPCNG-VI

PANEL DISCUSSION

Monday, July 20 | 15:00 - 16:00 | Convention Hall

IEEE AESS Bangalore Chapter

IEEE SPACE 2026

IEEE BANGALORE SECTION AESS

Panel Discussion

Building Sovereign Capability-Private Sector's Role in India's and Space, Aerospace & Defence

Dr. K. Rajalakshmi Menon
DS & Director General (Aero), DRDO (Moderator)

Dr. Arun T Ramchandani
Senior VP & Head L&T PES, Larsen & Toubro

Dr. Apparao Venkata Mallavarapu
Founder & CMD Centum Electronics Ltd

Dr. R Muralidharan
CTO, TASL

Shri. A. Anbarasu
Director General (Acquisition), Ministry of Defence (MoD)

Mr. Prem Andrade
Distinguished Engineer, Ansys

Room: Convention Centre

Monday, July 20 | 15.00-16.00

PANEL DISCUSSION

Monday, July 20 | 16:30 - 17:30 | Convention Hall

FIRE SIDE CHAT:

Monday, July 20 | 17:30 - 18:00 | Convention Hall

IEEE AESS Bangalore Chapter

IEEE SPACE 2026

IEEE BANGALORE SECTION AESS

Panel Discussion

Fire Side Chat: The New Space Frontier: Data Centres, Tech Initiatives, and the Power of One IEEE

Puneet Kumar Mishra
GC, IEEE SPACE (Moderator)

Prof. Kathleen Kramer
Immediate Past President, IEEE

Tom Coughlin
2024 IEEE President

Room: Convention Centre

Monday, July 20 17:30 – 18:00

LIGHTENING TALKS

Monday, July 20 | 18:00 - 18:30 | Convention Hall

1. System Engineering Foresight for Assured Space Situational Awareness and Resilient Space Defence

Mr. Sai Santhosh Manepally
Director-TE, CADFEM

Worked on a variety of industry applications into process engineering, power & energy, pharmaceutical and home appliances domains Specialized in Multiphase flows and Conjugate Heat Transfer (CHT)

Effective in preparing and presenting simulation value proposition to audience savvy and non-savvy about virtual prototyping

Has a proven track record across diverse clientèle for an elegant formulation and successful implementation of a simulation adoption roadmap Known in the organization and the adjoining community for the knack to assimilate and liaison with clients regarding Multiphysics simulation requirements

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2. Bridging Lab Testing and Real-world Space using Maury Satellite Link Emulator Solution

Dr. Zacharia Ouardirhi
Sr. VP(CE), Maury Microwave

Zacharia Ouardirhi, SR. Vice President, Customer relationship from Maury Microwave, USA, a leading provider of advanced RF and microwave measurement solutions.

Zacharia brings extensive experience in RF test and measurement technologies, working closely with customers to develop innovative solutions for device characterization, load-pull, and communication system testing.

LIGHTENING TALKS

Monday, July 20 | 18:00 - 18:30 | Convention Hall

3. The New Space Race: Driving India's Commercial Aerospace Ecosystem

Dr. Subbarao Pavuluri
President SIA-India and
CMD, ATL

Dr. Subba Rao Pavuluri is a technologist and an entrepreneur with extensive experience in Indian Space Program (ISRO) for over four decades. He was one of those early pioneers of private industry in high technology areas. He founded "Ananth Technologies Limited (ATL)" in 1993 for Design, Development and Fabrication of highly reliable systems and sub-systems for Indian Space Programme (ISRO) and Indian Defence. ATL has now grown to an entity of 1500 of highly qualified and skilled technical personnel and is the recipient of several technology excellence awards.

ATL has facilities located in Hyderabad, Bangalore and Thiruvananthapuram and has contributed so far for 88 satellites and 67 launch vehicles for Indian Space Programme. ATL is the first private industry to set up assembly, integration and testing facilities for satellite and launch vehicles.

Dr Rao is endeavouring to bring out the full potential of satellite communication systems, especially for country of the size and diversity like India, for various applications and in tapping new areas of applications.

He is currently the Chairman and Managing Director of ANANTH TECHNOLOGIES LTD. (ATL) and holds B.E., M.E., Ph.D

ASTRONAUT PANEL:

Monday, July 20 | 18:30 - 19:30 | Convention Hall

INVITED TALK

Tuesday, July 21 | 09:00 - 10:00 | Convention Hall

1. MW-GW Pulsed Poer System

Prof. Archana Sharma
Prime Minister's professor,
NIT Raipur & Former AD,
BARC, Mumbai

Dr. Archana Sharma is a distinguished scientist with extensive experience in advanced and applied electrical engineering spanning over 35 years. She is an accomplished engineer within the DAE and a renowned professor affiliated with the HBNI. She is recognized for her strong leadership qualities and adeptness in seamlessly executing large-scale projects from conception to completion. She specialized in multi-gigawatt high-voltage pulsed power technology. Her notable achievements include pioneering the design and development of the country's first 1MV bipolar charging pulser system, as per DAE's mandate. She was also instrumental in designing and developing an Indigenous Linac-based neutron radiography system and an industrial accelerator simulator, showcasing her dedication to fostering self-reliance in Bharat through contributions to BARC. Dr. Sharma has also spearheaded initiatives aimed at introducing cutting-edge repetitive switching and mobile pulsed power technologies tailored for industrial applications. She was instrumental in facilitating successful field trials of laboratory-proven technologies. She has earned numerous accolades, including the prestigious Homi Bhabha Science and Technology Award from DAE, the EMC Engineer of the Year Award at the Asia Pacific Conclave, and inclusion in the Top 75 Women in STEM and Top 75 Women in Engineering lists by PSA and INAE respectively. She started as a scientific officer in DAE subsequently ascending to various leadership positions within the BARC and eventually serving as the Director of the BTDG in BARC. She chaired numerous safety committees, expert committees, and inspection teams throughout her tenure. In addition to her leadership roles, she made significant contributions to academia and research. She has served as a member of the Board of Studies, Academic Council, and chaired doctoral committees at HBNI. She has been pivotal in formulating academic programmes at HBNI, fostering collaborations with esteemed institutions such as IIT-B, IIT-BHU, IIT-KGP, IIT-M, Andhra University etc. She has also guided the research of 17 doctoral and multiple M.Tech students. With a strong international presence, Dr. Sharma has undertaken important assignments with leading international institutions including the International Atomic Energy Agency (IAEA), Fermi Lab, and the Nuclear Physics Institute in Russia. Furthermore, she has delivered numerous plenary and invited talks at esteemed forums, showcasing her expertise and leadership in the field.

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2. Air Traffic Model of India

Dr. Radhakant Padhi
Professor, Dept. of
Aerospace Engineering,
IISc, Bangalore

Dr. Radhakant Padhi is currently working as a Professor (HAG scale) and the Satish Dhawan Chair in the Department of Aerospace engineering, and as an Associate Faculty at the Centre for Cyber-Physical Systems, Indian Institute of Science (IISc), Bangalore. Prof. Padhi's research interests include optimal and nonlinear control synthesis algorithms and their applications to challenging practical problems, mainly in aerospace and biomedical engineering. His research is well-supported by MoE, DRDO, ISRO, DBT, and a few tech-driven foundations and private companies. He has co-authored approximately 300 publications in peer-reviewed international journals and conferences, and also two books – one on Satellite Formation Flying (in 2021) and another on Intelligent Adaptive Control with System Constraints (in 2026). Yet another book on Applied Optimal Control and State Estimation is also being finalized. Prof. Padhi is a Fellow of Indian National Academy of Engineering (INAE) of India, Aeronautical Society of India (AeSI), Astronautical Society of India (ASI), and a few other societies. He is the Director of Operations of the Automatic Control and Dynamic Optimization Society of India and has been a past president of it too. He is an Associate Editor of the international journal "Unmanned Systems". He is a member of technical review committees for several missions of ISRO and DRDO. His recent passion is his two deep-tech startups incubated in IISc, one focusing on Advanced Guidance and Control of aerospace vehicles for challenging missions and the other focusing on diabetes care. Through these, he intends to focus utilizing his knowledge and experience on the benefit of the country and mankind.

PLENARY TALK

Tuesday, July 21 | 10:30 - 11:50 | Convention Hall

1. RF Technologies for Microwave / mm-wave /sub-mm-wave Sensors for Space Applications

Dr. Ch. V N Rao
DS & AD(R&D), SAC, ISRO

Dr. Ch. V. N. Rao joined the Space Applications Centre (SAC), ISRO, in 1989 after completing his Bachelor's degree in Electronics and Communication Engineering. Over the past three and a half decades, he has played a pivotal role in the development of microwave remote sensing payloads for India's Earth observation and planetary missions and has been one of the principal architects of ISRO's microwave sensing programme.

Dr. Rao has been the lead designer and key contributor in the realization of numerous state-of-the-art microwave payloads, including C-band Synthetic Aperture Radars (SAR) for RISAT-1, EOS-04 and EOS-09; Ku-band Scatterometers for Oceansat-2, SCATSAT-1, EOS-06 (Oceansat-3) and Oceansat-3A; RISAT-2B series payloads; Ka-band Altimeters for Chandrayaan-2 and Chandrayaan-3; and the landmark NASA-ISRO Synthetic Aperture Radar (NISAR) mission. His contributions have been instrumental in establishing India's indigenous capabilities in advanced microwave remote sensing technologies.

As a visionary technologist and team leader, Dr. Rao has successfully led multidisciplinary teams in developing complex and cutting-edge payloads, including India's first SweepSAR-based S-band SAR for the NISAR mission. He has made significant contributions to indigenous technology development, strategic self-reliance, and successful technology transfer to Indian industries for the production of flight-qualified hardware.

Dr. Rao completed his Ph.D. from Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar, in 2019. His research contributions are reflected in over 150 peer-reviewed publications, more than 500 citations, and six patents.

He is a Member of the International Academy of Astronautics (IAA), a Senior Member of IEEE, and a Life Member of the Astronautical Society of India (ASI), Indian Society of Remote Sensing (ISRS), and Indian Society of Systems for Science and Engineering (ISSE).

Presently, Dr. Rao serves as Distinguished Scientist and Associate Director (Research & Development) at SAC, ISRO, where he provides strategic leadership for advanced research and technology development in microwave remote sensing, satellite communications, navigation systems, quantum technologies, terahertz technologies, and airborne as well as spaceborne sensing systems. Under his guidance, SAC continues to advance cutting-edge technologies that strengthen India's capabilities in space science, Earth observation, communication, and strategic applications.

Throughout his illustrious career, Dr. Rao has demonstrated exceptional technical leadership, innovation, and commitment to excellence. His pioneering contributions have significantly strengthened India's capabilities in microwave remote sensing, Earth observation, planetary exploration, and strategic space technologies. He is widely recognized for nurturing teams, promoting industry participation, and advancing novel technologies, including innovative microwave resonator-based accelerometer systems.

Dr. Rao's distinguished contributions have left an enduring impact on ISRO's remote sensing programme and continue to inspire the next generation of scientists and engineers.

PLENARY TALK

Tuesday, July 21 | 10:30 - 11:50 | Convention Hall

2. AstroNav: Autonomy for Navigating the Cosmos,

Dr. Swati Mohan
Project Manager, AstroNav

Swati was born in Bengaluru India, and emigrated to the United States of America when she was one years old. Swati attended Cornell University and received her B.S. in 2004 in Mechanical and Aerospace Engineering. After a brief stint working at NASA Jet Propulsion Laboratory on the Cassini mission, in 2004-2005, she went on to graduate school at Massachusetts Institute of Technology in the Aeronautics/Astronautics department.

She re-joined NASA's Jet Propulsion Laboratory in 2010 in the Guidance, Navigation, and Controls section. Since then, Swati has worked on a number of missions, such as GRAIL, OCO-3, Mars 2020 Perseverance, and Psyche. She is best known for being the voice of Entry, Descent, and Landing for Perseverance's landing on February 18, 2021. She was the GNC lead and a Chief Engineer for the Psyche mission, which launched on October 13, 2023. After launching Psyche, Swati transitioned to the Mars Sample Return mission. She first served as Chief Engineer for the Mars Launch System, then later the Descent Command and Control Lead. She is currently the Project Manager for AstroNav, an autonomous celestial navigation payload.

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3. Reimagine Certification for Aerospace

Dr. Sanjay K Bramhane
Joint DGCA

Sanjay Kisan Bramhane is the Joint Director General at India's DGCA. An IIT Bombay Aeronautical Engineering graduate with an LLB, he uniquely combines technical, legal, and operational expertise. He began his career as a DRDO scientist before shifting to civil aviation, where he led critical regional safety audits and high-profile accident investigations.

Recently, he chaired the government's high-level probe into nationwide airline disruptions and currently leads the panel developing India's Multi-Crew Pilot Licence framework. Today, he directs core national portfolios including licensing, international cooperation, enforcement, and indigenous aircraft certification.

PANEL DISCUSSION

Tuesday, July 21 | 11:50 - 12:30 | Convention Hall

IEEE AESS Bangalore Chapter

IEEE SPACE 2026

IEEE BANGALORE SECTION AESS

Panel Discussion

Space, Aerospace, and Defence (SPACE) Convergence: Need, Awareness, and Fourth-Dimension Warfare

Lt. General (Retd.) Ramesh Halagalli
Deputy Chief of Army Staff (Moderator)

Shri. M Sheik Althaf
Director, LRDE

Shri. Jasvinder Singh Khoral
Prog. Dir. URSC

Grp Cptn H N Prasanna
Director of Space, DSA

Room: Convention Centre, Amaryllis, Petunia

Tuesday, July 21 | 11.50-12.30

PANEL DISCUSSION

Tuesday, July 21 | 13:50 - 14:50 | Convention Hall

PLENARY TALK

Tuesday, July 21 | 14:50 - 15:30 | Convention Centre, Amaryllis, Petunia

1. Relevance of The Self-Reliance In Semiconductors

Dr. Kamaljeet Singh
Director, SCL

Dr. Kamaljeet Singh, M.Tech., Ph.D., joined the Indian Space Research Organisation (ISRO) in 1999 at the U.R. Rao Satellite Centre (URSC), where he spent over two decades making critical contributions to the India's space program. His tenure at ISRO was marked by the development of vital electronic components for space applications, including Geo-receiver systems, Hybrid Microcircuits (HMCs), MIC/MMIC circuits, and realization of indigenized components. During his tenure at URSC, he led the team of production, fabrication, quality and. contributed in major missions of ISRO. Many new initiatives and R&D activities culminated in import substitution of critical devices & technology. Furthermore, his specialized training in thin-film technology at SCL propelled his subsequent work in RF-MEMS and the initiation of indigenous sensor development projects. Presently he is Director General of SCL and driving push for self-reliance in the semiconductor sector. Under his leadership, SCL has significantly enhanced the nation's indigenous chip manufacturing capabilities apart from contributing significantly in skill development. Most notably, he oversaw the successful qualification of fully indigenous, aerospace-quality microprocessors like VIKRAM3201, Kalpana Chip, a landmark achievement realized in collaboration with ISRO using SCL's 180 um CMOS technology node. Apart from various qualified ICs sensors, CCDs to strategic sectors, instrumental in taking new initiatives such as SoC, SiP developments, plastic packaging, new process development etc. Also initiated various collaborative work with start-up, academia, industry. Dr. Singh has authored over 250 technical articles, written 6 technical books, holding several patents and recipient of multiple Awards from prestigious institutions, including the Indian National Academy of Engineering (INAE), IETE, and ISRO, also holding Senior Membership of IEEE, Fellowship from IETE and the Punjab Academy of Sciences. He won Vikram Sarabhai Award from ISRO for the best technical books.

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2. From Lucknow to the ISS: Chasing India's Space Dreams

Gp. Capt. Shubhanshu Shukla
Gaganyatri, HSFC

Group Captain Shubhanshu Shukla is a highly distinguished Indian astronaut and an elite officer in the Indian Air Force. An alumnus of the prestigious National Defence Academy, he was commissioned into the fighter stream of the IAF in June 2006. Over his illustrious military career, he advanced to the rank of Group Captain, serving as an experienced fighter combat leader and test pilot. He has logged more than 2,000 flying hours across various advanced aircraft, including the Su-30 MKI, MiG-21, and MiG-29.Shukla's extraordinary capabilities led to his selection by the Indian Space Research Organisation (ISRO) for the landmark Gaganyaan human spaceflight programme.

He completed intensive aerospace training at Russia's Yuri Gagarin Cosmonaut Training Center and ISRO's Bengaluru facility. Making history, he served as the primary mission pilot for the Axiom Mission 4 (Ax-4), becoming the first Indian astronaut to visit the International Space Station (ISS).In recognition of his unprecedented bravery, composure, and historic contributions to human space exploration, President Droupadi Murmu conferred him with the Ashoka Chakra, India's highest peacetime gallantry award, during the 2026 Republic Day honours. Additionally, his global impact was recognized internationally when he was named a 2026 Fellow by the prestigious global space community, The Karman Project.Adding author to his long list of achievements, Shukla released his deeply personal memoir, "The Second Orbit: Belief of a Man... Dreams of 1.4 Billion Hearts,"

SPECIAL SESSION

Tuesday, July 21 | 16:00 - 17:30 | Convention Hall

KEYNOTE TALK

Tuesday, July 21 | 17:30 - 18:00 | Convention Hall

System Engineering Aspects of SARAS

Dr. Abhay A Pashilkar
Director, NAL

Dr Abhay Anant Pashilkar joined National Aerospace Laboratories after his M.E. from the Indian Institute of Science (IISc), Bangalore, in 1993 and B.Tech (Hons) from IIT Kharagpur both in Aerospace Engineering. He worked as a Guest

Scientist for 9 months in 1998 in the Institute of Flight Mechanics, DLR, Braunschweig, Germany. He has a Ph.D from the IISc in 2002. Pashilkar was with the NTU, Singapore for his post-doctoral fellowship from 2003 till 2005. Dr. Pashilkar was part of the National Control Law Team (NCT) for the Light Combat Aircraft project at the Flight Mechanics & Control Division (FMCD). In this period, his responsibilities included upgrading and maintaining the Engineer-in-the-loop-

Simulator (ELS) for the LCA Airforce and Navy versions. He was the Deputy Project Director for the SARAS Autopilot programme from 2005 to 2011. From 2007 to 2014, he was Group Head, Flight Simulation at FMCD, NAL. The group under his charge undertook development of the SARAS Flight Training Device (FTD) and the Regional Transport Aircraft (RTA) simulator. The Advanced Medium Combat Aircraft (AMCA) control laws and a flight simulator, as well as the Handling Qualities Simulator for ASTE, IAF, were realised. In 2015, he provided the flight dynamic model of the Mig21 aircraft simulator at Bhuj Air Force Base. He has coordinated the multi-divisional Mirage project for aero-mechanical clearance of new stores from 2015 till 2018 under a project sanctioned by HAL.

This is a multi-disciplinary activity involving various divisions of NAL (flight mechanics & control, structures, wind tunnel tests, computation fluid dynamics, and flight tests). In 2018, he took over as the founding head of the Systems Engineering Division (SysED). The division is implementing Product Life Cycle Management (PLM), Multi-disciplinary Design Aircraft Optimization (MDAO), Reliability Analysis, and Model-based Systems Engineering (MBSE) solutions for aircraft programmes like SARAS Mk II and Hansa of NAL. SysED supports feasibility studies of Hansa Next Generation (NG) aircraft and the Regional Transport Aircraft (RTA). Subsequently, it has given key inputs for the configuration selection of the SARAS Mk II. The division has prepared the aircraft level reliability analysis for Hansa and SARAS Mk II systems and conducted anthropomorphic studies of the SARAS Mk II cockpit. SysED has also determined the mass and energy balance required for the design of the feasible High Altitude Pseudo-Satellite (HAPS) of the Zephyr class. From 2019 to 2022, he was the Program Director (Civil Aircraft Projects) at NAL.

Dr. Pashilkar has guided six PhD's and one MS Engineering candidate in the areas of flight dynamics and control, parameter estimation, computer science, and human factors. There are over 70 publications in national as well as international journals and conferences with him as an author. He has received the CSIR Young Scientist Award in Engineering Sciences for the year 2001 in the area of "Significant Contributions to Control System Design, especially towards Providing Control Law for Handling of Aircraft under High Angle of Attack Unsteady Aerodynamics". He was also awarded the Indian National Academy of Engineering (INAE) Young Engineer Award for the Year 2003 for "Modeling, Analysis, and Simulation of Aerospace Systems". NAL received the CSIR Technology Award 2019 for "Carriage, Handling, and Store Release for a Fighter Aircraft" for its work on the Mirage FoC Upgrade project.

PLENARY TALK

Tuesday, July 21 | 18:00 - 18:30 | Convention Hall

Indian Interplanetary Missions: Scientific Outcomes and Next-Generation Roadmap or topic of your interest

Shri. A S Kiran Kumar
2015-2018 Secretary DoS and Chairman, ISRO

Shri A. S. Kiran Kumar is Chairman, Physical Research Laboratory Management Council and Member, Space Commission, Govt of India.

He has served as Secretary, Department of Space and Chairman, Indian Space Research Organisation, during 2015-2018.

Shri Kiran Kumar, born on October 22, 1952 in Hassan, Karnataka, holds M.Sc. Degree in Physics (Electronics) from Bangalore University and M.Tech. Degree in Physical Engineering from Indian Institute of Science, Bangalore.

He has steered the implementation of the applications oriented Indian Space Programme, which has facilitated rapid development of the country in many important spheres of earth observation, communication, navigation, meteorology and space science, as well as the development of indigenous launch vehicles and related technologies for providing assured access to space. He has led design and development of more than 50 Electro-Optical Imaging Sensors flown on various Space borne platforms starting from Bhaskara in 1979. Further, his role in the success of Chandrayaan missions and Mars Orbiter Mission has been significant.

Shri Kiran Kumar has been the Chair of the Committee on Earth Observation Satellites (CEOS) in 2012. He has made valuable contributions to Coordination Group of Meteorological Satellites (CGMS), Expert Team on Satellite Systems – World Meteorological Organisation (ETSAT of WMO) and Indo-US Joint Working Group on Civil Space Cooperation.

Shri Kiran Kumar has been the President, Aeronautical Society of India. He is Fellow of Indian National Academy of Engineering, National Academy of Sciences India, Indian Society of Remote Sensing, Institution of Electronics & Telecommunications Engineers, Indian Society of Systems for Science & Engineering, Indian Meteorological Society, Indian Society of Geomatics, Gujarat Science Academy, Andhra Pradesh Akademi of Sciences and an elected member of International Academy of Astronautics. He has been conferred with Honoris Causa and DSc by 18 Indian academic institutions.

He has co-authored 85 publications in various national/international scientific journals/conferences/symposiums.

In recognition of his contributions, he was conferred Padma Shri by the President of India in 2014. Other notable honours conferred on him include, Rajyostava Award by for 2015, `Sir M. Visvesvaraya Senior Scientist State Award' for 2013 by Government of Karnataka, Lifetime Achievement Award from Karnataka Science and Technology Academy in 2016, IISc Distinguished Alumnus Award for 2015, Gujarat Ratna `Life for Innovation' Award conferred by Gujarat Innovation Society in 2014, Lifetime Achievement Award by Andhra Pradesh Akademi of Sciences in 2016, Bharat Ratna Sir M. Visvesvaraya Centenary Award by University of Mysore in 2016, G.M. Modi Science Award in 2016, H K Firodia Vijnan Ratna Award in 2017, Santokbaa Award instituted by SRKKF Surat in 2018 and ISRO Lifetime Achievement Award 2018. He has been conferred with the prestigious 2018 International von Karman Wings Award instituted by the Aerospace Historical Society, together with the Graduate Aerospace Laboratories at the California Institute of Technology, in 2018 and the Chevalier de l'Ordre national de la Légion d'Honneur – the highest civilian honour by the Government of France in 2019.


DETAILED
PROGRAM SCHEDULE

DAY 0 | JULY 19, 2026 (SUNDAY)

Sunday, July 19 | Room: Tulip | 8:00 - 10:15 Hrs

S1: Quantum-I | Quantum Technologies

Chairs: Yogesh Kr (URSC Bangalore, India), Santu Sardar (DYSL-QT, DRDO, India)

8:00	**Non-Markovian Noise Modeling and Fidelity Optimization for Reliable Quantum Communication** Neha Tiwari, Jayesh Narayanan, Mothika Kamal Lochan, Kalavakuntla Anil Srinivas and Dharmaraja Selvamuthu (IIT Delhi, India)
8:15	**QSRNet: Hybrid Quantum-Classical Learning with Variational Circuits for Enhanced Feature Representation in Image Super-Resolution** Kannuru Srinadh and Yerram Deekshith Kumar (National Institute of Technology Rourkela, India); Upendra Sahoo (NIT Rourkela, India); Santos Ku Das (National Institute of Technology Rourkela, India)
8:30	**QFL-ProNIDS: A Robust Quantum Federated Learning Framework for Intrusion Detection in Non-IID Networks** Shubham Jagdale, Jagadish S Jakati, Maheshwari Biradar and Prateek Saurabh Srivastav (D Y Patil International University, India)
8:45	**Quantum Technologies Reshaping the Space Domain** Shekar Munirathnam (Honeywell, USA)
9:00	**Time-Resolved Security Analysis of Quantum Free-Space Optical Communication Under Dynamic Space Channels** Ritu Vijay Jadhav (Modern Education Society's Wadia College of Engineering, Pune, India); Jay Hemantkumar Shete (The Modern Education Society's Wadia College of Engineering, Pune, India)
9:15	**DTQN-QKD: Deadline-Aware Contact-Graph Entanglement Routing and Opportunistic Swapping for Satellite QKD** Himanshu Sahu and Hari Prabhat Gupta (Indian Institute of Technology (BHU) Varanasi, India)
9:30	**Quantum-Assisted Autonomous Decision-Making Under Partial Observability for Spacecraft** Mahesh Babu Chittem and Venkata Siva Sai Rohith Uppala (SRM University AP, India); Ashok Kumar Pradhan (SRM University, Andhra Pradesh, India)
9:45	**Design and Modeling of Nanomaterial-Based Optical Devices for Sensing Applications** Darshan R V (Visvesvaraya Technological University, India); Venkatesha Muniswamy, Varsha H N, Vidhya B N and Vidyashree Vidya (Sai Vidya Institute of Technology, India)
10:00	**Radiation Tolerant Thermal Masking for Low Earth Orbit Quantum Key Distribution** Anagha A Nagarhalli, Sachin Samuel and Velmathi Guruviah (Vellore Institute of Technology, India)

Sunday, July 19 | Poinsettia 1 | 8:00 - 10:15 Hrs

S2: AIMLT-I | AI/ML Technologies

Chairs: Adishesha CS (Collins Aerospace an RTX Business, India), Vidya V (UR Rao Satellite centre, ISRO, India)

8:00	**Artificial Intelligence Based Predictive Analysis and Mitigation of Space Radiation Effects on Astronaut Health** B Manvitha (Sri Venkateshwara College of Engineering, India); Harsha P (Sri Venkateshwara College of Engineering, Bengaluru, India); Vineeth Kumar P K (Sri Venkateshwara College of Engineering (SVCE) Bangalore, India); Jijesh J J, Dhanavanthesh S and S Santhosh Sagar (Sri Venkateshwara College of Engineering, Bengaluru, India)
8:15	**Generative AI-Driven Self-Healing and Adaptive Spectrum Management for Resilient Satellite Communications** Pullela Vaishnavi, Velmugilan Senthilkumar, Pullela Giridhar and Dodda Sri Pujitha (Sastra Deemed University, India); Nithyakalyani D and Venkatesh Thirugnanasambandam (SASTRA University, India)
8:30	**Adaptive Fault-Tolerant Embedded Software Architecture for Spacecraft and Defence Platforms: A Hybrid AI-Rule Framework with Safety Assurance** Akash Ranjan (KIIT University, India)
8:45	**Theoretical Framework for AI-Powered Signal Compression in Deep Space Communication: Comprehensive Mathematical Analysis and Performance Bounds** Aryuemaan Kumar Chowdhury (Indian Institute of Technology Hyderabad, India & OSCOWL ai, India)
9:00	**Architecture-Level Analysis of Deep Learning Models for Fine-Grained Military Aircraft Recognition** Tejas D. Nagaral (Sir M. Visvesvaraya Institute of Technology, India); Cyril Robinson Azariah J (Sir M Visvesvaraya Institute of Technology, India)
9:15	**Partially Binarized UNet for Real-Time Mars Terrain Segmentation on Edge Space Platforms** Srijita Bhattacharya (Techno International New Town, India); Devapriya Das (Vellore Institute of Technology, India); Kaustubh Anand Kandi and Piyush Joshi (Indian Space Research Organization, India); Mainak Adhikari (Indian Institute of Science Education and Research Thiruvananthapuram, India); Ritu Karidhal (Indian Space Research Organization, India)
9:30	**Transformer-Based Autoencoder for Real-Time Anomaly Detection in Satellite Telemetry Streams** Pandava Sudharshan Babu, Shyma Chandrasekharan and Chamundeshwari S (School of Engineering and Technology, CMR University, Bengaluru, India)
9:45	**Digital Twin for Vibration Systems** Vibheesha Dwarakanathan (RV College of E, India); Siva Subbarao Patange and Vedaprakash S (National Aerospace Laboratories, India)
10:00	**Explainable Sunspot Number Prediction from SDO/HMI Images Using Deep Learning** Pandava Sudharshan Babu, Kashish, Deepthi M and Shyma Chandrasekharan (School of Engineering and Technology, CMR University, Bengaluru, India); Omprakash Gottam (Koneru Lakshmaiah Education Foundation, India)

Sunday, July 19 | Heliconia 1 | 8:00 - 10:15 Hrs

S3: AIMLT-II | AI/ML Technologies

Chairs: Suresh S D (Electronics & Radar Development Establishment, India), Jayita Saha (Manipal Institute of Technology, India)

8:00	**Geometric Separation of Scientific Contradictions: Mitigating Hallucinations in High-Precision Astro-RAG** Samrat Ray and Ranjeet Kulkarni (Indian Institute of Information Technology Allahabad, India); Snigdha Sen (Manipal Institute of Technology, India); Pavan Chakraborty (Indian Institute of Information Technology, Allahabad, India)
8:15	**Reliability-Aware Stellar Rotation Inference from Single-Sector TESS Photometry** Mukund Kushwaha (Kalinga Institute of Industrial Technology, India); Anjishnu Saw (KIIT University, India)
8:30	**PIRL-Net: Physics-Informed Residual Learning for Autonomous Collision Avoidance in Dense Space Environments** I Shania Jone and P Nagarathna (Nitte Meenakshi Institute of Technology, India)
8:45	**HDF-UNet: A Heterogeneous Data Fusion U-Net for Semantic Flood Mapping from SAR Imagery** Jayasree Thazhath Veedu (Central University of Kerala, India & Periya, Kerala, India); Rajesh R (Central University of Kerala, India)
9:00	**Deep Learning-Driven Onboard Hyperspectral Image Analysis for Satellite Health Monitoring** Premkumar Chithaluru (Symbiosis Institute of Technology & SITH, India); Rajanikanth Aluvalu (Symbiosis International University, India); Narsimhulu Pallati (Symbiosis International Deemed University, Pune, India)
9:15	**Flood Mapping Using Sentinel-1 SAR Backscatter Analysis for Urban Disaster Resilience: A Case Study of the 2015 Chennai Flood Event** Aravinth J (Amrita Vishwa Vidyapeetham, India); Jaisujan S J, Vishal R S, Shylendar P M and Tarun S K (Amrita School of Engineering, Coimbatore, India)
9:30	**Multi-Scale Convolutional Intelligence for Resilient Synchrophasor Telemetry Authentication in Mission-Critical Power Infrastructure** Robert Nobili Britto (SASTRA University, India & SEEE, India); Ganesan Balasubramanian and Venkatesh Thirugnanasambandam (SASTRA University, India)
9:45	**Physics-Aware Deep Learning Approach for Hyperspectral Unmixing of Lunar Surface Minerals** Urvashi Mesariya and Tarjni Vyas (Nirma University, India); Anuja Nair (Nirma University, Ahmedabad, Gujarat, India); Shivani Desai (Institute of Technology Nirma University, India); Sudeep Tanwar (Marwadi University, India)
10:00	**Bi-Directional ANN Framework for Forward and Inverse Design of Microstrip Antenna** Gayatri Routhu (SRM University AP, India); Manas Sarkar (ISTRAC, India); Rupesh Kumar (SRM University AP, India)

Sunday, July 19 | Heliconia 2 | 8:00 - 10:15 Hrs

S5: SA-I | SPACE Antennas

Chairs: Senthil Kumar (ISRO, Bangalore, India), Debdeep Sarkar (Indian Institute of Science, India)

8:00	**High-Permittivity Loaded Dual-Polarized Rectangular Dielectric Resonator Antenna for Next-Generation Communications** Vadlamudi Roja (National Institute of Technology, TRICHY & NIT TRICHY, India); Balakrishna Islavath (MeitY & Govt of India, India); Yalangi Kenny Nisanth (National Institute of Technology Andhra Pradesh, India)
8:15	**A High Gain Wideband Elliptic Antenna with Reduced Cross-Polarization in Sub-6GHz Band** Savita Baraskar (IIT INDORE, India & Indira Gandhi Engineering College Sagar Madhya Pradesh, India); Rinkee Chopra (IIT Indore, India)
8:30	**Bending and Slot Integration Effects on the Flexible and Wearable Microstrip Antenna for ISM Band Applications** Sarita Rathee (Manipal university Jaipur); Gaurav Kumar Soni (Global Institute of Technology, India); Dinesh Yadav (Manipal University Jaipur, India)
8:45	**A Wideband Pentagonal Cavity-Backed SIW Antenna for X-Band Applications** Sakshi Jad (Yeshwantrao Chavan College of Engineering, Nagpur, India); Chandra Vijay Bharati (VNIT, Nagpur, India); Ashwin Kothari (VNIT NAgpur, India)
9:00	**Design of Compact Self-Diplexing SIW Antenna for WiMAX and WiFi Applications** Asmitha S (Amrita School of Engineering, India); Nithyakarthiga R (Amrita School of Engineering, Coimbatore, India); Shamili P (Amrita School of Engineering, India); Mekaladevi V (Amrita University, India)
9:15	**Wideband X-Band Slot Antenna with Uniform Bidirectional Gain Using Cross-Elliptical Aperture** Abhishek Karwa (BITS, Pilani, India); Ashish Kumar Verma (School of Engineering and Technology, DIT University, Dehradun, India); Ritish Kumar (Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh, India); Abhishek Joshi (Dolcera Information Technology Services (P) Ltd, India); Mohd Jahangeer (Birla Institute of Technology and Science, Pilani, India); Rahul Singhal (BITS Pilani, India)
9:30	**Wideband Gain Improvement of Cross-Elliptical Slot Antenna Using Quarter-Sector Loaded Circular Frequency Selective Reflector** Abhishek Karwa (BITS, Pilani, India); Ashish Kumar Verma (School of Engineering and Technology, DIT University, Dehradun, India); Ritish Kumar (Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh, India); Abhishek Joshi (Dolcera Information Technology Services (P) Ltd, India); Mohd Jahangeer (Birla Institute of Technology and Science, Pilani, India); Rahul Singhal (BITS Pilani, India)
9:45	**Development of Ridge Gap Waveguide Based Power Dividers and a 4x4 Slot Array Antenna for Millimeter Wave Applications** Amiruddin Shams (Osmania University, Hyderabad, India); A. Bharathi (Osmania University, India); Amlesh Singh (Lrde, India); Beenamole K S (Defence R & D Organisation (DRDO), India); G. Ravi Shankar Reddy (CVR College of Engineering, India)

Sunday, July 19 | Hibiscus 1 | 8:00 - 10:15 Hrs

S6: MPCNG-I | Mission Planning / Control / Navigation / Guidance

Chair: Anuradha S Prakasha (UR Rao Satellite Centre, India)

8:00	**Coordinated Aerial Grasping Using Vision-Based Navigation for Aerial Manipulation** Sanjai V (Indian Institute of Technology, Hyderabad, India); Vishal S K (Technical University of Munich - Asia, Singapore); Dharshan Kumar D (Defence Institute of Advanced Technology, India); Machetti Venkata Lakshmi Vaishnavi (Indian Institute of Science, Bengaluru, India); Jinraj V Pushpangathan and Sakthivel Thangavel (Amrita Vishwa Vidyapeetham (Deemed University), India)
8:15	**A Heuristic-Enhanced RRT Framework for UAV Navigation in Defence and Tactical Environments** Sumit Saha (IIT Dhanbad, India); Rahul Bhattacharya (Indian Institute of Technology(ISM), Dhanbad, India)
8:30	**Geostationary Spacecraft End-of-Life de-Orbiting Using Solar Radiation Pressure** Umesh Chandra (Indian Institute of Technology, Kanpur, India); Abhilash Karan and Arya Das (IIT Kanpur, India); Dipak Kumar Giri (IIT KANPUR, India)
8:45	**Modeling and Performance Analysis of Closed-Loop Hydraulics System for High-Speed Takeoff and Landing of Aircraft** Suraj Kumar (Indian Institute of Technology, Madras, India); Mohammad Shahid Quamar (Defence Research and Development Organisation, India); Asokan T (IIT Madras, India)
9:00	**Aerodynamic Modelling of Longitudinal Motion Using Neural Network** Maaz M Ahmed and Nishantika Sengupta (Alliance University, India); Hari Om Verma (Defence Institute of Advanced Technology Pune, India); Syed Alay Hashim (Alliance University, India)
9:15	**Terrain-Aware Balanced Area Allocation for Heterogeneous Multi-Robot Systems in Planetary Surface Missions** Sebastian Stelter, Leonard Felicetti and Saurabh Upadhyay (Cranfield University, United Kingdom (Great Britain))
9:30	**Experimental and Simulation Based Performance Evaluation of PI-Controlled Actuator Systems for Interplanetary Rovers** Vevina Shreya Cutinho (M. S. Ramaiah University of Applied Sciences, India); Navneeth S R (Ramaiah University of Applied Sciences, India); B. K. Swathi Prasad (M. S. Ramaiah University of Applied Sciences, India)
9:45	**Adaptive Safe Landing Spot Detection for UAVs on Mars-like Terrain Using Depth-Image Analysis and Onboard Computing** Milind Late (Yeshwantrao. Chavan College of Engineering, India); Seema Jogad (Mangalmay Institute of Management and Technology, India)
10:00	**A Digital Twin Framework for Planetary Rovers Using Rocker Bogie Suspensions Systems** Shravani Tembare (Vishwakarma Institute of Information Technology, India); S Srikaanth (India); Kripesh Singh and Arya Das (IIT Kanpur, India); Rima Ghosh (URSC, India); Harish K Joglekar (URSC, ISRO, India); Dipak Kumar Giri (IIT KANPUR, India)

Sunday, July 19 | Hibiscus 2 | 8:00 - 10:15 Hrs

S7: SERQA-I | System Engineering/Reliability / Quality Assurance

Chair: Prakash Rao Pjvks (URSC, India)

8:00	**Model-Based Systems Engineering for Powerline Communication in Autonomous Ground Vehicles** Zubair P K (Amrita Vishwa Vidyapeetham, India); Shanmugha Sundaram G A (Amrita Vishwa Vidyapeetham University & SIERS Research Laboratory, India)
8:15	**Design and Integration of a Model Sounding Rocket for Experimental Flight Missions** Shrijitha A G, Qasim Huzefa Johar, Bharath P, Visweshraj M, K. S. Rahul Bhargav, Rishab P. Badiger, Ayan Samanta, Sripad Kulkarni and Prashantha Kumar (Dayananda Sagar University, India)
8:30	**Computational Design and Performance Validation of an Origami-Inspired Habitat for Sustainable Martian Exploration** Rishika Bandyopadhyay, Sumedh S Bhat, Movva Sai Lalithadevi, Pratiksha Madiwalayya Gaddigimath and Srinivasan S (RV College of Engineering, India)
8:45	**Risk-Aware Evaluation of LEO Satellite Visibility Windows Using Survival Analysis** Karusala Deepak Chowdary, Suvadip Hazra and Rajendra Hegadi (Indian Institute of Information Technology Dharwad, India)
9:00	**Sodium Chloride is an Effective Binder for the Sintering of Lunar and Martian Regolith Simulants** Shivam Yadav (Indian Institute of Science, Bengaluru, India); Aloke Kumar (Indian Institute of science Bengaluru, India)
9:15	**Design and Development of a Dual-Payload Elliptical-Sat for Atmospheric Monitoring with Integrated Fragile Payload Protection** Anshi Pathak, Tarun kumar Reddy Sathi, Narayana Mala, Sai Srujan Marikukala, Akhil Salla and Abishek Kyasagalla (Anurag University, India); Shireesha Bochkari (Anurag Unniversity, India); Kavya Mididoddi and Vishwanath Panangipalli (Anurag University, India)
9:30	**System Level Reliability and Availability Analysis of a UAV Using Analytical Approach** Khushi Sen and Dharmaraja Selvamuthu (IIT Delhi, India)
9:45	**Cognitive Silence Detection in Autonomous Spacecraft Using Entropy-Based Telemetry Analysis** Abdul Lateef Haroon Phulara Shaik, Rehamath Unnisa, K Tanuja and Aaftab Zohra (Ballari Institute of Technology and Management, India); Tahiya Tarannum (Research Assistant, India)
10:00	**TCN-Based Real-Time Commercial Aircraft Health Monitoring for Safety Management** Sagar Bansal, Bharath Ramkrishna and Vikas Kumar (Defence Institute of Advanced Technology, India)

Sunday, July 19 | Heliconia 1 | 10:30 - 12:45 Hrs

S10: AIMLT-IV | AI/ML Technologies

Chairs: Shreya Banerjee (Manipal Institute of Technology Bengaluru, India), Sanjeev Gurugopinath (MMRFIC Technology Private Limited, India)

10:30	**Link Quality Prediction and QoS Routing Based on Deep Q Learning for LEO Satellite Networks** Arshee Naz, Karan Verma and Geeta Sikka (National Institute of Technology, India)
10:45	**AAS-U-Net: A Lightweight Axial-Attention Swin U-Net for Natural Disaster Segmentation Using Remote Sensing Images** Aparup Ghosh (Indian Institute of Engineering Science and Technology Shibpur, India); Arindam Biswas (BESU Shibpur, India)
11:00	**Satellite Image Based Land Cover Change Detection in India** Sathya D and Ananya A N (RV University, India)
11:15	**Neuro-Bayes: A Biologically Inspired Probabilistic Deep Learning Framework for Cognitive Anomaly Detection in Long-Duration Space Missions** Hayat Hussain Reshi and Mankirat Kaur (Guru Tegh Bahadur Institute of Technology, India); Mahender Singh (Guru Tegh Bahadur Institute of Technology Delhi, India)
11:30	**Multi-Objective Optimization for Energy Constrained Sensor Networks Using Policy Gradient Reinforcement Learning** Utkarsh Rana and Ujjwal Kumar Puri (Indian Institute of Information Technology Vadodara, India); Vikas Vaghasiya (Indian Institute of Information Technology, Vadodara, India); Sunandita Debnath (Indian Institute of Information Technology Vadodara, India)
11:45	**Deep Learning-Based Satellite Image Classification for Earth Observation** Santosh Kumar S, Sr and Prakasha G (Sri Venkateshwara College of Engineering, India); Kavitha B N (Sapthagiri NPS University, India); Jahnavi S T (Sri Venkateshwara College of Engineering, India)
12:00	**Design of ML Based Real-Time Automatic Modulation Classification from Satellite Downlink** Varsharani S, Rahul V, Sameehan J and Soumyadipto De (PES University, India); Manikandan J (PES University (PESU), India)
12:15	**Prediction of Daily XCO2 from OCO-2 Using XAI-Ensemble Model** Spurthy Maria Pais (Manipal Academy of Higher Education (MAHE), India); Sudhakara B (National Institute of Technology, India); Shrutilipi Bhattacharjee (National Institute of Technology Karnataka, India); Anand Kumar M (National Institute of Technology - Karnataka, India)
12:30	**Towards Statistical and Deep Learning Approach for Automated Powerline RFI Identification at GMRT** Saptarshi Nag (Giant Metrewave Radio Telescope (GMRT), NCRA-TIFR); Kaushal Buch (Giant Metrewave Radio Telescope, NCRA, Tata Institute of Fundamental Research, India); Divya Oberoi (National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, India)

Sunday, July 19 | Heliconia 2 | 10:30 - 10:45 Hrs

S12: MRCAC | MMIC/RFIC/CMOS/Active Circuits

Chairs: Nilesh Dineshbhai Makwana (Space Applications Centre, ISRO, India), Smita Raj (Samsung, India)

10:30	**Design of a High-Power SPDT MMIC Switch Using Stacked-FET Configuration** Anusree Ajayan (Indian Institute of Space Science and Technology, India); Rakhi Kumari (Solid State Physics Laboratory, India); Ritan Das (Indian Institute of Space Science and Technology, India); Ashish Jindal (DRDO, India & IIT Delhi, India); Basudev Majumder (IIT Bombay, India)
10:45	**Design and Simulation of a 1-4 GHz Ultra-Wideband MMIC Amplifier in 150 nm GaAs pHEMT Technology** Vedansh Verdia (Charotar University of Science And Technology, India); Nilesh Dineshbhai Makwana (Space Applications Centre, ISRO, India); Shruti Sinha (SAC, ISRO Ahmedabad, India); Milind B Mahajan (Space Applications Centre, ISRO, India); Jitendra Chaudhari (Chandubhai S Patel Institute of Technology, India)
11:00	**Designing of 25-35 GHz Broadband MMIC Amplifier Using 0.15um GaAs E-Mode pHEMT Process** Pushkar Suhas Pethe (Charotar University of Science And Technology, India); Nilesh Dineshbhai Makwana (Space Applications Centre, ISRO, India); Shruti Sinha (SAC, ISRO Ahmedabad, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
11:15	**Microwave Low-Noise Amplifier with Inverter CG Hybrid Topology in 90nm CMOS Technology** Rishi Vharsun J (National Institute of Technology, Warangal, India); Amarjit Kumar (National Institute of Technology Warangal, India); Sunit D Fulari (NIT Warangal); Yakub Banoth (National Institute of Technology Warangal, India); Ajay K Poddar (Synergy Microwave Corporation, USA & Oradea University Romania, Romania); Ulrich Rohde (Synergy Microwave Corp., USA)
11:30	**A 28-GHz Stacked Parasitics Aware Class-E Power Amplifier Design Using 65-nm CMOS** Kamini Singh (Indian Institute of Technology, Roorkee, India & IITR, India); Reddy Chaitanya (IITR, India); Ganesh Bargaje and Karun Rawat (Indian Institute of Technology Roorkee, India)
11:45	**Time Modulation-Based Enhanced Sum-Difference Monopulse Beamforming Pattern Generation Using SPDT Harmonic Switching Networks** Avishek Chakraborty (RV University Bangalore, India & National Institute of Technology Durgapur, India); Durbadal Mandal (National Institute of Technology, Durgapur, India); Ambar Bajpai (GITAM University, Bengaluru, India)
12:00	**A Frequency-Reconfigurable Double Tuning Fork Shaped Antenna Using PIN Diodes for CFDMA Based Wireless Applications** Shrinjoy Chatterjee (Institute of Engineering and Management, India); Kirtana Narayanan (SRMIST, India); Satyam Choudhary (Institute of Engineering and Management (Kolkata), India); Anamika A Kamath (HEX20, India); Gobinda Sen (Institute of Engineering & Management, Kolkata, West Bengal & UEM, Kolkata, India); Chinmoy Saha (Indian Institute of Space Science and Technology, India & Royal Military College of Canada, Canada)
12:15	**A High-Speed Dual ADC and DAC Interface IP Core Design for IF Direct Digitization** Nabonit Ghosh (Defence Institute of Advanced Technology, India); Arockia Bazil Raj (Defence Institute of Advanced Technology Pune, India)
12:30	**Hollow Extended Hemispherical Dome for Scan Preservation of an 8×8 Planar Phased Array** Ravi Kumar, J K, Mahima Gowda RG and A Mahesh (RV College of Engineering, India); Ashutosh Kedar (Scientist G, India)

Sunday, July 19 | Hibiscus 1 | 10:30 - 12:45 Hrs

S13: SDP-I | Signal/Data Processing

Chair: P Radhakrishna (LRDE, India)

10:30	**Adaptive Multi Sensor Fusion Framework for Object Detection and Navigation in Autonomous Aerospace Vehicles** Pratiksha Kamble (KLE Technological University, Hubballi, India); Srusti Bagewadi, Shaheen Hiremani and Pavitra Waddar (KLE Technological University, India); Sujata Ayyappanavar (Autonomous, India); Rajeshwari M. Banakar (BVBCET, India)
10:45	**Anomaly Detection from Compressed Measurements Using Sparsity Order** Jisha Daphne G (Indian Institute of Space Science and Technology, India); Thiruppathirajan Sankaralingam (VIKRAM SARABHAI SPACE CENTRE, India); Chris Prema (Associate Professor & Indian Institute of Space Science and Technology, Trivandrum, India); Lakshmi Narayanan (IIST, India)
11:00	**A Study of Perturbations on Acquisition and Tracking of NavIC Signal Under Interference** Kavindar Tiwari (Indian Institute of Technology, Delhi, India & New Delhi, India); Swades De (Indian Institute of Technology Delhi, India)
11:15	**SAPNet: A Lightweight and Efficient Saliency-Aware Path Network for Tiny Human Detection in Thermal Aerial Imagery** Vidhan Jain (National Institute of Technology Rourkela, India); Tanish (National Institute of Technology, Rourkela, India); Sobhan Kanti Dhara (National Institute Of Technology Rourkela, India)
11:30	**GeoStatNet: Geometric-Statistical Feature Fusion for Robust Ship Detection in Degraded Maritime Environments** Tanish (National Institute of Technology, Rourkela, India); Vidhan Jain (National Institute of Technology Rourkela, India); Sobhan Kanti Dhara (National Institute Of Technology Rourkela, India)
11:45	**LunarDEM-Net: High-Resolution Digital Elevation Model Generation from Lunar Optical Imagery via Shape-from-Shading and Convolutional Neural Networks** Charan Raj, Diya Khimani and Sripad Kulkarni (Dayananda Sagar University, India)
12:00	**Bandwidth-Dependent Analysis of DPD Linearization and Efficiency of Power Amplifiers** Smriti Keshri (IIT Roorkee, India); Aditya Kumar and Dusari Nageswara Rao (Indian Institute of Technology, Roorkee, India); Meenakshi Rawat (Indian Institute of Technology Roorkee, India)
12:15	**A Hybrid GAN-VAE Framework for Enhanced Lunar Terrain Reconstruction and Real-Time Hazard Analysis Using Chandrayaan-2 TMC Data** Pardhu Thottempudi (K L Deemed to Be University, India); Venkatesh Naramula (SR University, Warangal, India)
12:30	**From Detection to Tracking: Benchmarking YOLOv8 to YOLOv26 for Real-Time UAV Surveillance** Challa Bhagya Deepthi, Kannuru Srinadh and Yerram Deekshith Kumar (National Institute of Technology Rourkela, India); Upendra Sahoo (NIT Rourkela, India)

Sunday, July 19 | Hibiscus 2 | 10:30 - 12:45 Hrs

S14: PEOTHz | Photonics/Electro-optics/THz

Chairs: Prantik Chakraborty (SAC ISRO, India), Meena Dasan (LRDE, DRDO & Government, India)

10:30	**Interface-Driven SHG and Nonlinear Interferometry for Optical Metrology in Centrosymmetric Thin Films** Ardra Muriyankandathil (Birla Institute of Technology and Science, India); Nitish Kumar Gupta (BITS Pilani Hyderabad Campus, India)
10:45	**Design and Fabrication of Low-Loss Silicon Nitride Single-Mode Waveguide and MMI Splitter for Photonic Integrated Circuits** Amit Goyal (Solid State Physics Laboratory, DRDO, India); Ashish Jindal (DRDO, India & IIT Delhi, India); Sunil Sharma (Solid State Physics Laboratory, India)
11:00	**Compensation of Atmospheric Turbulence Using Adaptive Optics in Free Space** Chittilla Venkata Ravindra (SRM Institute of Science and technology kattankulathur, India); Laxmi Narayanan D, Achanta Satya Sri Datta Akarsh and V Sreshta (SRM Institute of Science and Technology Kattankulathur, India); Shayna Kumari and Shanthi Prince (SRM Institute of Science and Technology Kattankulathur)
11:15	**Indigenisation of FSM for Optical Communication from Space** Subrat Gopal (QOSMIC Satellite Systems Pvt Ltd, India); Arundhati Sharma (QOSMIC, India); Shashank Kumar Aradhya (QOSMIC Satellite Systems Pvt Ltd, India); Shreyaans Jain (QOSMIC, India)
11:30	**Automatic Detection of X-Ray Afterglow Phase Transitions in Gamma-Ray Bursts Using a Data-Driven Statistical Change-Point Detection Framework: A Swift-XRT Study** Aritra Sanyal (Jadavpur University, India); Vinod Kumar Bhardwaj and Manish Kalra (GLA University, India); Swapan Das (Arden University, United Kingdom (Great Britain)); Sougata Chatterjee (TIFR, India); Saibal Ray (GLA University, India)
11:45	**Design of a VO2-Based Wideband Dual-Functional Terahertz Metasurface Resonator** Gautam Gupta and Jude Melath (VNIT, Nagpur, India); Arvind Kumar (Dept of ECE Visvesvaraya National Institute of Technology Nagpur India, India)
12:00	**A Sub-Terahertz Metasurface Based Leaky-Wave Antenna with Broadside Radiation** Vishnu M (Cochin University of Science and Technology, India); G S L J Shivani, Shiv Narayan and Raveendranath Nair (CSIR-National Aerospace Laboratories, India)
12:15	**Precise Channel Model of Horizontal UWOC System** Rashmita Sahoo (Dayananda Sagar University, India)
12:30	**Inferring Satellite Network Architectures and Orbital Regimes from End-to-End Traffic** Sukwha Kyung, Jaejong Baek and Gail-Joon Ahn (Arizona State University, USA)

Sunday, July 19 | Tulip | 10:30 - 12:45 Hrs

S8: AUT-I | Advances in UAS Technologies

Chair: Kamesh Namuduri (University of North Texas, USA)

10:30	**Power-SWAP: Geometric Path Optimization for UAV Missions with Minimal Battery Swaps a Hierarchical Motion Planning Framework for Time-Efficient UAV Navigation Using 3D-GSE and Conical Sampling** Dhairya Dosi (Indian Institute of Technology, Gandhinagar, India); Lokesh Prajapati (Monarch Electronics, India)
10:46	**Finite Blocklength Assisted Reliable Control of UAVs with NOMA** Mood Umadevi (National Institute of Technology Warangal, Telangana, India); Sourabh Solanki (NIT Warangal, India); Vibhum Singh, Chandan Kumar Sheemar and Symeon Chatzinotas (University of Luxembourg, Luxembourg)
11:03	**Preventive Maintenance Strategy for BLDC Motors of UAV Systems Using Acoustic-Based Health Index** Dharmaraja Selvamuthu, Shivaani Hari and Shrenik Sakala (IIT Delhi, India)
11:20	**EKF-Enhanced Adaptive FMPC for Disturbance-Resilient UAV Trajectory Tracking** Binoy B B (College of Engineering Trivandrum, India); Sreeja S (College of Engineering Trivandrum Kerala, India); Radhika R (RIT Kottayam, India)
11:37	**Guidance Law for Surveillance by UAVs** Gururaj Khurd (Indian Institute of Technology, Kharagpur, India); Parth Madure, Sayantan Pal and Sikha Hota (Indian Institute of Technology Kharagpur, India)
11:54	**Sizing of Unmanned Aerial Vehicles for Low Reynolds Number and Transonic Flow** B Abhyagni Chander, Dingari Sai Teja, Shaik Abubakar Imthiyaz, Jayasurkanth M, Arjun Kumar M, Amith M, Rahul Prasad K, Adarsh Gunjan and Lokesh Sai K (Amrita Vishwa Vidyapeetham, India); Rajesh Senthil Kumar T (Amrita Vishwa Vidhyapeetham, India); Balajee Ramakrishnananda (Amrita Vishwa Vidyapeetham, India)
12:11	**Path Planning of UAV Using Direction and Velocity-Adaptive Artificial Potential Field** Nikita Vaibhav Pavle (Indian Institute of Technology, Kharagpur, India); Rakesh Kumar Sahoo (Indian Institute of Technology Kharagpur, India); Manoranjan Sinha (Indian Institute of Technology, Kharagpur, India)
12:28	**Design and Analysis of Lightweight Conformal Circularly Polarized Antenna for UAV Video Transmission** Divyanshi Srivastava and Ravi Kumar Gangwar (IIT ISM Dhanbad, India)

Sunday, July 19 | Poinsettia 1 | 10:30 - 12:45 Hrs

S9: AIMLT-III | AI/ML Technologies

Chairs: Seema Chopra (Boeing, India), Prashant Kulshreshtha (UR Rao Satellite Center, India)

10:30	**AntarikshAI: A Physics-Informed Neural Network Framework for Parameterized Generation and Visualization of Galaxy Morphologies** Harsh Awasthi, Tanu Sharma, Gaurav Shahi and Anshuman Pathak (Pranveer Singh Institute of Technology, Kanpur, India); Sandeep Kumar Khare (Pranveer Singh Institute of Technology, India)
10:45	**Improved Coastline Extraction from SAR Images with Classification-Segmentation Using a CNN-U-Net Two-Stage Architecture** Ananthakrishna Kudupu, Aditya Priyadarshi and Aswathi Mundayatt (Graphics-Visualization-Computing Lab, IIIT Bangalore, India); Jaya Sreevalsan-Nair (IIIT Bangalore, India); Abhinav Verma (Sapienza University of Rome, Italy); Avik Bhattacharya (Indian Institute of Technology Bombay, India)
11:00	**A Method for Autogeneration of Formally Verified Flight Software Using Large Language Models** Akhil A (Indian Institute of Space Science and Technology, India); Swethalakshmi H (VSSC, India); Deepak Mishra (IIST, India)
11:15	**Multi-Sensor Remote Sensing Framework for Assessing Cyclone-Induced Flooding and Ecosystem Vulnerability in the Sundarbans** Rakesh Kumar Gupta (National Institute of Technology, Meghalaya, India); Bijoy Kumar Dai (ISTRAC, India & Jadavpur University, India); Soumen Moulik (Indian Institute of Engineering Science and Technology, Shibpur, India); Sheli Sinha Chaudhuri (Jadavpur University, India)
11:30	**Intercomparison of Sea Ice Concentration from Synthetic Aperture Radar and Passive Microwave Radiometers Using Machine Learning Techniques** Nulakala Sai Srikar (Birla Institute of Technology and Science, India); Shubhangi Gawali (BITS PILANI GOA CAMPUS, India); Rajesh Kumar (Birla Institute of Technology and Science, Pilani, India)
11:45	**Comparative Evaluation of Classical and Hybrid Quantum-Classical Machine Learning Models for CubeSat Electrical Power State Classification** Ilaqquan Rajesh Indu (Ramaiah Institute of Technology, India); Jai Geetha (VTU, India); Shivanshi S, Uzma Sulthana, Sathvik Rao and Palak Ojha (Ramaiah Institute of Technology, India); Sowmya Bj (M S Ramaiah Institute of Technology, India); Mauli B (Ramaiah Institute of Technology, India)
12:00	**Sustainable Land Cover Classification Using Multidimensional CNN on Hyperspectral Imagery** Aravinth J (Amrita Vishwa Vidyapeetham, India); Chanthanaguru S, Gurudev R N and Gokul M (Amrita School of Engineering, Coimbatore, India)
12:15	**Semantic-Guided Trajectory Prediction and Safe-Navigation for Martian Rover** Shreya Santra (Tohoku University, Japan); Abhishek Mukhopadhyay (Amity University, India); Prithwish Dey (IIIT Kalyani, India); Pradipta Biswas (Indian Institute of Science, India)
12:30	**Action Oriented Anomaly Description in Surveillance Videos Using Modular Vision Language and Temporal Transformer Fusion** Raushan Kumar (Indian Institute of Technology Ropar, India); Bharath Ramkrishna (Defence Institute of Advanced Technology, India)

Sunday, July 19 | Tulip | 13:30 - 15:45 Hrs

S15: WLTD-1 | Women-Led Technology Developments

Chairs: Meena Mishra (SSPL, Timarpur, India), Usha P Verma (DRDO INDIA & NIT Warangal, India)

13:30	**A Compact Low-Cost Rectenna Design for Energy Harvesting in Low-Power IoT Devices** Anushka Jariya, Boddapalli Rithvik and Boinapally Ruthvik (IIIT Nagpur, India); Gopinath Samanta (The LNM Institute of Information Technology, India); Shankar Bhattacharjee (IIIT Nagpur & IIEST Shibpur, India)
13:45	**Intelligent Control of Reconfigurable Intelligent Surfaces for SNR Enhancement: A DRL Versus Federated Learning Approach** Jyothishree Pillai, Gayatri Sakya and Monika Malik (JSS University, India)
14:00	**Performance Analysis of a Conformal Patch Antenna Using Machine Learning Approach** Gayatri Routhu (SRM University AP, India); Manas Sarkar (ISTRAC, India); Rupesh Kumar (SRM University AP, India)
14:15	**C-Fuse: A Cross-Modal Network for Real-Time EOIR Video Fusion** Deekshitha M (CMR University, India); TM Dhipu (Center of Airborne Systems, DRDO, India); Sapna (DRDO, India); R Rajesh (CABS, India)
14:30	**Reconfigurable Metasurface Array Antenna for 5G/6G Applications** Sravani Nagireddy (SRM University- AP, India); Gayatri Routhu (SRM University AP, India); Prasannakumar Seelam (SRM University, AP, India); Venkata Naga Sai Kiran Damarla (SRM University, India); Mark Clemente-Arenas (Universidad Nacional Tecnológica de Lima Sur, Peru); Rupesh Kumar (SRM University AP, India)
14:45	**Progressive Knowledge Distillation Framework for Military Vehicle Classification on Edge Devices** Kalpita Dutta, Akshar Nath Gorain, Subhadip Mondal and Sourodyuti Biswas Sanyal (Techno India University, West Bengal, India); Anindya Kumar Biswas (National Institute of Technology (NIT) Raipur, India); Nibaran Das (Jadavpur University, India)
15:00	**Lightweight 3D-Printed Dual-Band Circularly Polarized Ka-Band Feed for Dense Feed-Cluster Implementation in Payload Test Ranges** Haindavi Manigilla and Puneet K Mishra (URSC, India)
15:15	**Compact Frequency Reconfigurable Dual Element MIMO Antenna for 5G (Sub-6 GHz) and WLAN Application** Neha Dalakoti and Priyanka Jain (Delhi Technological University, India)
15:30	**A Compact Parasitic-Loaded Wearable 2×2 MIMO Antenna for ISM Band Applications** Ratna Kumari Duru (VIT-AP University, India); Prabhu kumar Kothavari and Venkata Ratnam T (VIT-AP, India)

Sunday, July 19 | Poinsettia 1 | 13:30 - 15:45 Hrs

S16: AIMLT-V | AI/ML Technologies

Chairs: Ravi Hosamani (SECAB Institute of Engineering & Technology, India & VTU, Belgaum, India), R Rajesh (CABS, India)

13:30	**Edge-AI Based Vision-Guided Robotic Stacking: A Comparative Implementation of HSV Segmentation and YOLOv8 OBB for Robotic Object Detection and Orientation Estimation with Constraints** Hrishikesh Gupta, Priya, Jogesh S Nanda and Abhra Roy Chowdhury (Indian Institute of Science Bangalore)
13:45	**A High-Cadence Magnetogram Time-Series Dataset for Solar Active Regions** Ashwini Nagaraj Shenoy (National Institute of Technology Karnataka, India); Adithya H N (Manipal University, India); Deepu Vijayasenan (Associate Professor, India); Sreejith Padinhatteeri (Manipal University, India); Raghavendra B S (National Institute of Technology Karnataka, India)
14:00	**Robust and Explainable Edge AI for Aerospace Telemetry: A Hardware-Aware Deterministic Approach** Mankirat Kaur and Hayat Hussain Reshi (Guru Tegh Bahadur Institute of Technology, India); Gurmeet Singh (Gtbit, India)
14:15	**MLight-RA: GNSS-Less Random Access for Massive IoT in 6G LEO Satellite Networks** Udit Ganguly (BPUT, India)
14:30	**DDV-GNet: High-Throughput Defect Detection for Space Manufacturing via Deep Delta Gated Networks** Latchan Chhetri (Sikkim Manipal University of Health, Medical and Technological Sciences, India); Aman Kumar (Sikkim Manipal Institute of Technology, Sikkim Manipal University)
14:45	**Predictive Recovery: A Dual-Phase Architecture for GNSS-Denied Navigation and Risk Assessment** Dhruv R Pankhania, Shlok N Mehta, Yashasvi A Gupta, Shailesh Nikam, Grishma Sharma and Kaustubh Kulkarni (Somaiya Vidyavihar University, India)
15:00	**Intelligent Radiation Fault Mitigation in Spacecraft Sensors Using Data-Driven Neural Networks** Abhishek Sanjay Devarushi (Jain College of Engineering Belagavi, India); Radhika Kiran Lohar (Jain College of engineering, Belagavi, India); Muskan Abdul Latif Dhalayat and Krupa Gargatti Rasane (Jain College of Engineering, Belagavi, India)
15:15	**MAITRI: A Multimodal AI System for Psychological and Physical Well-Being of Astronauts** Manmeet Manjeet Santre, Ayush Ankur Shevde, Anvit Sachin Panhalkar, Nihar Rajendra Bapat and Shreesh Atul Jugade (Pune Institute of Computer Technology, India)
15:30	**A Composite Loss Function Approach to Improve CNN Based Satellite Image Denoising Performance** Debopam Hait (Indian Institute of Technology, Kharagpur, India); Indranil Misra (Space Applications Centre, ISRO, India); S Manthira Moorthi and Debajyoti Dhar (Space Applications Centre ISRO, India)

Sunday, July 19 | Heliconia 1 | 13:30 - 15:45 Hrs

S18: PE-I | Power / Energy / Power Electronics

Chairs: Srinivasan M S (URSC, India), Olive Ray (Indian Institute of Technology Bhubaneswar, India)

13:30	**Amur Falcon Migration Optimized Pole-LQR Control Design for Active Magnetic Bearings** Debarghya Dutta (National Institute of Technology Mizoram, India); Pabitra Biswas (Asansol Engineering College, Asansol, India)
13:45	**Designing of a Low Dropout Voltage Regulator by Using the Novel Digitally Assisted Calibration Technique** Praveen Hunasigidad and Nagaveni S (IIT Dharwad, India)
14:00	**Next-Generation Integrated Planar Magnetics in Aerospace Power Conversion** Rupan Sarkar, Durgaprasad Valluri, Priyanka H and Alladi Pranay Kumar (Collins Aerospace, India)
14:15	**Split Resistor Synergetic MPPT Algorithm for High-Altitude Solar-Powered UAVs** Saranya Mukherjee and Subhojoy Pal (University of Calcutta, India); Sankar Mukherjee (India)
14:30	**Control Strategies for Active Capacitor Circuits Used in Pulse Power Buffers for Radar Systems** Kausik Biswas (IIT Bhubaneswar, India); Ritankar Kumar and Olive Ray (Indian Institute of Technology Bhubaneswar, India)
14:45	**Types of Ionic Thruster and Aerospace Applications** Abhijith M Naik and Bindu S (Manipal Institute of Technology , Manipal Academy of Higher Education, Manipal, India)
15:00	**An Overview of Systematic Screening and Batch Classification for Lithium-Ion Battery Pack in CubeSat Power Systems: An Analysis on NCR18650B and INR21700M50T Cells** Babu Vishwanath Hemath Kumar, Kitamura Kentaro and Necmi Cihan Orger (Space Systems Engineering Kyushu Institute of Technology, Sensuicho Tobata Ward Kitakyushu city, Fukuoka, Japan)
15:15	**Design of Wireless Umbilical for Small Payloads-1** Muralidhar Saripalli and Suresh Babu Bezavada (DRDO, India)
15:30	**An Improved Algorithm for Fast Cell Balancing via Single-Cell to Multi-Cell Energy Sharing** Anupama R Itagi and Chandrashekhar Rudrappa Angadi (KLE Technological University, India); Rakhee Kallimani (KLE Technological University Dr M S Sheshgiri Campus, Belagavi, India); Krishna Pai (India)

Sunday, July 19 | Heliconia 2 | 13:30 - 15:45 Hrs

S19: ESLPA | Embedded Systems/LNA/Power Amplifier

Chairs: Ajay Andhiwal (UR Rao Satellite Centre, ISRO, India), Sandeep K Chaturvedi (GAETEC, India)

13:30	**Broadband Phase-Tunable Analog Predistorter for Sustainable Power Amplifiers** Gatte Srikanth and Meenakshi Rawat (Indian Institute of Technology Roorkee, India)
13:45	**Thermal Profile Regulation Scheme for RF Power Amplifier for Radar Applications** Prakhar Vaish (Bharati Vidyapeeth Deemed University, India); Samraddhi Soni (India); Yogesh Balaso Mandake (Bharati Vidyapeeth College of Engineering Pune, India); A A Bazil Raj (Defense Institute of Advanced Technology, India)
14:00	**S-Band Power Amplifier Design Utilizing Non-Linearity of Device Output Capacitance in Extended Continuous Class-F Mode** Kamini Singh (Indian Institute of Technology, Roorkee, India & IITR, India); Ganesh Bargaje, Tarun Kumar Suretia and Karun Rawat (Indian Institute of Technology Roorkee, India)
14:15	**Memory-Cross Terms Guided Neural Networks for Efficient Digital Predistortion of Power Amplifiers** Manir Ahmed (Indian Institute of Technology Roorkee, India); Dusari Nageswara Rao (Indian Institute of Technology, Roorkee, India); Meenakshi Rawat (Indian Institute of Technology Roorkee, India); Gopal Agarwal and Nawaj Shikalgar (Bhabha Atomic Research Centre, Mumbai, India); Sushil Bahuguna (Bhabha Atomic Research Centre, India)
14:30	**Impact of MIMO Transmitter Distortions and Scaling with System Level Solutions on Communication Performance** Aditya Kumar (Indian Institute of Technology, Roorkee, India); Meenakshi Rawat (Indian Institute of Technology Roorkee, India)
14:45	**Radiation-Tolerant GeSbTe-Based Phase-Change Memory Devices for Space Applications** Amogh G Prasad and Anjana Mohandas (National Institute of Technology Calicut, India); Arjunan M S (National Instutute of Technology, India); Suja Kj (NIT, Calicut, India)
15:00	**16-Gb/s PAM-4 CML Serial Transmitter for Satellite on-Board Data Handling Systems** Sahil Bisht and Nagaveni S (IIT Dharwad, India)
15:15	**Mitigating the Effect of Hardware Trojans in Target Tracking Critical Subsystems at Pre-Silicon Stage** C. V. Sivasundar and Nathin MS (Amrita Vishwa Vidyapeetham, India); Mohankumar N (Amrita School of Engineering Coimbatore, India & Amrita Vishwa Vidyapeetham, India)
15:30	**Single-Event Upset Analysis of a Source Gated Thin-Film Transistors Under Heavy-Ion Irradiation** Aditya Maithani, Nitin Chandravanshi, Kunal Kaushik and Shabnam Thakur (PEC Chandigarh, India); Jyoti Kedia and Deepak Sharma (Punjab Engineering College, India)

Sunday, July 19 | Hibiscus 1 | 13:30 - 15:45 Hrs

S20: MORS-I | Microwave/Optical Remote Sensing

Chair: Durga Rao (Indian Space Research Organisation, India)

13:30	**Evaluating Spectral Inputs, Cross-Region Generalization and Interpretability for Robust Land Cover Classification Using Deep Learning** Aditya Bhateja, Aman Vasdev and Bhumika Vij (Maharaja Surajmal Institute of Technology, India)
13:45	**Fusion of Optical and Radar Data for Flood Monitoring** Talari Charitha, Ananthula Pranavi and Charulatha S (Hindustan Institute of Technology and Science, India)
14:00	**Sparsity-Based Interpolation for mm-Wave Image Reconstruction** Pondala Venkata Ramana Murthy (SRM University, AP, India); Venkata Naga Sai Kiran Damarla (SRM University, India); Chandra Wadde (SRM University AP, India); Mark Clemente-Arenas (Universidad Nacional Tecnológica de Lima Sur, Peru); Rupesh Kumar (SRM University AP, India)
14:15	**SAR Image Formation and Processing: A Signal Processing Approach for Enhanced Reconstruction** Krishna Shashank Abburi (National Institute of Technology Rourkela, India); Subrata Maiti (National Institute of Technology, Rourkela, India)
14:30	**Unsupervised Spectral Clustering Analysis for Lunar Mineral Mapping Using Chandrayaan-2 Data** Pratham Gajjar (Nirma University, India); Anuja Nair (Nirma University, Ahmedabad, Gujarat, India); Shivani Desai (Institute of Technology Nirma University, India); Tarjni Vyas (Nirma University, India); Sudeep Tanwar (Marwadi University, India)
14:45	**An Overview of Geometric Correction and Multi Stage Enhancement of NOAA APT Satellite Imagery** Sarvesh Kumar, Rishab Singh, Nikhil Yadav, Ram Anurag, Khushwant Sehra and Diptiranjan Samantaray (University of Delhi, India)
15:00	**Automated Oil Spill Mapping with Optical Imagery Using Deep Segmentation Models** Jatin Grewal and Sowmya Kamath Shevgoor (National Institute of Technology Karnataka, Surathkal, India)
15:15	**Optical Flow-Based Atmospheric Motion Vector Estimation from INSAT-3DR: A Comparative Study of RAFT, GMA, and FlowFormer** Rutvi Jesadiya (Nirma University, India); Swati Jain (Institute of Technology & Nirma University, India); Preeti Kathiria and Usha Patel (Nirma University, India); Sanjib Deb (Space Application Center, India)

Sunday, July 19 | Hibiscus 2 | 13:30 - 15:45 Hrs

S21: RASE-I | Robotics/Automation/Sensor Electronics

Chairs: Shikha Tripathi (PES University, India), Sudarshan Tsb (PES University, Bangalore, India)

13:30	**A Stochastic AI Framework for Predicting COPD and Asthma Exacerbation Under Altered Gravitational and Atmospheric Conditions** Sumit Kumar Roy (National Institute of Technology Raipur, India); Saurabh Gupta (NIT Raipur, India); Dibakar Sahu (AIIMS Raipur, India); Hemlata Sinha (SSIPMT, India); Pankaj Jain (Symbiosis Institute of Technology, Symbiosis International (Deemed University) Pune, India)
13:45	**Visual Servoing for Low-Cost Manipulators: Design and Simulation of an Eye-in-Hand IBVS System** Lomash Relia (ABV-Iiitm Gwalior, India); Jay Kumar Vagairya (ABV-IIITM Gwalior, India); Somesh Kumar (ABV IIITM Gwalior India, India); Sandesh Jain (ABV-IIITM Gwalior, India)
14:00	**Hysteresis Compensation of an SMA-Actuated Soft Finger for Space Applications** Sandilya Tata (Amrita Vishwa Vidyapeetham, India); Rammohan S (Amrita Vishwa Vidyapeetham (Deemed University), India)
14:15	**Safe Path Planning of Robotic Manipulator Using Energy-Based Artificial Potential Field (E-APF)** Adeetya Uppal (Indian Institute of Technology, Kharagpur, India); Rakesh Kumar Sahoo (Indian Institute of Technology Kharagpur, India); Manoranjan Sinha (Indian Institute of Technology, Kharagpur, India)
14:30	**Self-Learning Model-Less Trajectory Tracking of Continuum Manipulators with Optimal Backbone Tension** Shrreya Rajneesh (Indian Institute of Technology, Kharagpur, India); Rakesh Kumar Sahoo (Indian Institute of Technology Kharagpur, India); Manoranjan Sinha (Indian Institute of Technology, Kharagpur, India)
14:45	**Design and Implementation of a Single-Axis Solar Tracking and Obstacle Detection Subsystem for Mobile Platforms** Azad G N, Ghouse Samdhani, Tarun Kumar and Syeda Maheeen Fathima (M S Ramaiah University of Applied Sciences, India); B. K. Swathi Prasad (M. S. Ramaiah University of Applied Sciences, India)
15:00	**Varying-Gain Lyapunov Guidance Vector Field for Elliptical Path Following** Ishan Phanse, Sayantan Pal and Sikha Hota (Indian Institute of Technology Kharagpur, India)
15:15	**A Unified Habitat-Integrated Autonomous Rover Framework for Structured Lunar Surface Operations** Mahimaa Prajapati, Khushboo Verma, Shavili Sharma and Sneha Sinha (ABES Institute of Technology, India)
15:30	**Mixed-Signal Verification of Level Sensing Electronics for Satellite Launch Vehicles** Aparnaa Santhosh Bindu (Saarland University, Germany); Sukrat Gupta (Indian Space Research Organisation, India); Sreedharan Pillai Sreelal (Indian Space Research Organization, India)

Sunday, July 19 | Tulip | 16:00 - 18:15 Hrs

S22: SA-II | SPACE Antennas

Chairs: Sougata Chatterjee (TIFR, India), Raghvendra Kumar Chaudhary (IIT Kanpur, India)

16:00	**Compact Triple-Band Slot-Engineered Microstrip Antenna for ISM and S-Band Aerospace Communication Applications** Deptansu Bhowmik (Vellore Institute of Technology, India); Aryan Saini (VIT University, India); Pratyush Kumar and Rajeshkumar Venkatesan (Vellore Institute of Technology, India); Dr N Rajesh N (VIT University, India)
16:15	**Wideband Flexible Microstrip Patch Antenna with Defected Ground Structure for Space Communication Systems** Ankita Harkare and Shraddha Hiranwar (Shri Ramdeobaba College of Engineering and Management, Nagpur, India); Venkata Kishore Kothapudi (Koneru Lakshmaiah Education Foundation, India); Paritosh Peshwe (Indian Institute of Information Technology Nagpur, India)
16:30	**A Slotted T Shaped Asymmetric Coplanar Waveguide Fed Microstrip Patch Antenna for Aerospace Applications** Anupjyoti Sarma (Dibrugarh University, India); Santosh Kumar Prasad (Indian Institute of Technology Patna, India); Pranjal Borah (Gauhati University, India); Ajay Kumar Verma and Reeta Devi (Dibrugarh University, India)
16:45	**Bandwidth Enhancement of High Gain Circularly Polarized Antenna for GNSS** Rachita Tripathy (Nit Rourkela, India); Situ Rani Patre (National Institute of Technology Rourkela, India)
17:00	**Microstrip Patch Leaky-Wave Antenna for Beam Scanning with Low Cross-Polarization** Ratnesh Ranjan (Department of Electronics School of Engineering and Technology Vivekananda Institute of Professional Studies - Technical); Birendra Kumar (G H Raisoni College of Engineering Nagpur, India); Mohammad Hafiez (National Institute of Technology Patna, India & Electronics and Communication, India); Jayanta Ghosh (National Institute of Technology Patna, India)
17:15	**Design and Analysis of High Effciency Reflectarray Antenna Using Square Shaped Periodic Unit Cell for SAR Applications** Kali Shreyo Ghosal and Manan Gupta (PierSight Space, India); Obulreddy Bogireddy (Piersight Space, India); Gaurav Seth (CEO, India)
17:30	**A Wideband 3-Bit High Gain Transmitarray Antenna Utilizing Polarization-Rotating Unit Cells for Ka-Band Satellite Applications** Umair Bin Farooq (Indian Institute Of Technology Jammu, India); Murtaza Waheed and Kushmanda Saurav (Indian Institute of Technology Jammu, India)
17:45	**A Compact 1×4 Wideband Printed Monopole Array with Progressive Phase-Delay Feed Network for Electronic Beam Steering** Gagandeep Singh Kang (Defense Institute of Advanced Technology, India); Ajay Prudhvi Raj Pasupula (Defence Institute of Advacned Technology, India); Kamla Prasan Ray (Defence Institute of Advanced Technolgy Pune INDIA, India & School of Radar Technolgy, India); Makkhan Singh Gurjar (Defence Institute of Advanced Technology, India)
18:00	**A 4×4 Antenna Array with Integrated Passive Phase-Delay Network for Fixed-Angle Beam Steering in X-Band Radar and Surveillance Applications** Jani Pasha Shaik, Tharun Madasu, Adithya Davara and Chilukuri Sulakshana (Vardhaman College of Engineering, India); Kukkadapu Lakshman (ICOMM Tele Limited, India)

Sunday, July 19 | Poinsettia 1 | 16:00 - 18:15 Hrs

S23: AIMLT-VII | AI/ML Technologies

Chairs: Yogananda Jeppu (The Boeing Company, India), Ramakrishnan Raman (Eaton, India)

16:00	**Predictive Detection of Vapor Lock Transitions in Spacecraft Thruster Systems Using Temporal Deep Learning** Emma Paul M (Cochin University of Science and Technology, India)
16:15	**Integrated Neural Control of Bionic Arms and Exoskeletons for Human Augmentation** Archana Nair S (Don Bosco College, India)
16:30	**Spatio-Temporal RF Fingerprint Identification in MIMO-OTFS Systems Using a Triple-Skip Convolutional Neural Network and Bidirectional LSTM** P Jeevan Reddy (B.Tech, India); Anand Kumar (Amrita School of Engineering, India)
16:45	**Autonomous Planetary Rover Navigation Using AI-Based Safe Route Planning from Satellite Imagery** Nataraj Urs H D, Rohan Baiju and Rohith P (REVA University, India); Aravind BN (Visvesvaraya Technological University, India)
17:00	**Machine Learning-Based Anomaly Detection in Satellite Telemetry Data** Santosh Kumar S, Sr and Anne Gowda A B (Sri Venkateshwara College of Engineering, India); Anughna Narayanaswamy (AMITY University, India); Sridhar T (Alliance University, India); Bharathi S H (Reva University, India); Saishree L (Sri Venkateshwara College of Engineering, India)
17:15	**Hyperspectral Image Analysis for Multi-Domain Environmental Monitoring: Spectral Indices, Machine Learning Classifiers, and Sensor Fusion Strategies** Renukadevi M N and Rajesh T M (Dayananda Sagar University, India)
17:30	**Scaling AI-Compute for Autonomous Space Missions via Neuromorphic Spiking Neural Network Accelerators: Energy Efficiency, Radiation Tolerance, and Onboard Inference at Scale** Rakesh Prakash (University of Colorado Boulder, USA)
17:45	**An Evolutionary Approach for Segmenting Photospheric Features** Dibyadeep Nandi (Dept. of Instrumentation & Electronics Engineering, Jadavpur University, India); Sourav Samanta (University Institute of Technology, West Bengal, India); Sankar Narayan Patra (Jadavpur University, India)
18:00	**Physics-Constrained Neural Retrieval of Atmospheric Thermodynamics from GNSS Radio Occultation: AROMA** Mandavi Srivastava (Jss Academy of Technical Education, Noida, India); Juhi Jain (JSS Academy of Technical Education Noida, India); Abhinav Arya and Adwitiya Rai (JSS Academy of Technical Education, Noida, India)

Sunday, July 19 | Poinsettia 2 | 16:00 - 18:15 Hrs

S24: CubeSat

Chairs: Sudarshan Patil Kulkarni (JSS Science and Technology University, Mysuru, India), Brijesh K Soni (IN-SPACe, India)

16:00	**VAYU-AI: A Low-Cost TinyML-Enabled CubeSat Platform for Real-Time Atmospheric Anomaly Detection** Chitikala Venkata Vardhan (Sri Siddhartha School of Engineering, India); Sravya Pentakota (Dr Lankapalli Bullayya College of Engineering, India); Ravi N and Rekha H (Sri Siddhartha School of Engineering, India)
16:15	**Design, Analysis, and Flight Validation of a Dual-Stage Deployment Mechanism for CanSat Descent Control** Prashantha Kumar (Dayananda Sagar University, India); Krish Agrawal (DSU, India); Sripad Kulkarni, Nagaraja R, Srilaxmi Shenoy, Khyati Choubey, Charan Raj and Pramath Gopal Bhat (Dayananda Sagar University, India); Jaiman Khandelwal (DSU, India)
16:30	**Dual-Microcontroller Flight Computer Architecture for Low-Cost Can-Satellite Mission Systems** Devanathan M, Jayasheel Vinay J, Akshay Ajit Bhawar, K P R B Revanth Sriraj, Srinidhi M, Chirag Sharma, Eshan Karthik and Sanika V H (REVA University, India)
16:45	**TDMA-Based Communication Protocol Stack for CanSat Missions Using LoRa Transceivers** Devanathan M and Jayasheel Vinay J (REVA University, India)
17:00	**Orbital Station-Keeping of VLEO CubeSat Using ANFIS-Activated Sliding Mode Controller** Vishwas Jajpura (Indian Institute of Technology, Kharagpur, India); Rakesh Kumar Sahoo (Indian Institute of Technology Kharagpur, India); Ranjay Singh (IIT KGP, India)
17:15	**Linear Quadratic Regulator Design for 3U CubeSat Attitude Determination and Control System: Modeling, Design, and Simulation** Nawin S (Hindustan Institute of Technology and Sciences, India); Inbisat Yousuf (Mission Design and Flight Dynamics HRAD Technologies Pvt. Ltd, India); G N V Prasad, Prashantha Kumar, Divyashree H b and Charan Raj (Dayananda Sagar University, India)
17:30	**Design and Implementation of a Dual-Stage Descent CanSat with Active Mechanical Gyro-Stabilization** Dhanush Dattatraya Salunke, Siya Patil, Sanketh Sukirthi B R, Sohan C M, Keshav Bajpai, Sanujit Acharya and Mohammed Faisal I (BMS College of Engineering, India); Dr HN Suma (BMSCE, India)
17:45	**Micrometeoroid Impact Risk and Passive Protection Strategies for CubeSats in Low Lunar Orbit** Ying Liao (National Taipei University of Technology, Taiwan); Ian-Lin Lai (Graduate Institute of Astronomy, National Central University, Taiwan); Kang-Shian Pan (Academia Sinica, Taiwan); Yi-Hsuan Li (National Tsing Hua University, Taiwan); Inbisat Yousuf Nath (Central University of Kashmir, India); Nikhil Riyaz (Systems Engineering HRAD Technologies Pvt. Ltd Bengaluru, India)
18:00	**Satellite Decay Risk Prediction Using Synthetic Orbital Data and an Automated Machine Learning Pipeline with SHAP Explainability** Ramakumar Bommisetty (Dayananda Sagar University, India); Kishore Kumar D (NOVA Uniuversity, Portugal); Bondu Venkateswarlu and Mathew Chacko (Dayananda Sagar University, India); Hareesha N G (Dayananda Sagar College of Engineering, India); Pavani Cherukuru (Dayananda Sagar Academy of Technology and Management, India)

Sunday, July 19 | Heliconia 1 | 16:00 - 18:15 Hrs

S25: COMNET-I

Chairs: Neelavathy M (URSC, India), Anindya Saha (Tejas Networks, India)

16:00	**Behaviour-Aware Hybrid Architecture for Trust-Driven Transmissions** Dhrumil Bhatt and Anakha Kurup (Manipal Institute of Technology, India)
16:15	**A Multi-Focal Active RIS Approach to Resilient Blind-Spot Connectivity in Dual-Use V2V Networks** Vivek Kumar Kandikuppa and Jaya Lakshmi Maruri (RGUKT Nuzvid, India); Vinod Babu Pusuluri (RGUKT, India & JNTU Kakinada & RGUKT Nuzvid, India); Harshasri Kanakavalli (NIT Tiruchirapalli, India)
16:30	**From Design to Deorbit: A Solar-Electric Autonomous Module for Multi-Debris Remediation** Om Mishra and Jayesh V Patil (Indian Institute of Information Technology Dharwad, India); Sathwik Narkedimilli (National University of Singapore, India); G Srikantha Sharma (Hindustan Aeronautics Limited (HAL), India); Ananda S (UR Rao Satellite Centre, India); Manjunath K V (Indian Institute of Information Technology Dharwad, India)
16:45	**Authentication-Embedded Phase-Coded Waveforms for Spoofing-Resilient Coherent Detection** Anandaselvakarthik T (Amrita Vishwa Vidyapeetham (Deemed University), India); Gandhiraj R (Amrita Vishwa Vidyapeetham, India); Shanmugha Sundaram G A (Amrita Vishwa Vidyapeetham University & SIERS Research Laboratory, India); Rajagopalan Thiruvengadathan (Southern Utah University Cedar City Uta, USA)
17:00	**Anticipatory Handover Management in LEO Networks Using Physics-Guided Prediction and Digital Twin Validation** N Ramkumar (SRM, Trichy, India); Arun Kumar Sivakumar (IIIT-Allahabad, India); M Saravanan (Ericsson Research India & Ericsson Global India Private Limited, India)
17:15	**An anti-Spoofing GNSS Receiver Architecture Using Spatial Discrimination and Kalman Based Position Filtering** Menakadevi N and Gandhiraj R (Amrita Vishwa Vidyapeetham, India); Shanmugha Sundaram G A (Amrita Vishwa Vidyapeetham University & SIERS Research Laboratory, India)
17:30	**Inter-Satellite Laser Communication Using Debnary-Based Non-Binary Encoding with Experimental Validation** Progyadipta Naskar, Nrusingha Charan Pradhan and Paramesha P (Central University of Karnataka, India); Debikanta Naskar (Vedaleo, India)
17:45	**Elevation-Aware Adaptive Power Control for SWaP-Constrained LEO Satellite FSO Links** Sanusi koko Rabiu (Lovely Professional University, Punjab, India); Rajan Miglani (Lovely Professional University, India)
18:00	**Secure Infrastructure-Assisted V2X for Terrain-Induced NLOS ADAS/AV Operations** Guru Prasad S K, Karthikeyan T and Bhanu Prakash C (Amrita Vishwa Vidyapeetham, India); Shanmugha Sundaram G A (Amrita Vishwa Vidyapeetham University & SIERS Research Laboratory, India)

Sunday, July 19 | Heliconia 2 | 16:00 - 18:15 Hrs

S26: EEESW | EMI/EMC/ESD/Space Weather

Chairs: Mohammad Jaleel Akhtar (Indian Institute of Technology Kanpur, India), DC Pande (Electronics and Radar Development Establishmnet, India)

16:00	**Case Studies of Gannon Geomagnetic Storm on Space Environment and Space System** Soumek Pattnaik (Indian Institute of Technology Kanpur (IIT Kanpur), India); Soumyabrata Chakrabarty (IIT Kanpur & Space Applications Centre, ISRO, Ahmedabad, India); Rajat Acharya (ISRO, India); Puneet K Mishra (URSC, India)
16:15	**TID Effects on 22-nm HfO2-Based FDSOI Ferroelectric FET: MW & Vth Perspective** Dorathy Sylvia and S R Sriram (Anna University, India); Kumar Pradhan (Indian Institute of Information Technology Design and Manufacturing Kancheepuram, India)
16:30	**Ionospheric Effects on GPS Positioning: A Comparative Analysis of Single and Precise Point Positioning** Archa P. Lal (College of Engineering Trivandrum, India & APJ Abdul Kalam Technological University, India); Thejasree T K (College of Engineering Trivandrum, India); Althaf A (Oregano State University, USA); Sreeja S (College of Engineering Trivandrum Kerala, India); Hem Raj Sahu (Satellite Application Centre, ISRO, India); Durga Digdarsini (Space Applications Centre, ISRO, India)
16:45	**Lessons Learned in Shielding Effectiveness Testing: Recommended Pre-Test Practices and Case Studies** Sumit Tomar (NIT Delhi, India & DRDO, India); Manoj Kumawat (National Institute of Technology Delhi, India); Vivek Shrivastava (NIT Uttarakhand, India); Shyam Prakash (National Institute of Technology Delhi, India)
17:00	**A Systematic Benchmarking Study of Classical and Quantum Machine Learning Approaches for Black Hole Mass Estimation in Type-2 AGNs** Sathwik Narkedimilli (National University of Singapore, India); Satvik Raghav (Amrita School of Engineering, India); Manish Modani (NVIDIA Pune, India); Aswath Babu H (IIIT Dharwad, India); Joel J. P. C. Rodrigues (Senac Fac of Ceará, Brazil); Pranith Reddy Sankepally (JNTUH, India); Sai Prashanth Mallellu and Rajanikanth Aluvalu (Symbiosis International University, India)
17:15	**Real-Time Tuning for RF Domain Self Interference Cancellation in Full-Duplex Radio** B Shashank Yadav (Indian Institute of Technology, Hyderabad, India); Prashant D Desai and M Vikranth (IIT Hyderabad, India); Jaya Mishra (Defence Electronics Applications Laboratory & Indian Institute of Technology Roorkee, India); Manmohan Singh Butola (DEAL, DRDO, Dehradun, India); Abhishek Kumar (IIT Hyderabad, India)
17:30	**GAN-Based Intelligent Jamming and Neural anti-Jamming in Wireless Image Transmission** E. Lakshmi Chetan (Amrita Vishwa Vidyapeetham, Amaravati, India); P Jeevan Reddy (B.Tech, India); Anand Kumar (Amrita School of Engineering, India)
17:45	**RAISE: A Low-Frequency Space-Based Payload for Solar Radio and RFI Measurements on the SMiLE Mission** Sangeetha A (Indian Institute of Technology, Indore, India); Harsha Avinash Tanti (Physical Research Laboratory, India); Abhirup Datta (Indian Institute of Technology Indore, India); Anshu Kumari (Physical Research Laboratory, India); Rajesh Mungasaji Bodade (Military College of Telecommunication Engineering, India)
18:00	**Design and Analysis of High Bandwidth Four Element MIMO Antenna for S-Band Ground Station Space Communication Applications** Shabnam R. Quadri (Shri Ramdeobaba College of Engineering and Management, Nagpur, India); Chandra Vijay Bharati (VNIT, Nagpur, India); Ashwin Kothari (VNIT NAgpur, India)

Sunday, July 19 | Hibiscus 1 | 16:00 - 18:15 Hrs

S27: GS | Gyros/Sensors

Chair: Radhakant Padhi (Indian Institute of Science, Bangalore, India)

16:00	**Model-Based Kalman Filtering for Analytical Redundancy in Angle-of-Attack Fault Mitigation of Gain-Scheduled Flight Control Systems** V.m. Karthikayan, Pranav Subramanian and R.k. Satpathy (Defence Institute of Advanced Technology, India)
16:15	**Attitude Determination of Tumbling Spacecraft Using Deep Learning Techniques** Shriya Sandilya (Indira Gandhi Delhi Technical University for Women, India); Bijoy Kumar Dai (ISTRAC, India & Jadavpur University, India)
16:30	**A Fault-Tolerant EKF Framework for Angle-of Attack Sensors: Longitudinal Robustness and 3D Operational Limits** V.m. Karthikayan, Pranav Subramanian and R.k. Satpathy (Defence Institute of Advanced Technology, India)
16:45	**Error-State Visual-Inertial SLAM with Robust GNSS Re-Initialization for Autonomous Cislunar Transfer Navigation** Aaron Abhilash, Neha BN and Raja Munusamy (Alliance University, India)
17:00	**Programmable-Gain-Based Linearizing Readout Circuit for Thermistor Temperature Measurement** Safeer S S (Indian Institute of Space Science and Technology (IIST), India); Chandrika Sreekantan Anoop (Indian Institute of Space Science and Technology, India); Radhika V n (ISRO INERTIAL SYSTEMS UNIT, India)
17:15	**A Hybrid Gain Wide-Range Digitizer for Current-Output Sensors in Space Applications** Sreehari Balachandran Nair (Indian Institute of Technology Madras, India); Sreeraj G Nair, Ishfaq Ahmed Naushad and Chandrika Sreekantan Anoop (Indian Institute of Space Science and Technology, India)
17:30	**Robotic Swarm with Independent Selection of Master-Slave Configurations** Dhruva Shaw (Creative Net, India)
17:45	**Implementation and Performance Analysis of an EKF-Based Multi-Sensor Fusion Framework with Constraints for Precision Robotic Material Handling in Indoor Dynamic Environments** Pradum Pal (Indian Institute of Science, India); Miduthur Venkata Naga Sai Manjusha (Indian Institute of Science, Bengaluru, India); Abhra Roy Chowdhury (Indian Institute of Science Bangalore, India)
18:00	**RCS-Based Classification of Aerospace Targets Using Physics-Informed Machine Learning** Surbhi Arora (IIT Bombay, India)

Sunday, July 19 | Hibiscus 2 | 16:00 - 18:15 Hrs	
S28: AITC -I | Assembly, Integration & Testing / Checkout **Chairs:** Raghavendra Mr (ISTRAC, ISRO, India), Renuka R (URSC, Bangalore, India)	
16:00	**Design, Simulation, and Experimental Validation of a Two Stage Subscale Rocket Using Integrated Flight Testing** Shreyash Raut, Sarthak Salunke and Dinesh Kumar Bajaj (MIT ADT University, India)
16:15	**AI-Based Cost-Sensitive Engine Fault Detection with Confidence-Guided Maintenance Decision Support** Aryan Chunduru, Swayam Dayanand Malakasamudr and Karthik Vel (RV College of Engineering, India)
16:30	**CFD-Based Thermal Evaluation of a Compact Monolithic Mission Rack for Airborne Surveillance Aircraft** Sanjay Thilakan (Center for Airborne Systems, Defence R&D Organisation, India); Bhavish Kumar (Defence R&D Organisation & Min of Defence, Government of India, India); Jadi Chandrakumar (CABS, India); Ramkumar Raghu (Defence Research and Development Organization, India & Indian Institute of Science, India); R Rajesh (CABS, India)
16:45	**Conceptual Design of an Orbital Defense Platform for Strategic Offense and Missile Interception** Anusha S, Atluri Sri Harshith, Nandhikha D, Pranav P Bayari and Pranav Raagul S (Amrita School of Engineering, Coimbatore, India); Rajesh Senthil Kumar T (Amrita Vishwa Vidhyapeetham, India); Ramitha G and Varun K (Amrita School of Engineering, Coimbatore, India)
17:00	**Down-Link Optimization for Pinching Antenna Assisted NOMA Communication Network with Assured Minimum Data Rate** Jay Manthapurwar (VNIT, Nagpur, India); Raj Kumar Thenua (IIT Bombay, India); Abhay Gandhi (Visvesvaraya National Institute of Technology, Nagpur, India)
17:15	**Development of the Instrumentation Architecture for a Planar Spacecraft Proximity Operations Testbed** Nitika Jaggi (Indian Institute of Technology Kanpur, India); Pavan Verma (IIT Kanpur, India); Kiran Das (IIT KANPUR, India); Sayandev Som (VIT Bhopal University, India); Arun Mahodaya (Research Centre Imarat, India); Dipak Kumar Giri (IIT KANPUR, India)
17:30	**Design and Implementation of Antenna Positioning System Using ESP32** Rashmi Priyadarshini B K, Mrinal Sarvagya, Punith Kumar D H, Jyothy ST and Marisetty Nehasree (School of Electronics and Communication Engineering, REVA University, Bengaluru, India)
17:45	**Experimental Demonstration of Integrated Sensing and Communication in n78 Band** Devarakonda Manasa (VNIT, Nagpur, India)
18:00	**Mission Systems Power Supplies Implementation Challenges in the Ground Test Facility** Rajiv Kumar (CABS, Defence Research & Development Establishment, India); Ramesh R (Defence Research & Development Establishment, India); Anand Kumar C S and Ranganayukulu M (Government, India)

DAY 01 | JULY 20, 2026 (MONDAY)

Monday, July 20 | Amaryllis | 08:00 - 10:00 Hrs

S29: AITC-II | Assembly, Integration & Testing / Checkout

Chairs: Anjani Srilaxmi (URSC, India), Hariharan VK (Dayananda Sagar University, India)

8:00	**Payload Interface Architectures for High Power and High Throughput Satellites** Karri V R Dinesh Kumar Reddy (URSC & UR Rao Satellite Center, India); Suneeta V and Kraleti Chandrasekharam (URSC, India); MD. Tosicul Wara (UR Rao Satellite Center, Indian Space Research Organisation, India); Anjani Srilaxmi (URSC, India)
8:15	**Arria-V FPGA Implementation of a Battery-Operated TTCP System for Chandrayaan-3 Special Tests** Suresh Kumar Venkataramanappa (Indian Space Research Organization & Department of Electronic Systems Engineering, Indian Institute of Science, India); Vijayshree Gopal (UR Rao Satellite Centre, Indian Space Research Organisation, India); Unnikrishnan P and Suma Umesh (URSC, India)
8:30	**Challenges in Integration and Testing of Avionics System of Systems on Rig** Anand Kumar C S (Government, India); Arjun Singh (CABS, DRDO, India); B Naresh Kumar and Ranganayukulu M (Government, India)
8:45	**Design and Implementation of a Reconfigurable FPGA Based Blanking System for RF Applications** Dhayanithi G (Centre for Airborne Systems (CABS), India & Defence Research & Development Organisation, India); S Mullai Venthan and Elapa Gokul (Amrita Vishwa Vidyapeetham, Bengaluru, India); Theertham Dheeraj (Amrita Vishwa Vidyapeetham, India); Nekkalapu Harichand and Rahul Varma Dommaraju (Amrita Vishwa Vidyapeetham, Bengaluru, India)
9:00	**A Closed-Loop Self Protection Suite (SPS) Test Simulator with AI-Based Path Loss Modeling** Ravindra Kumar Bind, Praveen MV and Nejimol Ahammed Kutty (DRDO, India)
9:15	**Design Guideline for QFN Lead Width and Lead Length Based on DFM (Design for Manufacturing)** Prasanna Kumar Vishwanathan (TATA Semiconductor Assembly & Test Pvt. Ltd., India); Hari Chandhana Varma M (TATA Semiconductors Assembly & Test Pvt. Ltd., India); Revada Lakshmi Aparna (TATA Semiconductor Assembly & Test Pvt. Ltd., India)
9:30	**Optimized Relay Configuration for Pyro System in a Launch Vehicle** Arundev V, Anirudh Saripalli and Jessy P Mathew (Indian Space Research Organisation, India); Sreedharan Pillai Sreelal (Indian Space Research Organization, India)
9:45	**Analysis of Various Configurations for Measurement of High Voltage Batteries in Launch Vehicle** Dhana Ganesh Urlankala (Vikram Sarabhai Space Centre, India & Indian Space Research Organisation, India); Anmol Agarwal (Vikram Sarabhai Space Centre, VSSC, ISRO, India); Arumalla Prasanth Reddy (Vikram Sarabhai Space Center, ISRO, India); Nayana S Kumar (Vikram Sarabhai Space Centre, India); Kakani Veeraraghavaiah (ISRO, India); Murali G (Vikram Sarabhai Space Centre, India)

Monday, July 20 | Petunia | 08:00 - 10:00 Hrs

S30: AMSS-I | Advances in Measurements for SPACE Systems

Chairs: Lars Foged (Microwave Vision Italy, Italy), Ashwin Kothari (VNIT NAgpur, India)

8:00	**Need for a Large Size CATF Quiet Zone: A Lesson from Multi-Beam Satellite Payload Characterization** Puneet K Mishra (URSC, India); Satish Bandlamudi and Sasikanta Kumar (URSC Bangalore, India); Renuka R (URSC, Bangalore, India); Sri Niwas Sahu and Pramod V. B. (UR Rao Satellite Centre, India); RV Nadagouda (Indian Space Research Organisation, India)
8:15	**SPI Protocol Enhancement Using Bit and Byte Pipelining in Verilog HDL** Rashmi Priyadarshini B K (REVA University, India); Mrinal Sarvagya and Punith Kumar D H (Reva University, India); Jyothy ST (REVA University, India); Chethan T S (REVA University, Bengaluru, India)
8:30	**An Environment Transition Aware Kalman Filter for Improving NavIC Positioning Accuracy** Nikita Kumari (Dhirubhai Ambani University); Kalyan Sasidhar (DAIICT, India)
8:45	**Wide Band Phase Calibration for Multi-Channel X-Band SAR Test Interface** Chittaranjan Swain and Deepthi VD (CABS DRDO, India); Jayaprakash K P (CABS, DRDO, India); A S Kumaran (CABS DRDO, India); Santhya P (CABS, India)
9:00	**Microwave Non-Destructive Thickness Sensing of Thermal Barrier Coatings on CFRP Using an Asymmetric SRR Embedded in a Rectangular Waveguide** Shankar Aenagandula, Rishendar Singh Bondali and Varsha Kotha (Visvesvaraya National Institute of Technology Nagpur, India); Neeraj Rao (Visvesvaraya National Institute of Technology Nagpur, Maharashtra & Ministry of Human Resource and Development, India)
9:15	**A Space Telemetry-Compliant Digitizing Converter Optimized for Conversion Speed and Linearity** Sajeev R (Vikram Sarabhai Space Centre, India); Chandrika Sreekantan Anoop (Indian Institute of Space Science and Technology, India); Roy Thankachan (ISRO, India)
9:30	**Microwave Resonator Sensor for Accurate Non-Destructive Thickness Measurement of Dielectric Coatings on CFRP Structures** Shankar Aenagandula and Tannu Anand Ramteke (Visvesvaraya National Institute of Technology Nagpur, India); Neeraj Rao (Visvesvaraya National Institute of Technology Nagpur, Maharashtra & Ministry of Human Resource and Development, India)
9:45	**Highly Accurate Spacecraft Transmitter Frequency Estimation from Doppler Tracking Measurements Using Batch Least Squares and Kalman Filtering** Bijoy Kumar Dai (ISTRAC, India & Jadavpur University, India); Sheli Sinha Chaudhuri (Jadavpur University, India)

Monday, July 20 | Scarlet 1 | 08:00 - 10:00 Hrs

S31: RT-I | Radar Technology

Chair: Dhananjay Ramachandra Jahagirdar (Defence Research and Development Organisation, India)

8:00	**Design of a Compact Rectangular Slot Loaded Vivaldi Antenna for Ultra-Wideband Applications in C, X, and Ku Bands** Parna Roy and Rishav Nandi (Institute of Engineering and Management, India); Rajdev Pal (Institute of Engineering and Management, Kolkata, India); Soham Banerjee (IEMK, India); Anup De (Institute of Engineering and Management, Kolkata, India); Malay Gangopadhyaya (University of Engineering and Management, Kolkata, India); Sayan Sarkar (Institute of Engineering and Management (IEM), India); Gobinda Sen (Institute of Engineering & Management, Kolkata, West Bengal & UEM, Kolkata, India)
8:15	**Spatial-Temporal Convolution Network Based Aircraft Recognition and Radar Attribute Extraction from ISAR Imagery** Prodyumna Pal (Gati Shakti Vishwavidyalaya, India)
8:30	**Beyond-Barrier Vital-Sign Sensing Using mmWave FMCW Radar for Search and Rescue Applications** Surya Prakash G (SRM University, AP, India); Venkata Naga Sai Kiran Damarla (SRM University, India); Samarendra Nath Sur (Sikkim Manipal Institute of Technology, India); Rupesh Kumar (SRM University AP, India)
8:45	**A Compact Two-Element Ultra-Wideband MIMO Antenna for Radar Applications** Anushka Sharma (Manipal University Jaipur, India); Rajesh K Singh (Defence Institute of Advanced Technology, India)
9:00	**Strategies for Efficient Image Reconstruction Using mm-Wave MIMO Radar** Sherry Gomez and Arnab Karmakar (Bharat Electronics Limited, India); Nagendra Kumar (Public Sector unit, India); Viji Paul P (Bharat Electronics, India)
9:15	**True Time Delay Filter Based Beamforming for HRR Phased Array Radars** Karamel Revati Suresh (Bharat Electronics Limited, India); Nagendra Kumar (Public Sector unit, India); Viji Paul P (Bharat Electronics, India)
9:30	**Design of High Fidelity Data Level Generic Target Simulator for Validation of Phased Array Radars** Taniza Roy and Avijit Das (Sc F, India); Jang Bahadur Singh (SC F, India); Justin Sagayaraj (Sc G, India)
9:45	**X-Band Front-End RF Subsystem for Drone Based Self-Calibrated FMCW Radar for SAR Applications** Ritam Gupta (Galaxeye Space, India); Amit Kumar (Galaxeye Space); Supraj Shrinivas and Satyam Kumar Sharma (Galaxeye Space, India); Denil Chawda (GalaxEye Space Solutions Private Limited, India); S Christopher (Galaxeye Space, India)

Monday, July 20 | Scarlet 2 | 08:00 - 10:00 Hrs

S32: Metasurfaces | Room: Scarlet2

Chairs: Somak Bhattacharyya (IIT (BHU), India), A K Singh (Centre for Airborne Systems, India)

8:00	**Automatic Design of Metasurfaces Using Conditional Generative Adversarial Networks** Vineetha Joy (CSIR-National Aerospace Laboratories, India); Anshuman Kumar and Amit Sethi (Indian Institute of Technology Bombay, India); Hema Singh (CSIR-National Aerospace Laboratories, Bangalore, India)
8:15	**Metasurface-Based Single-Layered Absorber for Sub-THz Applications** Vaigal. K and Manju Sarah Joseph (CSIR-NAL, India); Vineetha Joy (CSIR-National Aerospace Laboratories, India); Hema Singh (CSIR-National Aerospace Laboratories, Bangalore, India)
8:30	**An Incut Metasurface Based CP Antenna Using DGS Along with a CSRR for 5G Wireless Mobile Communications** Vanitha Rani Rentapalli (VIT- AP University, India); Bappadittya Roy (VIT-AP University, Amaravati, India)
8:45	**A Two-Port Circularly Polarized One-Bit Coded Metasurface Antenna for Full-Duplex Millimeter-Wave Space Communication Systems** Piyush Kumar Mishra and Debdeep Sarkar (Indian Institute of Science, India)
9:00	**Reconfigurable Varactor-Controlled Patch Metasurfaces for Beam Steering** Reshma S P, Jayaprakash K P and Sreenath Reddy Thummaluru (IIITDM Kancheepuram, India); Machavaram V. Kartikeyan (Indian Institute of Technology, Roorkee, India)
9:15	**Ultra-Wideband Optically Transparent Polarization-Insensitive Microwave Absorber** Jyoti Yadav (Indian Institute of Technology Kanpur, India); Puneet K Mishra (URSC, India); Kumar Vaibhav Srivastava (Indian Institute of Technology Kanpur, India)
9:30	**A Trident-Shaped Metasurface-Based Patch Antenna for Terahertz Applications** Shailendra Kumar Sinha (Indian Institute of Technology (BHU) Varanasi, India); Deepak Ram (IIT BHU VARANASI, India); Sougata Chatterjee (National Center for Radio Astrophysics, TIFR, India); Somak Bhattacharyya (IIT (BHU), India); Amit Kumar Singh (IIT(BHU), India)
9:45	**A KPI-Driven Analysis of PRS-Based Sensing in 5G NR ISAC Systems** Radhika P and Vani Devi M (Indian Institute of Space Science and Technology, India)

Monday, July 20 | Scarlet 3 | 08:00 - 10:00 Hrs

S33: AUT-II | Advances in UAS Technologies

Chairs: Rachana Agrawal (Indian Institute of Technology, Kanpur, India), A S Kumaran (CABS DRDO, India)

8:00	**Autonomous Landing of UAVs Using INDI Control with Ground Effect Modeling** Salahudden (Indian Institute of Technology Kanpur, India); Anirban Roy (Indian Institute of Technology, Kanpur, India)
8:15	**Incremental Nonlinear Dynamic Inversion Control of Hybrid Tiltrotor Aircraft with Asymmetric Rotor Placement** Salahudden (Indian Institute of Technology Kanpur, India); Anirban Roy (Indian Institute of Technology, Kanpur, India)
8:30	**Design and Aerodynamic Characterization of an Additively Manufactured Morphing-Camber Wing** Saylee Gharge (University of Mumbai, India); Akshata Agarwal, Dhruva Acharya and Shreyas Akmanchi (Vivekanand Education Society's Institute of Technology, Mumbai University, India)
8:45	**Self-Sustaining UAVs for Mars: Leveraging Renewable Energy and Local Resources for Extended Missions** Riddhi Malhotra, Rishika Awasthi and Dijesh Chakkalakal Dinesan (Collins Aerospace, India)
9:00	**Optimized Modular Design and Development of a Tilt-Rotor Bicopter Drone** Saideep Verma (Birla Institute of Technology and Science, India); Nimisha Tatapudi (BITS Pilani Hyderabad Campus, India); Akshay Arjun and Danwada Sharanya Sukka (Birla Institute of Technology and Science, India); Abhishek Sarkar (Birla Institute of Technology and Science Pilani, India & Hyderabad Campus, India); Joyjit Mukherjee (BITS Pilani Hyderabad Campus, India)
9:15	**Software-Defined Autonomous Resilient Architecture (SDARA) for Autonomous Systems** Samruddhi Sanjeevkumar Charapalle, Nandagopalan Venugopalan and Laveen V Sundararaj (Collins Aerospace, India)
9:30	**Quantitative Mitigation of Dynamic Stall Using Bio-Inspired Leading-Edge Protuberances Under Pitching Motion** Karthik Vel (Department of Aerospace Engineering R. V. College of Engineering Bangalore, Karnataka 560059 Ind); Nadaraja Pillai S (Sastra Deemed University, India)
9:45	**Performance Analysis of UAV-Assisted Cooperative Communication over Shadowed Kappa-Mu Fading Channel** Anandpushparaj J (IIITDM Kancheepuram, India & SRM Institute of Science and Technology, Tiruchirappalli Campus, India); Jency J (IIITDM Kancheepuram, India & 5G Wireless Research Lab, India); Mandha Damodaran Selvaraj (Indian Institute of Information Technology Design and Manufacturing Kancheepuram, India)

Monday, July 20 | Tulip | 08:00 - 10:00 Hrs

S34: SDRT | SDR Technology

Chairs: Mangal Lal Chand (DRDO, India), Raghavan Muralidharan (Tata Advanced Systems, India)

8.00-8.15	**Keynote: SDR Technologies for Strategic Applications** Dr. L C Mangal, DG(TM), DRDO
8:15	**SDR Based Dynamic Resource Allocation in Private 5G Networks** Rathinamala Vijay (ARTPARK, India); Ravi Raj Saxena (Indian Institute of Science, Bangalore, India); Rahul R, Vinay Kumar and Bharadwaj Amrutur (ARTPARK, India)
8:30	**Gaussian Log-Likelihood-Based Detection of SSDF Attacks in Cognitive Radio Networks** Nandita Louriyam (Assam University Silchar, India); Wangjam Niranjan Singh (Assam University, India)
8:45	**A Software Defined Radio Based Configurable Communication Payload Simulator for Checkout System Test & Evaluation** Sachin Gupta (ISRO, India); Abbi maniu Singh (UR Rao Satellite Centre - ISRO, India); Anjani Srilaxmi (URSC, India); Pramod V. B. (UR Rao Satellite Centre, India)
9:00	**Realization of SDR Based Telemetry and Tele-Command Processor for Satellite Ground Station** Jitendra Kumar Kapse (MCF ISRO, India); Gireesh M. (Communication Instrumentation and Baseband, MCF, India); Mudumba Ramesh (CIB, MCF, India)
9:15	**Real-Time LEO Satellite Telemetry Acquisition Using Software Defined Radio and the SatNOGS Decentralized Ground Station Network** Giridhar Reddy Karnati, Suman K, V Bala Sai Datta, G Preetham and Kishore Babu Vasanth (Chaitanya Bharathi Institute of Technology, India)
9:30	**Robust Automatic Modulation Classification in Low-SNR Environments Using Deep Learning** Arundhati V and Yash Soni (India); Pranabesh Maji (CSIR-Central Electronics Engineering Research Institute, India & Academy of Scientific and Innovative Research (AcSIR), India); Dhiraj (CSIR-Central Electronics Engineering Research Institute, CSIR-Ceeri, Pilani, India)
9:45	**A Novel Sensor-over-IP Architecture for Distributed HPEC Processing in High Bandwidth Multichannel Systems** Ankita V Jaiswal (Defence Research and Development Organization, India); Ramkumar Raghu (Defence Research and Development Organization, India & Indian Institute of Science, India); Nanditha Unnikrishnan (CABS DRDO & Defence Research Development Organization, India); Mradul Maurya (Centre for Airborne Systems - DRDO, India); R Rajesh (CABS, India)

Monday, July 20 | Poinsettia 1 | 08:00 - 10:00 Hrs

S35: CSCSIT-I | Computing/Cyber Security/IT/Software Engineering

Chairs: Dilip Kumar Dalei (DRDO, India), J K Kishore (Indian Space Resaerch Organization, India)

8:00	**Autonomous Aerial Engagement Systems: Technical Proof of Concept and Architectural Analysis** Dhruva Shaw (Creative Net, India)
8:15	**Hybrid Model for Spacecraft Launch Failure Analysis** Antar Ahnaf Zaman and Parag Kulkarni (Tokyo International University, Japan)
8:30	**Low-Latency FPGA Accelerator for BV Fully Homomorphic Encryption Using NTT/INTT** Varun Musham (Shiv Nadar Institution of Eminence, India); Amit Kumar Srivastava (BITS Pilani Hyderabad Campus, India); Rakesh Palisetty (Shiv Nadar Institution of Eminence, India); Amit Kumar Panda (BITS Pilani Hyderabad Campus, India)
8:45	**Compact ECDSA: A Navigation Message Authentication Scheme for NavIC** Veeresh R Maned and Jothi Ramalingam (National Institute of Technology Karnataka, Surathkal, India); Deval Mehta (Indian Space Research Organization, India); Pravin Patidar (Space Application Centre & Indian Space Research Organisation, India)
9:00	**Development of a Software-Based NavIC L1 SPS Signal Simulator** Nithin C Biju (BITS Pilani Goa Campus, India)
9:15	**Comparative Analysis of Conjugate Gradient Algorithms for Neural Network Based Aircraft Parameter Estimation** Challa Parvathi Rudesh (Amity University Uttar Pradesh, India); Sanjay Singh (Amity University, India); P Srinivasa Rao (Curlvee TechnoLabs, India); Yash A Gujar (Amity University, India); Faizan Akhtar (Amity University Noida Uttar Pradesh, India)
9:30	**Blockchain-Based Secure Communication Platform for Defence Personnel** Tanishq Singh Sisodiya and Subhanan Chatterjee (Symbiosis Institute of Technology, Hyderabad Campus, India); Samarth Agrawal (Symbiosis Institute of Technology, India); Sai Prashanth Mallellu and Rajanikanth Aluvalu (Symbiosis International University, India)

Monday, July 20 | Poinsettia 2 | 08:00 - 10:00 Hrs

S36: MPCNG-II | Mission Planning / Control / Navigation / Guidance

Chairs: Sudesh Kashyap (National Aerospace Laboratories, India), Sura PS (UR RAO SATELLITE CENTRE, India)

8:00	**Attitude Control of a Low L/D Re-Entry Module with Multiple Equilibrium Points Using Sliding Mode Control Law** Soumya N (Vikram Sarabhai Space Centre, India); Unnikrishnan M Narayana Pillai (IIT Bombay, India); Kapil Kumar Sharma and Asha P Nair (VSSC, India)
8:15	**Longitudinal Command Augmentation for Manned Carrier Approach** Abhilash P M, Amit Kumar Tripathi, Gaurav Kumar, Anup Goyal and Amitabh Saraf (Aeronautical Development Agency, India)
8:30	**Integrated Reaction Wheel Momentum Management During Orbit Raising Using Gimbaled Electric Propulsion** Aditya Rallapalli (Government, India & UR Rao Satellite Centre, India); Suraj Kumar, Ashok Kumar Kakula and Jithesh PV (Indian Space Research Organization, India); Bharat Kumar G V P (URSC, India); Nivriti Priyadarshini (ISRO, India)
8:45	**Performance Analysis of TDOA Based RF Emitter Geo-Location by Non Coplanar Oscillatory (NCO) Orbit Formation** Devi Prasad Panda P (DSP DRDO, India); Kalpana Bandi (DRDO, India)
9:00	**Enhanced Reliability Prediction for Adaptive Flight Displays: A Case Study in Aerospace Systems** R U Aishwarya Kopika, Aparna Balakuntla, Achala D and Kritika Shrivastava (Collins Aerospace, India)
9:15	**Mission Design Challenges and Ascent Trajectory Modeling for Space Launch Vehicles** Rajesh Muneshwar (Director, Vihaan Spacetech Pvt Ltd, Nagpur, India); Jyoti More (Fr. C. Rodrigues Institute of Technology, India)
9:30	**Multi Constellation, Multi-Frequency Real-Time NavIC-GPS RF Signal Simulator** Bhanu Panjwani (Indian Space Research Organization, India); Mohanchur Sarkar (Space Application Centre (ISRO) Ahmedabad, India)

Monday, July 20 | Heliconia 1 | 08:00 - 10:00 Hrs

S37: CSCSIT-II | Computing/Cyber Security/IT/Software Engineering

Chairs: Rajiv Chetwani (ISRO, India), Debabrata Das (International Institute of Information Technology - Bangalore, India)

8:00	**Next Generation Airborne Video Systems Architecture** Mahadevanna Shreshthi, Divyasree Nuthalapati, Vishal Kannan Ram and Sreeja Pittala (Collins Aerospace, India)
8:15	**QSPI Controller for SPI Serial Memory and Inter-Chip Communication** Nimmy Joseph, Rizwana Aziz M P, Joji Daniel and Padmakumar K (Vikram Sarabhai Space Centre, ISRO)
8:30	**Transformer vs. CNN for SPECK32/64 Cryptanalysis** Shruti Rawal (Scientific Analysis Group (SAG) DRDO, India); Sneha Pandey and Rajesh Asthana (Scientific Analysis Group (SAG) DRDO Delhi, India)
8:45	**Semantic Compression & Transmission of Visual Data in Space Vehicle Systems** Rushali Rajesh and Dilip Krishnaswamy (Centre for Development of Telematics, India)
9:00	**Secure Outsourcing of k-NN and Range Queries over Vector Spatial Data Using Cayley Transformation** Anagha Aher (A. P. Shah Institute of Technology, India); Sangita Chaudhari (Ramrao Adik Institute of Technology, India)
9:15	**A Comparative Study on Static Analysis Software Tools for MISRA Compliance of Aero Engine Control Software** Hem Kapil (Defence Research and Development Organization, India); Niranjan Patil and Omkar Kanetkar (India)
9:30	**Performance Analysis of Functionally Distributed Multi Sensor Data Fusion Framework for Airborne Maritime Surveillance** Jayamohan C B (Centre for Airborne Systems, India & IIT Hyderabad, India); R Rajesh (CABS, India); C Krishna Mohan (IIT Hyderabad, India)
9:45	**Linear Feature Detection in Complex Mountain Hilly Terrain Using Connectivity Attention on VHRI CARTOSAT Satellite - U-Net++Cam** Devesh Kumar (Advanced Data Processing Research Institute (ADRIN), India); Shri Wagh Ganesh Nana and P. Suresh Kumar (Advanced Data Processing and Research Institute, India)

Monday, July 20 | Heliconia 2 | 08:00 - 10:00 Hrs

S38: SACASM | Scaling AI-Compute for Autonomous Space Missions

Chair: Narayanan Subramaniam (Vanashri Technology Consulting, India)

8:00	**Unconventional Blueprint of an Intelligent Sequence Manager- Autonomous Acquisition, Fault Handling and Recovery for Microsatellites** Kanu Priya Govila and Renuka Agarwal (URSC, ISRO, India)
8:15	**Constrained Optimal Guidance Framework for Mars EDL Using PS-MPSP** Partha Ajit Surve (Vikram Sarabhai Space Centre, India); Radhakant Padhi (Indian Institute of Science, Bangalore, India)
8:30	**DAISP: An Architecture for Distributed Autonomous Intelligent Space Processing** Dilip Krishnaswamy (Centre for Development of Telematics, India)
8:45	**Verification and Validation of AI/ML Based Cloud Detection Application for Space Missions** Mitrajsinh Mahendrasinh Padheriya (Indian Space Research Organisation, India); Yogesh Mishra (Space Application Centre (Indian Space Research Organisation), India); Mohit Sharma and Kamal Poddar (Indian Space Research Organisation, India)
9:00	**Learning Flow Surrogates for SPACE Design Workflows with Physics-Informed Neural Operators: A Burgers Robustness Study** Ramesh Kolluru, Tanishque Kumar, Aditi Lal, Jay Shah, Alex Khan and Ferdin Sagai Don Bosco (BQP, India); Rut Lineswala (BQP, USA); Abhishek Chopra (BQP, India)
9:15	**Which Workloads Belong in Orbit? A Workload-First Framework for Orbital Data Centers Using Semantic Abstraction** Durgendra Narayan Singh (Independent Researcher, Twin Falls, ID, USA)
9:30	**Predictive Modelling of Thermal Behaviour in Phase Change Materials Using Machine Learning Techniques** Gokul Depuk T P (CABS, India); Sunil Chandel (Defence Institute of Advance Technology DIAT Pune, India); Suresh Srivastava (DRDO, India); Annapurna Sogunuru (CABS, India)
9:45	**Hierarchical Model for Space Human-AI Teaming Security Assessment** Clara Maathuis (Open Universiteit, The Netherlands); Kasper Cools (Vrije Universiteit Brussel, Belgium & Royal Military Academy, Belgium)

Monday, July 20 | Hibiscus 1 | 08:00 - 10:00 Hrs

S39: SDP-II | Room: Hibiscus 1

Chair: Tapan Misra (Space Applications Centre (ISRO), India)

8:00	**A Scalable and Modular Framework for Sensor Integration and Data Processing in Airborne Surveillance Systems** Jayamohan C B (Centre for Airborne Systems, India & IIT Hyderabad, India); R Rajesh and Rajesh Gandhi (CABS, India)
8:15	**Radiation-Tolerant SWaP-C Efficient SerDes-FPGA Interoperability for ISRO Space Systems** Nirbhay Tyagi (Indian Space Research Organization, India); Vikas Singh and Abhishek Kunal (Indian Space Research Organisation, India); Ritesh Kumar Sharma (Space Applications Centre, India); Saravana B Kumar (Indian Space Research Organisation, India)
8:30	**Digital Pulse Processing for Precision X-Ray Photon Counter in Pulsar Navigation** Subhajit Majumder (Star Sensor System Group, Laboratory for Electro-Optics Systems, ISRO & Department of Electronic Systems Engineering, Indian Institute of Science, India); Koushal Vadodariya (Space Astronomy Group, U R Rao Satellite Centre, ISRO, India); Gyanendra Kumar Kashyap (Star Sensor System Group, Laboratory for Electro-Optics Systems, ISRO, India); Radhakrishna V. (Space Astronomy Group, U R Rao Satellite Centre, ISRO, India); Lithin Mg (Star Sensor System Group, India); Mayank Shrivastava (Indian Institute of Science Bangalore, India)
8:45	**An Approximate GLRT for Multi-Dimensional Signal Detection Under Unknown Noise Variance** Sanjeev Gurugopinath (MMRFIC Technology Private Limited, India); Ganesan Thiagarajan (MMRFIC Technology Pvt. Ltd, India)
9:00	**Attention-Enhanced MobileNetV2 for Robust Cross-Sensor Cloud Detection in Satellite Imagery** Rakesh Asery (CSIR Fourth Paradigm Institute Bangalore, India)
9:15	**Cross-Dataset Generalization in Infrared Small Target Detection for Aerospace and Defence Applications** Pramod Kumar (DRDO, India); Soma Biswas (IISc, India)
9:30	**Comparison and Simulations of Adaptive and Space Time Adaptive Processing Techniques** Tushar Golani (ISRO, India); R David Koilpillai (Indian Institute of Technology Madras, India); Christopher S (IITM, India)
9:45	**Serial Interface for High Speed Data Convertors (AFE7950) with Logic Devices (Polarfire FPGA)** Yamuna Shanker Kumawat (Indian Space Research Organization, India); Rajat Arora (Space Applications Centre (SAC), ISRO, India)

Monday, July 20 | Hibiscus 2 | 08:00 - 10:00 Hrs

S40: ARMP | Antennas/RF/Microwave/Payload

Chair: Manuel Sierra Castañer (Universidad Politécnica de Madrid, Spain)

8:00	**Four Polygonal-Frustum-Shaped Dielectric Resonator Antennas for 24 GHz ISM Band Applications** Sumer Singh Singhwal and Ladislau Matekovits (Politecnico di Torino, Italy); Ildiko Peter (George Emil Palade University, Targu-Mures, Romania)
8:15	**A Conformal THz Full-Duplex Antenna with High Isolation for Vehicle Integration** Durga Prasad Purbey (Indian Institute of Technology Kharagpur, India); Sandip Ghosal (NIT Rourkela, India); Arijit De (Indian Institute of Technology Kharagpur, India)
8:30	**Design of a Compact UHF Diplexer with Symmetrically Stepped Resonators for Land Mobile Radio Applications** Sayyad Shahwaz Ali (Central Research Laboratory, India & Bharat Electronics Limited, India); Elumalai Dillibabu (CRL-BEL, India); Joydeb Mandal (Bharat Electronics Limited, India)
8:45	**Investigation of Diagonally Placed Quarter-Sectors on a Circular FSS for Polarization-Independent and Angularly Stable Performance** Abhishek Karwa (BITS, Pilani, India); Ashish Kumar Verma (School of Engineering and Technology, DIT University, Dehradun, India); Ritish Kumar (Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh, India); Abhishek Joshi (Dolcera Information Technology Services (P) Ltd, India); Mohd Jahangeer (Birla Institute of Technology and Science, Pilani, India); Rahul Singhal (BITS Pilani, India)
9:00	**Conformal and Wideband Antenna Operating in the Frequency Range of 2-18 GHz for DoA Application** Rajesh K Singh (Defence Institute of Advanced Technology, India); Sanket Kalamkar (Defence Institute of Advanced Technology (DIAT), India); Satish Jhariya and Siva Kumar R (BEL, India)
9:15	**Simulation Studies on Magnetically Insulated Line Oscillator with Voltage Variation** Shivabhagya M S and D Senthil Kumar (DRDO, India); Srinivas N (Scientist, India); S K Datta (DRDO, India)
9:30	**Dual-Band Filter for SATCOM Applications at Ka-Band** Nishant Shukla (SAC, ISRO, India); Akhilesh Mohan (Indian Institute of Technology Roorkee, India); Vikas Gupta and Praveen Ambati (SAC-ISRO, India); Jayesh Thakkar (SAC, ISRO, India)
9:45	**UWB Spurious Radiation Suppressed/RFI Mitigated Dual-Polarized Patch Antenna with Integrated High Performance Coupler for Space Applications** Venkata Sitaraman Puram (Indian Space Research Organization, India); Vamsi Krishna Velidi (ISRO Satellite Centre, India); Arijit De (Indian Institute of Technology Kharagpur, India)
10:00 - 10:30	**TCBN3: Tea/Coffee Break & Networking** **Room:** Convention Centre, Amaryllis, Petunia, Scarlet 1, Scarlet2, Scarlet 3, Zinnia, Tulip, Poinsettia 1, Poinsettia 2, Heliconia 1, Heliconia 2, Hibiscus 1, Hibiscus 2

Monday, July 20 | Amaryllis | 16:30 - 18:30 Hrs

S41: AITC-III | Assembly, Integration & Testing / Checkout

Chairs: RV Nadagouda (Indian Space Research Organisation, India), Pramod V. B. (UR Rao Satellite Centre, India)

16:30	**Hinged Panel Assembly Fixture for Small Satellite** Banavathu Lohit, Aryan Kumar, Saurabh Yadav and Prashant D Bagalkot (ISRO, India); Sri Niwas Sahu and Pramod V. B. (UR Rao Satellite Centre, India)
16:45	**Significance of Modelling & Simulation-Based Hardware-in-the-Loop Testing for Integrated Airborne Multi-Sensor Platforms** Saravanan D and Anand Kumar C S (Government, India); Tarun Gupta (Private, India); Kannan S (Goverment, India)
17:00	**Automated Performance Analysis for MSDF Scheme Under Large Force Engagements in Airborne Surveillance** Rineesh Babu P, B R Kapuriya, A Muthukumar and R Rajesh (CABS, India)
17:15	**Design and Benchmarking of High Fidelity RF Emulator for Tactical Data Link Systems** Amaresh Kumar Singh, R Varadharajan and Anand Kumar C S (Government, India); Deepak Kumar (Private Company, India)
17:30	**Pipelined Multi-Sensor Data Fusion (P-MSDF) in Surveillance Systems and Its Experimental Validation** Jayamohan C B (Centre for Airborne Systems, India & IIT Hyderabad, India); Annu Kumari (Centre for AirBorne Systems, India); R Rajesh (CABS, India); C Krishna Mohan (IIT Hyderabad, India)
17:45	**Design and Realization of RF Test Instrumentation System for Performance Evaluation of Airborne IFF System Variants** Ramya kusuma Sunkara (DRDO, India); Anand Kumar C S (Government, India); Nagaraj L M (Academia, India); Reep Khanikar (DRDO, India); A K Singh (Centre for Airborne Systems, India); Ranganayukulu M (Government, India)
18:00	**An Integrated Timing, Parametric and Protocol Verification Methodology for PXIe-Based Digital Pattern Instruments** Nidhi Mittal and Deepthi VD (CABS DRDO, India); Jayaprakash K P (CABS, DRDO, India); A S Kumaran (CABS DRDO, India); Santhya P (CABS, India)
18:15	**SMART-TC: An Autonomous State-Aware Framework for Dynamic Satellite Payload Configuration** Janardhana Reddy G and Bhanu M (ISRO, India); Anjani Srilaxmi (URSC, India)

Monday, July 20 | Petunia | 16:30 - 18:30 Hrs

S42: AMSS-II | Advances in Measurements for SPACE Systems

Chair: Lakshmeesha V K (URSC, India)

16:30	**Design, Development and Performance Evaluation of 32X64 RFSM Up to 40 GHz** Chittaranjan Swain (CABS DRDO, India); Thara Mathew (CABS, India); Jayaprakash K P (CABS, DRDO, India); A S Kumaran (CABS DRDO, India); Santhya P (CABS, India)
16:45	**Unsupervised Detection of Lunar Landslides and Boulders Using Chandrayaan Terrain Data for Sustainable Space Exploration** Aravinth J (Amrita Vishwa Vidyapeetham, India); Rohith S, Thilak Sujan K S and Krithik J Y (Amrita School of Engineering, Coimbatore, India)
17:00	**Bounding Box Optimization for Continuous Satellite Constellation Visibility** Kowsik Nandagopan D (Center for Development of Telematics, India); Anand M (Centre for Development of Telematics, India)
17:15	**Threshold-Driven Passive Harmonic Selector for Microwave Rectifiers in Wireless Power Transfer Systems** Amogha Sushant Kantak and Kundan Sahu (Indian Institute of Space Science and Technology, India); Gopika R (Indian Institute of Space Science & Technology, India); Chinmoy Saha (Indian Institute of Space Science and Technology, India & Royal Military College of Canada, Canada)
17:30	**Dual Band Dual Circular Range Feed Antenna for Multi-Beam Spacecraft Characterization** Sasikanta Kumar and Satish Bandlamudi (URSC Bangalore, India); Puneet K Mishra (URSC, India); Renuka R (URSC, Bangalore, India); Sri Niwas Sahu and Pramod V. B. (UR Rao Satellite Centre, India); RV Nadagouda (Indian Space Research Organisation, India)
17:45	**System and Method for Distributed xMIMO Coordination Across Synchronized LEO Satellite Constellations** Harshit Gupta (Bharat Electronics Limited, India)
18:00	**Simulation Based Analysis of Lightning Induced Transients and Pin Level Responses in Aircraft Wiring Harnesses** Isac George Thankachan and Adwaith B Vasanth (India); Mrudula G (CSIR - National Aerospace Laboratories, India)
18:15	**Simulation and Analysis of HIRF Vulnerability: Metallic Vs Composite Aircraft** Adwaith B Vasanth and Isac George Thankachan (India); Mrudula G (CSIR - National Aerospace Laboratories, India)

Monday, July 20 | Scarlet 1 | 16:30 - 18:30 Hrs

S43: RT-II | Radar Technology

Chair: Ram M Narayanan (Pennsylvania State University, USA)

16:30	**Range Migration Correction of Fast Moving Targets in a Pulsed Radar Using Keystone Transform** Ujjwala Mishra (Bharat Electronics Limited, India); Nagendra Kumar (Public Sector unit, India); Viji Paul P (Bharat Electronics, India)
16:45	**Aperture-Limited Two-Fold Redundant Sparse Arrays for Physical Size Constrained Scenarios Using Intelligent Exhaustive Search** Sanjeeva Reddy S (IIIT Bangalore, India & Vellore Institute of Technology, India); Ashish Patwari (Vellore Institute of Technology Vellore, India); G. Ramachandra Reddy (Vellore Institute of Technology, India)
17:00	**Multi-Wavelet Based Waveform Design and Target Detection for Multi-Dynamic Radar Scenario** Jawed Qumar (Indian Institute of Technology Guwahati, India); Christopher S (IITM, India)
17:15	**Grating Lobe Suppression in near-Field DOA Estimation** Gincy Varghese C (International Institute of Information Technology, Bangalore, India); Vinod Reddy and Debashish Das (IIIT Bangalore, India)
17:30	**High Performance DSP for Drone Navigation Systems Using Cascaded Imaging Radars** Praveen Natarajan, Harini C and Melina Jennifer (Texas Instruments, India)
17:45	**Miniaturized Multi-Channel Digital Beam Former for ISRO's Very High Resolution SAR** Swastik Saini (SAC, ISRO, India); Ramesh Kumar (SAC-ISRO, India); Rinku Atulkumar Agrawal (Space Application Centre ISRO, India); Saravana B Kumar (Indian Space Research Organisation, India)
18:00	**Enhancing Radar Survivability Against Passive anti-Radiation Missiles Using Spatially Distributed Active Decoys and Time-Domain Pulse Blinking** Dhrubjun Nath Saikia (KU Leuven Group T, Belgium)
18:15	**A Multi-Scale Attention U-Net for Automotive Radar Range-Doppler Target Detection** Arundhati V and Yash Soni (India); Pranabesh Maji (CSIR-Central Electronics Engineering Research Institute, India & Academy of Scientific and Innovative Research (AcSIR), India); Dhiraj (CSIR-Central Electronics Engineering Research Institute, CSIR-Ceeri, Pilani, India)

Monday, July 20 | Scarlet 2 | 16:30 - 18:30 Hrs

S44: SA-III | SPACE Antennas

Chair:

16:30	**Frequency Selective Surface Design Using Cross-Dipole for X/Ka Band Operation** Chandrakanta Kumar (ISRO, India); Sasikanta Kumar and Satish Bandlamudi (URSC Bangalore, India); Puneet K Mishra (URSC, India); Senthil Kumar (ISRO, Bangalore, India)
16:45	**Determination of Phase Center of a Dual Polarized Ku Band Feed System** Ravi Kumar Samminga, Scientist (DRDO, India & LRDE, India); Sanika C V (CADMAXX, India); Amlesh Singh (LRDE, India & DRDO, India)
17:00	**A Compact Tri-Band Unidirectional Bow-Tie Antenna for L1, L5, and S-Band Applications** Devendra Kumar Sharma (Space Applications Centre, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Vijay Kumar Singh (Co-author, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
17:15	**High Gain Smooth Walled Horn Antenna at Ka-Band for Space-Borne Beacon for Dual Circular Polarization** Rajesh Singh Parmar (Space Application Center, Ahmedabad, India); Rohit Kumar Nandwani (SAC, India); Sravan Kumar Sagi (Space Applications Centre ISRO, India); Vijay Kumar Singh (Co-author, India); Milind B Mahajan (Space Applications Centre, ISRO, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Ramesh Chandra Gupta (Space Applications Centre ISRO, India)
17:30	**X-Wing UHF SATCOM Antenna for Wearable Manpack Applications** Chandankumar Chaman, Ayyappan M Nair and Siddharth Bhonge (Cyronics Innovation Labs Ltd, India)
17:45	**Microstrip Patch Array Antennas in Multilayer PCB Configuration at K and Ka Bands** Suvrajit Ghosh (Indian Space Research Organisation (ISRO), India); Sravan Kumar Sagi (Space Applications Centre ISRO, India); Alok Kumar Singhal (Space Applications Centre, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
18:00	**A Compact Multiband Slotted Microstrip Patch Antenna with Enhanced Gain for C-X-Ku(Multi) Band Applications** Santhosh J R, Shanmuganantham T and Barathidasan E (Pondicherry University, India)
18:15	**Deployable Low Profile Linear Array Antenna Embedded with Electromagnetic (EM) Bridge for P-Band SAR** Pratik Mevada (ISRO, India)

Monday, July 20 | Scarlet 3 | 16:30 - 18:30 Hrs

S45: WLTD-2 | Women-Led Technology Developments

Chairs: Nandini Harinath (ISTRAC, India), Archana Sharma (NIT Raipur, Ex-BARC, India)

16:30	**UHF Transmitter for Human Space Mission** Leena Kohli Kapoor (ISRO, India); Mayur Vinod Chaudhari (Indian Space Research Organisation, India)
16:45	**Design and Performance Evaluation of Compact Ka-Band Frequency down-Converter for Handling High-Data Rate Satellite Link** Pooja Gupta (Government of india & I.S.R.O, India); Md Azharuddin (Government of India & I.S.R.O, India); Vishnu Kishore Pai (Government of india & I.S.R.O, India); MD. Tosicul Wara (UR Rao Satellite Center, Indian Space Research Organisation, India)
17:00	**Simulation Study of End on End Motion of Serial Robotic Manipulator for Spatial Maneuverability** Sangeetha Geetha Rajasekharan (Indian Space Research Organisation & ISRO Inertial Systems Unit, India)
17:15	**Regenerative Payloads in Future HTS/VHTS: Towards Bandwidth & Energy Efficient Hub Links** Ashna Kumari Banka and Neha Mehra (Space Applications Centre, ISRO, India); Saket Buch (Space Applications Centre & ISRO, India); Ujjwal Gangele (Indian Space Research Organization, India); Subhash Chandra Bera (Space Applications Centre & ISRO, India)
17:30	**Design and Development of S-Band Driver Amplifier MMIC** Lakshmipriya Prusty (ISRO, India); Padma Vidhya A K (Indian Space Research Organisation, India)
17:45	**Design and Realization of Ka-Band Asymmetric Iris Wideband Waveguide Bandpass Filter for Spacecraft Checkout Applications** Abhilasha Agarwal (Indian Space Research Organization, India); MD. Tosicul Wara, Raja Sharma and Viswanadha Srivani (UR Rao Satellite Center, Indian Space Research Organisation, India); Pooja Gupta (Government of india & I.S.R.O, India); Sama Sowbhagya Lakshmi (Isro, India)
18:00	**Waveform Synthesizer Module for W Band FMCW Radar Transceiver** Debapriya Sen (Central Research Laboratory Bharat Electronics Limited, India); Subhalaxmi Rath (CRL-BEL, India); Harikrishna Avirneni (Member Senior Research Staff, India); Satyanarayana V (Bharat Electronics Limited, India)
18:15	**Characterization and Field Validation of Impulse Ground Penetrating Radar System** Sunita Khokhar (Space Application Centre, India); Swati Shukla (Space Applications Centre, India); Rutvi Dharav Patel (Space Applications Centre, ISRO, India); Diksha Sharma, J. Rao and Pankaj K Nath (Space Application Centre, India); Cvn Rao (Space Applications Centre (ISRO), India)

Monday, July 20 | Tulip | 16:30 - 18:30 Hrs

S46: NGRA | Next Generation Radio Astronomy

Chairs: Abhirup Datta (Indian Institute of Technology Indore, India), Srinivasan Veragur Venkataraman (Dayananda Sagar University, India)

16:30	**Impact of Random Phase Error in Fresnel Field Holography of mmWave Telescope** Mevada B Pratik (SAC (ISRO), India); Yogesh Tyagi (SAC, ISRO, India); Vijay Kumar Singh (Co-author, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
16:45	**A High Gain Wideband LNA for Radio Astronomy Applications Using 0.13µm pHEMT Process** Kashish Grover (Space Applications Centre, India); Harshita Tolani (Indian Space Research Organization, India); Devendra Kumar Sharma (Space Applications Centre, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
17:00	**Dual-Passband Polarization-Insensitive Metasurface Filter for Ka- and V-Band Radio Astronomy Front-End** Rohan Sharma (IIT (BHU) Varanasi, India); Soumyo Purkayastha, Harsh Chawra and Hardik Juneja (IIT (BHU), India); Shivam Mishra and Vishnu Kumar Mishra (IIT BHU, India); Sougata Chatterjee (National Center for Radio Astrophysics, TIFR, India); Somak Bhattacharyya (IIT (BHU), India)
17:15	**A Multifunctional L-Band Metasurface Bandpass Filter for Radio Astronomy Front-End Systems** Vishnu Kumar Mishra (IIT BHU, India); Ravi Kumar (IIT BHU VARANASI, India); Biswajeet Mukherjee (Delhi University, India); Vinit Kumar (Sac-Isro, India); Praveen Ambati (SAC-ISRO, India); Jolly Dhar (ISRO, India); Sougata Chatterjee (National Center for Radio Astrophysics, TIFR, India); Thottappan M and Somak Bhattacharyya (IIT (BHU), India)
17:30	**Design and Analysis of Low Loss Broadband Vacuum Window for mm and Sub mm Wave Telescope** Arun Kumar Sharma (Space Applications Centre, ISRO, India); Yogesh Tyagi (SAC, ISRO, India); Devendra Kumar Sharma (Space Applications Centre, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Vijay Kumar Singh (Co-author, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
17:45	**System-Level Simulation of Experimental Prototype Aperture Array Beamformer for the Expanded GMRT** Kaushal Buch (Giant Metrewave Radio Telescope, NCRA, Tata Institute of Fundamental Research, India); Sreekar Sai Ranganathan (Giant Metrewave Radio Telescope and Indian Institute of Technology (IIT) Madras, India); Bela S. Dixit (Giant Metrewave Radio Telescope, NCRA, Tata Institute of Fundamental Research, India)
18:00	**Gamma-Ray Burst Light-Curve Analysis: Reconstruction by Machine and Deep Learning Techniques** Manish Kalra (GLA University, India); Aritra Sanyal (Jadavpur University, India); Vinod Kumar Bhardwaj (GLA University, India); Swapan Das (Arden University, United Kingdom (Great Britain)); Sougata Chatterjee (TIFR, India); Saibal Ray (GLA University, India)
18:15	**Exploration of the GRB Afterglow Light Curve Reconstruction Using Neural Network** Vinod Kumar Bhardwaj, Manish Kalra and Saibal Ray (GLA University, India); Aritra Sanyal (Jadavpur University, India); Swapan Das (Arden University, United Kingdom (Great Britain)); Sougata Chatterjee (TIFR, India)

Monday, July 20 | Poinsettia 1 | 16:30 - 18:30 Hrs

S47: Quantum-II | Room: Poinsettia 1

Chairs: M. Senthilkumar (ISRO, India), Prashanth C. Upadhya (Indian Institute of Science, India)

16.30-17.00	**Keynote: Satellite Based QKD** Dr. M Senthil Kumar, DS & DD HSTA, SAC, Ahmedabad
17:00	**Rydberg Atomic States and RF Field Sensitivity of Rubidium/Cesium Based Quantum Sensors** Sunita Khokhar and Ameya Kesarkar (Space Application Centre, India)
17:15	**Operational Feasibility of Satellite QKD for Space Missions: Orbit-Dependent Key Supply, Buffering, and Demand Constraints** Joan Bas and Albert Compte (CTTC, Spain); Joanna Sliwa (NCI Agency, The Netherlands); Konrad Wrona (NATO Communications and Information Agency, The Netherlands & Military University of Technology, Poland)
17:30	**Maximizing Ground Station Connectivity in Constellation Design via Quantum-Inspired Algorithms** Kandula Eswara Sai Kumar (Principal Scientist, BQP, India); Priyabrata Maharana, Anoop A and Utkarsh Singh (BosonQ Psi Tech Pvt Ltd, India); Abhishek Chopra (BQP, India); Rut Lineswala (BQP, USA)
17:45	**Quantum-Evolved Motion Priors in Particle-Based Missile Guidance** Soumyadip Chakrabarti and Helen Vijitha P (Vellore Institute of Technology, India); Jai Vinita L (Vellore Institute of Technology, Chennai, India)
18:00	**Quantum Feature Enhancement with Network Anomaly Detection** Rajendra Hegadi, Mohd Zubair Khan and Saharsh Kumar Sharma (Indian Institute of Information Technology Dharwad, India)
18:15	**Design and Implementation of Polynomial Multiplication on RISC-V Architecture for Post Quantum Cryptography** Rajendra Prasad P, Ganesh S and Venkatesh Nuthan Prasad (Ramaiah Institute of Technology, India)

Monday, July 20 | Poinsettia 2 | 16:30 - 18:30 Hrs

S48: MPCNG-III | Mission Planning / Control / Navigation / Guidance

Chairs: Jasvinder Singh Khoral (URSC, India), N K Philip (URSC, India)

16:30	**Novelties in XPoSat Attitude Guidance and Control for Nominal Sun Pointing, Downlink and Stellar Observation** Chiranjib Guha Majumder (Indian Space Research Organization, India); Kanu Priya Govila (URSC, ISRO, India); Madhu KV (ISRO, India); Harish K Joglekar (URSC, ISRO, India); Shubha Kapoor (ISRO, India); Mohan Sundara Siva (Government & Indian Space Research Organisation, India)
16:45	**Kaynes Sat-1 Configuration and Mission Analysis** Inbisat Yousuf (Mission Design and Flight Dynamics HRAD Technologies Pvt. Ltd, India); Nikhil Riyaz (Systems Engineering HRAD Technologies Pvt. Ltd Bengaluru, India); Prashantha Kumar, Divyashree H b and Charan Raj (Dayananda Sagar University, India)
17:00	**Guidance Strategies for Contingency Scenario During Chandrayaan-3 Terminal Lunar Descent** Chiranjib Guha Majumder (Indian Space Research Organization, India); Rijesh MP (UR Rao Satellite Centre, India & Indian Space Research Organization, India); Mohan Sundara Siva (Government & Indian Space Research Organisation, India)
17:15	**Autonomous Spacecraft Attitude and Gyro Bias Estimation Using NavIC and GNSS Observables** Ishita Ganjoo (ISRO, India)
17:30	**Non-Homogeneous Markov-Based Risk Modeling and Mitigation for Autonomous Aerospace Missions** Dharmaraja Selvamuthu, Sanya Sachan and Urvashi Godara (IIT Delhi, India)
17:45	**Genetic Algorithm Based Trajectory Optimization for Precise Earth Re-Entry of Lunar Sample Return Capsule** Pratik Desai (MIT ADT University, India); Payal Agarwal (Indian Space Research Organization, India); Ishita Ganjoo (ISRO, India); Mohan Sundara Siva (Indian Space Research Organization)
18:00	**Re-Targeting Algorithm for Lunar Soft Landing Under Non-Convergence of Guidance to Designated Landing Point** Rijesh MP (UR Rao Satellite Centre, India & Indian Space Research Organization, India); Chiranjib Guha Majumder (Indian Space Research Organization, India); Mohan Sundara Siva (Government & Indian Space Research Organisation, India)
18:15	**Flight Clearance Method for ILS Based Automatic Landing Controller for a Combat Aircraft** Akhila M R (ADA, India); Abhilash P M (Aeronautical Development Agency, India); N K Sura (ADA, India)

Monday, July 20 | Heliconia 1 | 16:30 - 18:30 Hrs

S49: RASE-II | Robotics/Automation/Sensor Electronics

Chairs: Chayan Dutta (ISRO, India), Sohan Suvarna (Director, WIPRO Innovation Netwrok, India)

16:30	**Flight Dynamics Simulation with Sliding Mode Control Under Atmospheric Disturbances** Salahudden (Indian Institute of Technology Kanpur, India)
16:45	**Flight Dynamics and Closed-Loop Control of a Cyclocopter with Real-Time Visualization** Salahudden (Indian Institute of Technology Kanpur, India); Rahul Bansal (Punjab Engineering College, India); Srikant Shekhar Padhee (Indian Institute of Technology Ropar, India)
17:00	**Mobility System Design and Terrain Adaptability Analysis of Planetary Rover** Sripad Kulkarni, Srilaxmi Shenoy, Prashantha Kumar, Khyati Choubey, Neha M, Pramath Gopal Bhat, Prajwal N Halvi and Atharva Amit Deshmukh (Dayananda Sagar University, India)
17:15	**A Low Cost, Inertial Measurement and Data Acquisition System for Launch Vehicle Avionics** Patha Yedukondalu (Vikram Sarabhai Space Centre, ISRO, India); B Koteshwar Naidu, Gali Nagalalitha, Sabooj Ray and Finitha C (VSSC, India); Sreekumar Sankaranthil (Vikram Sarabhai Space Center, India)
17:30	**Towards Carefree Maneuvering of a High Performance Aircraft: Predictive Recovery for Altitude Breach Prevention** Gaurav Kumar, Ashok Kumar Prajapati, Akhila M R, Mohit Kumar Malhotra and Niranjan Sura (Aeronautical Development Agency, India)
17:45	**Multi-Parameter Sensor for Aerodynamic Applications** Sabooj Ray (VSSC, India); Sreedharan Pillai Sreelal (Indian Space Research Organization, India)
18:00	**Nonlinear Longitudinal Dynamic Description of Hybrid Airship Incorporating Apparent Mass Effects** Abhishek Kumar (Manipal University Jaipur)
18:15	**Design, Development and Control of a Reconfigurable Spherical Rover** Parameswaran Iyer, Sohini Kayal, Swayam Shree, Dibyasreekant Bisoyi and Aarshia Rawat (Birla Institute of Technology and Science, India); Aryan Anupam, Ponnalagu R N and Joyjit Mukherjee (BITS Pilani Hyderabad Campus, India)

Monday, July 20 | Heliconia 2 | 16:30 - 18:30 Hrs

S50: SERQA-II | System Engineering/Reliability / Quality Assurance

Chairs: Madhusudhana CS (UR Rao Satellit Centre, India), Faizal Jeswant PV (UR RAO Satellite Centre, India)

16:30	**Design for Reliability: Importance and Challenges in Defence System** Pavan Kumar Kaushik (Aerial Delivery Research and Development Establishment, DRDO, Agra, India); Vivek Mairothia (Aerial Delivery Research and Development Establishment, India)
16:45	**A Theoretical Framework for Optimizing Process Flow Sequence for Implementation of Production Systems** Akshay Belle, Manikantan Thyigarajan and Ajaykumar Mst (Boeing-India)
17:00	**Differentiating the Logical Scope of Top Events in Standalone Fault Tree Analysis vs. Integrated Probabilistic Risk Assessment for Space Systems** Vijayasree Mallikarjun Kande (URSC, ISRO, India); Sarat Kumar Dash (ISRO, India); Manoj Bs (Indian Institute of Space Science and Technology, India)
17:15	**Design Enhancement of Aircraft Interior Lighting by Integrating Reliability and Safety Techniques** Geethamadhuri Perumal, Supriya G R, Mohan Kumar K and Vinay Siddaramappa (Collins Aerospace, India)
17:30	**Qualification of an Indigenous Developed 1553B in-Line Data Bus Coupler for Space Application** Prema Latha D (ISRO & URSC, India); Sujatha A (Senior Officials, India); Sarat Kumar Dash (ISRO, India)
17:45	**An MBSE-Driven Approach to Structured Interface Management in Distributed Ecosystem for Aerospace Programs** Sandesh Puranik, Suvigya Gupta, Mohan Mishra, Joydeep Roy and Dinesh Kumar Kushwaha (Collins Aerospace, India)
18:00	**Frugal Innovation and Business Growth Strategies from Space Startup Venture Founders** Vincent Socci (On Target Motion, USA)
18:15	**Reliability Prediction of Ka-Band Data Transmission RF Systems for Space** Akanksha Ojha (ISRO, India); Shahul Hameed Ansari (Isro, India); Sanjoy Paramanik (ISRO, India)

Monday, July 20 | Hibiscus 1 | 16:30 - 18:30 Hrs

S51: SDP-III & SMB | Room: Hibiscus 1

Chair: Arundhati Misra Ray (ISRO, India)

16:30	**Enhanced Real-Time Event Monitoring and Surveillance: A Technical Overview of the AFR-1 Video Imaging System** Abhishek Patil (Azista Industries, India)
16:45	**Real-Time GNSS Data Processing and Visualization Using a Low-Cost Single-Frequency Receiver** Sony Devalapally, Praveen G and Krishna Reddy D (Chaitanya Bharathi Institute of Technology, India); Supraja Reddy Ammana (Chaitanya Bharathi Institute of Technology (CBIT), India); Keerthi Purra, Kangula Jai Lakshmi and Navya Sri Lakshmi (Chaitanya Bharathi Institute of Technology, India)
17:00	**Very High Frequency (VHF) Interference Detection and Classification Using Spectrogram and Machine Learning (ML)** Pulamani Barman, Subramanian Ramasamy and Alok Chauhan (Collins Aerospace, India)
17:15	**Comparative Study of Data Association and Nonlinear Kalman Filtering Methods for Single and Multi-Object Space Tracking** K C Chandini Devi and Shahla K P (ISTRAC, India); Chinni Prabhunath G (India)
17:30	**Non-Intrusive Contour-Based Rigid-Body Angular Displacement Estimation** Gagana Y (RV College of Engineering, India); Mofeez Alam (Vikram Sarabhai Space Centre (VSSC), India)
17:45	**Design of a Microwave Radiometer for Continuous Monitoring of Astronaut Muscle Health** Vidyalakshmi Mandakolathur Ravi and Ramesh S (Tejas Networks, India)
18:00	**Design and Implementation of RLS Operations for Science Activities on Board the ExoMars Rosalind Franklin Mission** Laura Seoane, Andoni Gaizka Moral, Jesús Zafra and Carlos Pérez (INTA, Spain); Guillermo Lopez-Reyes (Universidad de Valladolid); Pablo Parra (Universidad de Alcalá de Henares, Spain); Olga Prieto-Ballesteros (Centro de Astrobiología (CAB), Spain); Fernando Rull (Universidad de Valladolid, Spain)
18:15	**Hypergraph-Enhanced Lightweight Detection Architecture for Foreign Object Debris Identification on Airport Runways** Yerram Deekshith Kumar and Kannuru Srinadh (National Institute of Technology Rourkela, India); Upendra Sahoo (NIT Rourkela, India)

Monday, July 20 | Hibiscus 2 | 16:30 - 18:30 Hrs

S52: TRT | Transmitter/Receiver Technology

Chair: Yogesh Kumar Verma (Research Center Imarat, India)

16:30	**Design and Space Hardware Realization of a MMIC Based High Gain Ka X S Receiver** Avinash R Pulsay (Space Applications Centre, ISRO, India); Rajnish Kumar Singh (Space Applications Centre, India); Akhil (Space Applications Centre (ISRO), Ahmedabad, India); Rati Singh and Jayesh Thakkar (SAC, ISRO, India)
16:45	**Interference Rejection Quad Switch Filter Bank for a Multichannel Wide-Open Receiver** Abhilash Thumiki (DLRL DRDO & CASEST University of Hyderabad, India); Lalitha Saripaka (University of Hyderabad & DLRL, DRDO, India); Y. Hemalatha (DRDO, India); James Raju K c (University of Hyderabad, India)
17:00	**Miniaturized Advanced Telemetry Transmitter for Small Satellite Space Vehicles** Sreekanth A, Jayaram Reddy M K and Renu Agarwal (Vikram Sarabhai Space Centre, India); Indu Gopan (VSSC ISRO, India); Lal Mj (Vikram Sarabhai Space Centre, India)
17:15	**SDRT-DTX: A Versatile, Software-Defined Dual Telemetry Transmitter for Real-Time Data and Video in Space Missions** Bibin Varghese and Midhun Krishna (Indian Space Research Organization, India); Vidya Viswanathan (Mathworks, India); Ajay Krishnan K E (Vikram Sarabhai Space Centre, India); Gautham Suresh (Vikram Sarabhai Space Centre, ISRO, India); Sreedharan Pillai Sreelal (Indian Space Research Organization, India); Prashnik Bhattacharya (VSSC, India); Sumathy, N (India)
17:30	**High Reliability S-Band Transmitter Design for Space Docking Experiment** Deepali C Vaishya (URSC, India); Kumar Harshit and Bindu R (Indian Space Research Organization, India); Mynam Harinath (URSC, India); Senthil Kumar (ISRO, Bangalore, India); Neelavathy M (URSC, India)
17:45	**UHF Transmitter for Human Space Mission** Leena Kohli Kapoor (ISRO, India); Mayur Vinod Chaudhari (Indian Space Research Organisation, India)
18:00	**A Low-Power Baseband ASIC for GSAT-6 Satellite Broadcasting Receiver** Sushma Poreddy (RCI, India); Amitesh Kumar Tripathi (Defence Electronics Research Laboratory (DLRL) DRDO, India & Indian Institute of Technology (IIT Bombay) Mumbai, India); Sharada C (Technical Officer, India); Somnath Mondal (Scientist-F, India); Kiran Garje (DRDO & R&DEE, India)
18:15	**Hardware Architecture and Implementation of Wide Band Photonic EW Receiver** Meena Dasan (LRDE, DRDO & Government, India); Vidyamol s (LRDE, India); Ankita Sunder (India)

DAY 02 | JULY 21, 2026 (TUESDAY)

Tuesday, July 21 | Convention Centre | 08:00 - 09:00

3MT: 3 Minute Thesis Competition

Chair: Surendra Pal (Indian Space Research Organisation, India)

8:00 - 9:00

1. **Acoustic Imaging and Rotating Beamforming for Quieter Aerospace Propulsion Systems:**
   Rohit Singh, Indian Institute of Technology Kanpur
2. **Design and Development of High-Performance GaAs PHEMT Low Noise Amplifier for Wideband Radar Applications**
   Sowjanya K, Central University of Karnataka
3. **Tunable and Multifunctional Metasurface Structures in THz Regime for Diverse Applications**
   Ajeet Singh Verma, Indian Institute of Technology (BHU), Varanasi
4. **Open Source Tools for FPGA Design**
   Ritesh Appasaheb Belgudri, Indian Institute of Technology Dharwad
5. **Novel System-Level Verification Strategies for System-on-Chip**
   Mahendra BM, Indian Institute of Technology Dharwad
6. **Secure Multimedia Communication over LoRaWAN Using Compression and Physical Layer Security**
   Priya Gautam, Indian Institute of Technology (BHU), Varanasi
7. **Seeing More with Less: Lightweight Multimodal AI for Flood Detection**
   Jayasree T. V., Central University of Kerala
8. **Design and Performance Evaluation of Frequency Selective Surface and Metasurfaces for Wireless Communication**
   Sonu Jain, Malaviya National Institute of Technology Jaipur
9. **Study on Metasurface-based Circularly Polarized Patch Antennas**
   Deepak Ram, Indian Institute of Technology (BHU), Varanasi

Tuesday, July 21 | Amaryllis | 8:00 - 10:00 Hrs

S53: AITC-IV | Assembly, Integration & Testing / Checkout

Chair: Vinod S Chippalkatti (CentumElectronics Ltd, India), Priyanka Mishra (URSC, India)

8:00	**Laboratory Characterization and Field Testing of Ground Based GNSS Reflectometry System** Diksha Gupta (Space Applications Centre, India); Sunita Khokhar (Space Application Centre, India); Ananya Ray (Space Applications Centre & Indian Space Research Orgnaization, India); Alok Pal (Space Applications Centre, India); Akshay Pande (Indian Space Research Organization, India); Ashok Rohada (Space Application Centre, India); Prantik Chakraborty (SAC ISRO, India); Pankaj K Nath (Space Application Centre, India); Cvn Rao (Space Applications Centre (ISRO), India)
8:15	**Packaging of Millimeter Wave and Terahertz Electronic Components** Bijit Biswas (SAMEER, India); Paramita Banerjee (SAMEER KOLKATA CENTRE, India); Mousumi Sarkar (SAMEER, India); Arijit Majumder (Society for Applied Microwave Electronic Engineering & Research, India)
8:30	**Improvement in PCM Telemetry Link at Higher Data Rate During Indoor Ground Testing of Aerospace Vehicle** Talari Shruthi, Poondru Rambabu and Arvind Kumar Kushwaha (CAS DRDO, India); Praveen Tandon (DRDO, India)
8:45	**Pre-Validation Methodology for Monopulse Tracking System Using Antenna Measurement Data** Hanuman Prasad Meena (Space Applications Centre, India); Shiv Shankar Pareek (ISRO & Space Applications Centre, India); Jatin Trivedi, Anik Saha, Siddhant Joshi and Rakesh Vyas (Space Applications Centre, India)
9:00	**AI-Based Voice Deception System for Aerospace and Defense** Harshil Gupta (DRDO, India); Vaibhav Kundu (India); Amresh Kumar (DRDO, India); TM Dhipu (Center of Airborne Systems, DRDO, India); Ramachandran Rajesh (DRDO, India)
9:15	**Performance Evaluation of Satellite QKD Links in Tropical Stations Using Radiosonde Derived Refractive Index Structure Parameter Profiles** Surya Narayana Murthy Tummala (JNTUGV, India & JNTUK, India)
9:30	**Integrated Six-Degree-of-Freedom Aircraft Stability Analysis Using MATLAB-FlightGear Co-Simulation Framework** B. K. Swathi Prasad (M. S. Ramaiah University of Applied Sciences, India); Jayahar Sivasubramanian (M S Ramaiah University of Applied Sciences, Bangalore, India)
9:45	**Investigating the Flow Patterns in a Supersonic Aerospike Rocket Nozzle** Atri Bandyopadhyay (DIAT, DRDO, India); Aditya Chandra Murty (VIT Bhopal Universiy, India); Subh Arun Das (Birla Institute of Technology Mesra, Ranchi, India)

Tuesday, July 21 | Petunia | 8:00 - 10:00 Hrs

S54: MPCNG-IV | Mission Planning / Control / Navigation / Guidance

Chair: Ritu Karidhal (Indian Space Research Organization, India)

8:00	**Multi-Objective Optimization of Trajectories for Interstellar Escape Missions Using Evolutionary Algorithms** Tharabi Suthaharan, Mada Vennela and Charulatha S (Hindustan Institute of Technology and Science, India)
8:15	**AI-Enabled Multi-Sensor Drone-Satellite Fusion Framework for Autonomous Maritime Surveillance** Jayabhaduri Radhakrishnan (Alliance University, India)
8:30	**Unified Energy-Optimal Trajectory Planning for Electric VTOL Systems Using Direct Shooting and Nonlinear Programming** Dhairya Dosi (Indian Institute of Technology, Gandhinagar, India); Arihant Jain and Yash Kodam (Indian Institute of Technology Gandhinagar, India)
8:45	**Analysis and Control of Relative Satellite Motion Using HCW-Derived Relative Orbit Elements** Arya Das (IIT Kanpur, India); Umesh Chandra (Indian Institute of Technology, Kanpur, India); Dipak Kumar Giri (IIT KANPUR, India); Maksim A. Klyushin and Alexey A. Tikhonov (Saint Petersburg State University, Russia)
9:00	**Stratospheric Airship Modeling and Simulation with Buoyancy Control** Aniruddh Padma Shenoy (National Aerospace Laboratories, India); Shikha Jain (National Aerospace Lab & CSIR- NAL, India)
9:15	**Launch Maneuver Design and Finite-Burn Analysis for a Quasi-Geostationary Constellation** Dharshne S (C-DoT, India); Anand M (Centre for Development of Telematics, India)
9:30	**Performance Enhancement of a 6-DoF Non-Linear Quadcopter Using PSO-Tuned PID Control Under Aerodynamic Drag Effects** Aryan Gujral and Abinok Selvin D (Indian Institute of Space Science and Technology, India); Rajesh Joseph Abraham (Indian Institute of Space Science & Technology, India)
9:45	**Trajectory Optimization for Highly Maneuverable Quadrotors Using Deep Inertial Odometry** Abhinav Kumar, Nitin Pal and Naba Kumar Peyada (IIT Kharagpur, India)

Tuesday, July 21 | Scarlet 1 | 8:00 - 10:00 Hrs

S55: RT-III | Radar Technology

Chair: Anil Kumar Singh (LRDE, India)

8:00	**Monolithic Microwave Integrated Circuit Packaging for Next Generation Communication** Paulami Sarkar (SAMEER KOLKATA, India); Arun Kumar (SAMEER, India)
8:15	**Digital Twin Model Design of Space Debris Detection Radar** Shahla K P and K C Chandini Devi (ISTRAC, India); Chinni Prabhunath G (India)
8:30	**Adaptive Trust-Aware Clustering Framework for Integrated Sensing and Secure Communication in Border Surveillance** Bhudeb Chakravarti (Adamas University, India); Santanu Chatterjee (Research Center Imarat & Defence Research and Development Organization, Hyderabad, India); Moumita Mukherjee (Adamas University, India)
8:45	**A Compact Quad Element Circularly Polarized Triple Band MIMO Antenna for U-NII-2C, C Band and X Band Applications** Manoj Kumar Das (KIIT Deemed to Be University Bhubaneswar Odisha, India); Sudhakar Sahu (KIIT University, Bhubaneswar, India)
9:00	**Coherent Photonic Wideband Receiver Architecture for Hybrid Radar and EW System** Meena Dasan (LRDE, DRDO & Government, India); Vidyamol s and Preenu Acha Prasad (LRDE, India)
9:15	**Hybrid SDIF-DBSCAN Approach for Radar Pulse Deinterleaving in Multi-Emitter Electronic Warfare Environments** Shubhra Gupta (Defence Institute of Advanced Technology, India); Arockia Bazil Raj (Defence Institute of Advanced Technology Pune, India)
9:30	**GPU-Accelerated Real Time-Implementation of DIAT-RadSATNet for sUAV Detection and Classification Using Micro-Doppler Signatures** Subhro Choudhury (Defence Institute of Advanced Technology, India); Arockia Bazil Raj (Defence Institute of Advanced Technology Pune, India)
9:45	**Design and Analysis of Dual C/X-Band 4x4 Corporate Series Feed Conformal Shared Aperture Antenna Array for Spaceborne SAR Applications** Bala Ankaiah Nunna (Vignan's Foundation for Science, Technology and Research, India); Venkata Kishore Kothapudi (Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur Dis)

Tuesday, July 21 | Scarlet 2 | 8:00 - 10:00 Hrs

S56: SA-IV | SPACE Antennas

Chairs: Mahesh P Abegaonkar (IIT Delhi, India), Chandrakanta Kumar (ISRO, India)

8:00	**Design Trends in the Development of Modern SSR/IFF System for Airborne Applications** Bhupendra Kumar (Centre for Airborne Systems DRDO, India); Harish Naik (Centre for Airborne Systems, India); Reep Khanikar (DRDO, India); Savita Gond (DRDO, India & CABS, India); A K Singh (Centre for Airborne Systems, India); Manoj Kumar Meshram (Indian Institute of Technology (BHU) & Banaras Hindu University, India)
8:15	**Design of High-Gain COBRA Lens Antennas for Direct TM01 Mode Radiation in C- and X-Band High-Power Microwave Applications** Mrunal A Marihal, Raja Ramana Rao and S K Datta (Microwave Tube Research and Development Centre (MTRDC), Defence Research and Development Organisation (DRDO), Bangalore)
8:30	**Vialess Electromagnetic Bandgap (EBG) Structure and Its Application in Mutual Coupling Improvement in Patch Array** Rajeev Jyoti (InSpace DOS, India); Gaurav Kumar (SAC ISRO, India); Mevada B Pratik (SAC (ISRO), India); Vijay Kumar Singh (Co-author, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India); Amalendu Patnaik (IIT Roorkee, India)
8:45	**Tandem Neural Network-Based Inverse Design of Pixelated L-Band Patch Antennas for Biomass Sensing** Aditya Anand Gupta (URSC, ISRO); Pranav Jha (Climitra, India); Yogesh Kr (URSC Bangalore, India); Senthil Kumar (ISRO, Bangalore, India); Neelavathy M (URSC, India)
9:00	**Wideband Quadrifilar Helix Active Antenna for Navigation Applications** Priyanka Jangir (ISRO, India); Kashish Grover (Space Applications Centre, India); Indra Prakash (SAC (ISRO), India); Alok Kumar Singhal (Space Applications Centre, India); Sravan Kumar Sagi (Space Applications Centre ISRO, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
9:15	**Uniform Circular Array Antenna for Generation of Multi-Mode Orbital Angular Momentum Beams: Design and Analysis** Satyajit Chakrabarti (SAMEER Kolkata, India); Subhanita Saha, Madhurima Ghosh and Vivek Kumar Singh (SAMEER Kolkata Centre, India); P Rao (Centre for Electromagnetics, SAMEER, India)
9:30	**Design and Analysis of a Compact Super-Wideband Graphene Inspired Terahertz Antenna Based on a Hybrid Substrate for Aircraft Applications** Ramakrishna Mahapatra (NIT Jamshedpur, India); Dheeraj Pandey (K.L.University Vijayawada, India); Surajit Kundu (National Institute of Technology Jamshedpur, India)

Tuesday, July 21 | Scarlet 3 | 8:00 - 10:00 Hrs

S57: AUT-III | Advances in UAS Technologies

Chairs: Dipak Kumar Giri (IIT KANPUR, India), Deepak Mishra (University of New South Wales (UNSW) Sydney, Australia)

8:00	**Enhanced Infrared Object Detection for UAV Applications Using Offline Image Preprocessing** Narayan Irkal, Samuel Savangouder and Shreyas Kulkarni (KLE Technological University, India); Prabhavathi Nissimagoudar (BVB College of Engineering Campus & VTU, India)
8:15	**Resilient Federated Decision Intelligence for UAV Swarm Target Tracking and Coordination Across Heterogeneous Mission Environments** Aviksha Nayana Pala and Sathya D (RV University, India)
8:30	**Experimental Analysis of Small-Scale UAV Propeller Under Two Propulsion Configurations** Sanjay Pandit (North Eastern Space Applications Centre NESAC, India); Shubham Rajendra Vispute (North Eastern Space Applications Centre (NESAC), India); Chirag Gupta, Ramani Kumar Das and S. P. Aggarwal (North Eastern Space Applications Centre NESAC, India)
8:45	**Reliability-Aware Navigation Using Lightweight Visual Localization on Resource-Constrained UAVs** Dipangshu Dutta (Assam Engineering College, India)
9:00	**Generalized Trimming of a Rolling High Performance Aircraft for Actuator Load Estimation** Gaurav Kumar, Mohit Kumar Malhotra and Amitabh Saraf (Aeronautical Development Agency, India)
9:15	**A Simulation-Based Multi-Modal UAV Sensing Framework for Through-Obstacle Human Detection in GPS-Denied Environments** Abdul Lateef Haroon Phulara Shaik, Aaftab Zohra, K Tanuja and Rehamath Unnisa (Ballari Institute of Technology and Management, India)
9:30	**An Automated Document-to-Model Framework for HIL Testing of UAV Avionics Systems** Iqsaam Ul Mukhtar and Manoharan M (Defence Research and Development Organisation (DRDO), India); Priyanka Shrivastava (MathWorks, India)
9:45	**Coverage Analysis of Tactical UAV Networks Under Electromagnetic Pulse Attacks** Subhojit Sarkar (Indian Institute of Technology, Goa, India); Sharad Sinha (Indian Institute of Technology Goa, India); Neelakandan R (IIT Goa, India)

Tuesday, July 21 | Tulip | 8:00 - 10:00 Hrs

S58: COMNET-II

Chairs: Manoj Bs (Indian Institute of Space Science and Technology, India), Sumitesh Sarkar (Indian Space Research Organization, India)

8:00	**A Method for QoS Improvement and Doppler Emulation in DS-CDMA Wireless Systems** Vikas Kumar and Pavan Kumar Yerrolla (Bharat Electronics Limited, India); Hari Krishna Boyapati (Bharat Electronics Limited & Central Research Labortory-BEL, India); Lancy Mathews (Bharat Electronics Limited, India)
8:15	**Fully Coherent DOA Estimation Using Moving Coprime Arrays** Rohini Dakulagi (National Institute of Technology Karnataka, Surathkal, India); Ravi Raushan and Gadibavi Prasanth Kumar Reddy (National Institute of Technology, Karnataka, Surathkal, India)
8:30	**Comparative Performance Analysis of AODV and OLSR Routing Algorithms on LEO Satellite Constellation Using NS3** Payal Saxena (Deal-DRDO, India); Karan Singh Bisht (Evon Technologies, India); Chandra Mohan Sharma, Pradeep Dhaka and Kranti Kumar (Deal-DRDO, India)
8:45	**Investigation on Deployment of Microservice Integrated Fog Agent for Mission Critical Application in Terrestrial Communication** Abhijit Bora, Kishore Medhi, Pranjit Kakati, Moushumi Barman and Mriganka Gogoi (Assam Don Bosco University, India)
9:00	**Blind Modulation Classification on Live Signals Using Machine Learning Techniques** Akhil Krishna R (Centre for Airborne Systems, India); Ranganayukulu M (Government, India)
9:15	**A Statistical Approach for Detection and Mitigation of Erroneous Pseudorange Measurements for Improved NavIC Receiver Positioning Accuracy** Kodem Sowmya and Priyadarshanam Hari (Indian Institute of Space Science and Technology, India)
9:30	**Performance Analysis of Satellite-5G Integrated Networks: GEO Vs LEO Delay and Throughput Trade-Offs** KA Nethravathi (RVCE, India); Harika R, Jayashree Shivakumar and Nandana P Pillai (RV College of Engineering, India); Sujit Kumar (Callmatic, India); Avik Banerjee (RV College of Engineering, India)
9:45	**Novel Deep Learning-Based User Plane Architecture for Enhanced Aerial Communication in 6G** Tushar Vrind (Samsung Electronics, India); Rohit Kumar and Pavan Kumar Devarayanigari (SAMSUNG, India); Debabrata Das (International Institute of Information Technology - Bangalore, India)

Tuesday, July 21 | Poinsettia 2 | 8:00 - 10:15 Hrs

S60: MD | Microwave Devices

Chairs: Subrata Kumar Datta (MTRDC DRDO, India), Machavaram V. Kartikeyan (Indian Institute of Technology, Roorkee, India)

8:00	**Realization of Temperature Compensated L2 Band Coaxial Circulator** Md Ehsanul Haque and Ashish Jain (Space Applications Centre, ISRO, Ahmedabad, India)
8:15	**A Compact, Ultra-Wideband 2-18 GHz Bias-Tee with Improved Isolation** Shrawan Kumar Patel (Guru Ghasidas Vishwavidyalaya Bilaspur CG, India); Chetan Kumar Nagar and Mrinal Kanti Mandal (Indian Institute of Technology, Kharagpur, India)
8:30	**A Compact, Wideband 4 × 4 Butler Matrix Using Modified Schiffman Phase Shifter** Shrawan Kumar Patel (Guru Ghasidas Vishwavidyalaya Bilaspur CG, India); Ankit Yadav (IIT Kharagpur, India); Mrinal Kanti Mandal (Indian Institute of Technology, Kharagpur, India)
8:45	**Wideband 3-Way Unequal Power Divider in Waveguide Technology with High Port Isolation** Nikhil Gupta (Bharat Electronics Limited, India); Akshay Warkade (Bharat Electronics Ltd, India); Seema Doongarwal (Bharat Electronics Limited & Ghaziabad, India)
9:00	**Equivalent Circuit Analysis Based Design Approach for Printed Microstrip Diplexer for Faster Computation** Kashish Grover and Devendra Kumar Sharma (Space Applications Centre, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India)
9:15	**Novel Slot Coupled TM01 Mode Transducer for Rotary Joint Applications** Jashuwa Mydam and Sunil Kumar Saw (Space Applications Centre, ISRO, India); Alok Kumar Singhal (Space Applications Centre, India); Sravan Kumar Sagi (Space Applications Centre ISRO, India); Milind B Mahajan (Space Applications Centre, ISRO, India); Sanjeev Kulshrestha (Space Application Centre, ISRO, India)
9:30	**Design and Realization Challenges of Ka-Band Cross-Coupled SIW Filters for Space Applications** Shivam Tiwari, Kasifkhan A Pathan and Vineet K Dad (Space Applications Centre, India); Praveen Ambati (SAC-ISRO, India)
9:45	**Topology-Independent Tunable Planar RF Filters Using Capacitive Tuning and Advanced Optimization** Sourabh Mukund Joshi and Shashank Kulkarni (MathWorks India Private Limited, India)
10:00	**Development of an X-Band Bandpass Filter with Superior Harmonic Rejection** Paramita Banerjee (SAMEER KOLKATA CENTRE, India); Aritra Banerjee and Basudha Lahiri (SAMEER, India)

Tuesday, July 21 | Heliconia 1 | 8:00 - 10:15 Hrs

S61: mm-wave/THz

Chairs: Madhumita Chakravarti (Defence Research and Development Organisation (DRDO), India), A. r. Harish (Indian Institute of Technology Kanpur, India)

8:00	**Compensated Wire and Ribbon Bond Interconnects for Efficient W-Band MMIC Waveguide Packaging** Shambo Som and Mousumi Sarkar (SAMEER, India); Sukhendu Bhanja (Scientist D, India); Arijit Majumder (Society for Applied Microwave Electronic Engineering & Research, India)
8:16	**W-Band Highly Compact Broadband Variable Waveguide Attenuator with 60 dB Dynamic Range** Sagnik Chakrabarti (SAMEER, India); Sukhendu Bhanja (Scientist D, India); Mousumi Sarkar (SAMEER, India); Arijit Majumder (Society for Applied Microwave Electronic Engineering & Research, India)
8:33	**A Graphene-Based Terahertz Metamaterial Absorber with Polarization-Insensitive Characteristics** Pratyancha Prasad (Motilal Nehru National Institute of Technology Allahabad, India & NIT Jamshedpur, India); Krushna Kanth Varikuntla (Queen's University Belfast, United Kingdom (Great Britain) & Queens's University Belfast, United Kingdom (Great Britain))
8:50	**Design and Experimental Validation of mmWave Programmable Multi-Mode OAM Generation Using Beamformer Chips** Prasad S (SAMEER - Centre for Electromagnetics, India); Danduri Koti Reddy (SAMEER, India); Sharmila S (SAMEER-CEM); P Rao (Centre for Electromagnetics, SAMEER, India)
9:07	**Design of a Dual-Band Multilayer SIW-CDRA with Circularly Polarized and Graphene-Based Tunability for THz Applications** Yakub Banoth and Amarjit Kumar (National Institute of Technology Warangal, India); Sunit D Fulari (NIT Warangal); Ajay K Poddar (Synergy Microwave Corporation, USA & Oradea University Romania, Romania); Ulrich Rohde (Synergy Microwave Corp., USA)
9:24	**High Gain Wideband Compact Horn- Plano Convex Dielectric Lens Antenna for 5G Millimeter Wave Communications** R Venkateswaran (Ministry of Defence & MTRDC, India); p Srikrishna (MTRDC, India); Subrata Kumar Datta (DRDO, India); Kannadassan Dhanaraj (Vellore Institute of Technology, India)
9:41	**A Graphene-VO2 Hybrid Terahertz Multiband Metasurface Absorber (HTMMA) for Wideband and Two Distinct Narrowband Responses** Saurabh Bhokare (HCL Tech, India); Pratyancha Prasad (Motilal Nehru National Institute of Technology Allahabad, India & NIT Jamshedpur, India)
9:58	**Development of Waveguide Band Pass Filters at D-Band and J-Band** Dhruba Das (SAMEER, India); Sibabrata Mondal (SAMEER, MeitY, India); Arun Kumar (SAMEER, India); Arijit Majumder (Society for Applied Microwave Electronic Engineering & Research, India); Patnam Hanumantha Rao (SAMEER, India)

Tuesday, July 21 | Heliconia 2 | 8:00 - 10:15 Hrs

S62: MORS-II | Microwave/Optical Remote Sensing

Chairs: Nilesh M. Desai (Space Applications Centre, ISRO, India), V S Hegde (ISRO, India)

8:00	**Streak-Based Imaging and Multi-Ground-Station Localization of LEO Objects for Space Electronic Warfare** Suman Agrawal (Defence Research and Development Office, India); Madhura Barshikar (DRDO, Hyderabad, India)
8:15	**Automated Waterbody Coverage Mapping Using EOS-04 SAR Data: A Case Study over the Brahmaputra and Ganga River Basins** Aakashneel Basak (NRSC, ISRO, India); Sauvic Dutta (NRSC, India); H. S. V. Usha Sundari Ryali (ISRO, NRSC, India); Muralikrishnan S (Indian Space Research Organization, National Remote Sensing Centre, India)
8:30	**Advanced Multi-Sensor Data Processing and Merging Method for High-Resolution Precipitation Mapping Using Space-Based and Ground Based Sensors** Shweta Shukla (ISTRAC, Bangalore, India); Shivangi Mishra (ISTRAC, ISRO, India)
8:45	**RSO Detection Using Optical Telescopes: Performance Model and Experimental Validation** Aman Kumar, Avadhesh Pratap Singh and Siddharth Negi (IRDE DRDO, India); Abhijit Chakraborty and Manvendra Singh (IRDE, DRDO, India)
9:00	**Hyperspectral Payload: Performance Testing and Characterization Methodology** Siddharth Negi, Avadhesh Pratap Singh and Aman Kumar (IRDE DRDO, India); Soumya Singh Parihar (Madhav Institute of Technology and Science, India); Abhijit Chakraborty and Manvendra Singh (IRDE, DRDO, India)
9:15	**CIIESITS: Cloud Induced Incongruity Elimination in Satellite Image Time Series** Ankit Srivastava (Vikram Sarabhai Space Centre, India); Manoj Bs (Indian Institute of Space Science and Technology, India); Neeraj Badal (Space Applications Centre, ISRO, India)
9:30	**Change Detection in Remote Sensing Data Using Memory Optimized IPCA and MiniBatchKMeans** Maheshwaran Y (CABS, India); Vinod Kumar Rajak (CABS DRDO, India); Shiraz Sohail (National Institute of Technology Tiruchirappalli, India)
9:45	**Satellite Remote Sensing and AI-Based Safety Framework for Agritourism in India** Gavendra Singh, Ajay Kumar Gupta and Diptiranjan Samantaray (University of Delhi, India)
10:00	**Lab Demonstration of Phase Synchronization for Tandem SAR** Akshay Pandit Vetal (Space Application Centre, India & ISRO, India); Ashok Rohada (Space Application Centre, India); Prantik Chakraborty (SAC ISRO, India); Pankaj K Nath (Space Application Centre, India); Cvn Rao (Space Applications Centre (ISRO), India)

Tuesday, July 21 | Hibiscus 1 | 8:00 - 10:15 Hrs

S63: PLNDA | Power/Low Noise/Driver Amplifiers

Chairs: Umakant Goyal (Solid State Physical Laboratory, India), Kamaljeet Singh (Semi-Conductor Laboratory, India)

8:00	**Advanced Deep Learning Technique for Digital Predistortion to Improve Power Amplifier Linearity** Nirbhay Kumar Singh (Bharat Electronics Limited, India)
8:15	**Design and Development of 190 Watt Solid-State Pulsed Power Amplifier with at X-Band** Aritra Banerjee, Souma Chatterjee, Mrinal Rajak and Arun Kumar (SAMEER, India)
8:30	**Development of a Ku-Band Pulsed Helix-TWT for LEOs Application** Talur Chanakya (DRDO, India); K Venkateswara Rao (MTRDC DRDO, India); Raja Ramana Rao (MTRDC, India); Anish Bopche, Jyotirmoy Koner and Senthil Kumar (BEL Bangalore, India); Sidharthan P (Microwave Tube Research and Development Centre & Defence Research and Development Organization, India); S K Datta (Microwave Tube Research & Development Centre, India)
8:45	**Impact of Electronic Efficiency on the Performance of Collector in Traveling Wave Tubes** Deepali Yadav (Banasthali Vidyapith, India); A Mercy Latha (CSIR- CEERI, Chennai Centre, India); Meenu Kaushik and Vishant Gahlaut (Banasthali Vidyapith, India)
9:00	**Design of a Compact 10-12GHz Front-End MMIC Chip with an Integrated Multi-Stage LNA, Equalizer and Subharmonic Mixer** Nikky Srivastava (ISRO, India); MD. Tosicul Wara (UR Rao Satellite Center, Indian Space Research Organisation, India); Vishnu Kishore Pai (Government of india & I.S.R.O, India); Dhiraj Kumar, Rajeswari and Anjani Srilaxmi (URSC, India)
9:15	**An X-Band LNA MMIC Using 250nm GaN HEMT Technology for Radar Applications** Akhilendra Krishna (Scientist E, India); Sudhir Kumar (Scientist-E, India); Umakant Goyal (Solid State Physical Laboratory, India); Devendra Verma (Solid State Physics Laboratory, India); Meena Mishra (Scientist F, India)
9:30	**Design of 3.8 GHz Low Noise Amplifier Microwave Circuit for SDR Applications** Shreehari H S and Dharanidhar M (Chanakya University, India)
9:45	**A Ka-Band Driver Amplifier for AESA Radar Application** Divya Kumar Garg (Drdo, India)
10:00	**Multi-Signal Nonlinear Analysis of a High Power, High Gain 0.22-THz TWT Amplifier** Vishnu Srivastava (India)

Tuesday, July 21 | Hibiscus 2 | 8:00 - 10:15 Hrs

S64: ENPT | Electric & Nuclear Propulsion Technologies

Chairs: Deepak Agarawal (LPSC, India), Ramana Murty S V (Director, GTRE, DRDO, India)

8:00	**Computational Analysis of Plasma Dynamics in Magnetic Nozzle of ECR Thruster Using PIC Simulation** Shradul Sharma (Liquid Propulsion Space Center, India); Asish James (Indian Space Research Organisation, India); Shashi Kumar Kasturi, Anooja Sankar and Raji George (Indian Space Research Organization, India)
8:15	**Visualization and Physical Interpretation of Helicon Wave Field Structures in Cylindrical Magnetized Plasma Configuration** Shradul Sharma (Liquid Propulsion Space Center, India); Asish James (Indian Space Research Organisation, India); Anooja Sankar and Raji George (Indian Space Research Organization, India)
8:30	**Experimental Evaluation of 600 Hours Endurance Testing of Hall Effect Thruster** Shashi Kumar Kasturi, Anooja Sankar, Raji George and Shibu Mathew (Indian Space Research Organization, India)
8:45	**Development of a Xenon Flow Control System for Satellite Electric Propulsion Applications** V Abarna, Karthikeyan N, Vijay Kumar, Vijay Kumar Guvvada and Shanbhouge K M (ISRO, India)
9:00	**Experimental Investigation of Mode Transition in the Ionization Stage of RF Plasma Engine** Asish James (Indian Space Research Organisation, India); Vara Prasad Kella, Anooja Sankar and Raji George (Indian Space Research Organization, India)
9:15	**Study of Low Frequency Oscillations in Hall Thrusters Using a One Dimensional Hydrodynamic Plasma Model** Panuganti Shekhar Konetirao (Liquid Propulsion Systems Centre, India & Indian Space Research Organisation, India)
9:30	**Magnetic Field Variation Tests on an Engineering Model of 5 kW Class HET** Panuganti Shekhar Konetirao (Liquid Propulsion Systems Centre, India & Indian Space Research Organisation, India)
9:45	**Design and Development of a High-Power RF Feed System for an Electrodeless RF Plasma Thruster** Asish James (Indian Space Research Organisation, India); Shashi Kumar Kasturi and Anooja Sankar (Indian Space Research Organization, India)
10:00	**Gas Turbine Engine Ignition with Solid-State Nanosecond Transient Plasma** Murtuza Lokhandwalla (Collins Aerospace, USA); Rupan Sarkar, Priyanka H, Viharsha Geereddy and Om Shankar Pandey (Collins Aerospace, India)

Tuesday, July 21 | Poinsettia 1 | 8:00 - 10:00 Hrs

S64: PE-II | Power / Energy / Power Electronics

Chairs: Ranganath S Ekkundi (UR Rao Satellite Centre, India), S n Singh (IIT Kanpur, India)

8:00	**Novel Methodology Using LLC Dynamic Gain Control Topology for Reducing Holdup Capacitor to Meet Power Interruption Time for Airworthy Hardware** Abdul Latheef Rahamadullah, Adarsh M and Nishanth Beedu (Boeing India, India); Rajeev Ranjan (Boeing, India)
8:15	**A Common-Grounded Hybrid Multilevel Inverter for Aerospace Applications** Devaragottu Rahaman (Indian Institute of Science, Bengaluru, India); Tapas Roy (Indian Institute of Science, India)
8:30	**From Runway to Orbit: Adapted Aeroderivative Turbofan Engines as Power Generation Systems for Spacecraft Applications** Mudit Mishra (Harcourt Butler Technical University, Kanpur, India)
8:45	**Design and Experimental Validation of a PCB-Based Axial Flux BLDC Motor for Space Applications** Shashank Seth and Olive Ray (Indian Institute of Technology Bhubaneswar, India)
9:00	**Design and Bending Analysis of a Conformal ISM-Band Microstrip Antenna for Spaceborne Wearable Applications** Uma Maheswari Yarram (VIT-AP University, India); Bappadittya Roy (VIT-AP University, Amaravati, India); Anitha (VIT AP, India); Maddirala Ajay Kumar (VIT, India)
9:15	**A LTCC Based RF Front-End Multi-Chip Module: Design, Fabrication and Performance Evaluation** Harimohan Singh (Space Applications Centre, ISRO Ahmedabad, India); Prakhar Kumar Srivastava (SAC/ISRO, India); Santanu Sinha (Space Applications Centre, ISRO, Ahmedabad, India); Ekta Saini (Space Applications Centre, ISRO, India); Sumit Kumar Shukla (SAC ISRO, India); Punam Tyagi (Space Applications Centre, India); Mukesh Patel (SAC, ISRO, India)
9:30	**Polarization-Independent Control of a Wideband Circularly Polarized Magnetoelectric Dipole Antenna for V2X Application** Vinay Agarwal (Vasai College of Engineering, India); Ramya R (Unistring Tech Solutions Pvt. Ltd, India); Usha Sunkari (Sardar Vallabhbhai National Institute of Technology, India); Rachit Jain (Manipal University Jaipur, India)
9:45	**Quality Assurance During Ruggedization of a Commercial-off-the-Shelf Uninterruptible Power Supply for Use in Missile GSE** Srilatha Choudam (Advanced Systems Laboratory & Bharatiya Engineering Science and Technology Innovation University, India); Choudam Srilatha (Bharatiya Engineering Science and Technology Innovation University, India)

Tuesday, July 21	
10:00 - 10:30	**TCBN5: Tea/Coffee Break & Networking**
10:15 - 10:30	**TCB5: Tea/Coffee Break** **Room:** Poinsettia 2, Heliconia 1, Heliconia 2, Hibiscus 1, Hibiscus 2
10:30 - 12:50	**Room: Scarlet 2** **MI: Move India: 1st Anniversary Celebrations** Ms. Sadhana Attavar, Dr. Suresh Nair, Dr. Chengappa M R, Prof. Kathleen Kramer
10:30 - 12:50	**Room: Scarlet 1** **SS: Application of AI/ML in Airborne Surveillance Systems** 1. Next Generation manned Airborne Surveillance in AI era for strengthening Inida's Defence **(Keynote);** 2. AI/ML Advances and Challendes in Airborine Surveillance System, 3. AI for Aerial Image Based Target Detection, 4. AI for Maritime Surveillance SIGNIT/COMJAM
12:50 - 13:50	**LBN3: Lunch Break & Networking**
13:30 - 15:30	**CCM: R10 Chapter Chairs Meeting** **Room:** Scarlet2
13:30 - 15:30	**Room: Scarlet 1** **SS: Next Gen Technologies in Radar System** **Chairs:** Sreenivasulu K (Electronics & Radar Development Estt., India), Suchith Rajagopal (LRDE, India) 1. Recent Trends in Photonics Technologies in Radar Application - Dr Meena D, Scientist G, 2. AI in Signal Processing - Shri. Senthil Rengarajan J, Scientist G, 3. Trends in ERP Technologies - Shri. Sumanta Pal, Scientist F, 4. Meta-material based Antenna Arrays - Smt. Preeti Dongaonkar, Scientist F, 5. Digital Array based Radar - Shri. Elayaperumal S, Scientist F
13:30 - 15:30	**Room: Scarlet 3** **YFLP: Young Faculty Laureate Program** 1. Multi-beam Generation Using Digitally Coded Metasurfaces - Jogesh Chandra Dash, National Institute of Technology Rourkela 2. Metagratings-based Reconfigurable Intelligent Surfaces for N-LOS Radar Surveillance - Sreenath Reddy Thummaluru, IIIT DM Kancheepuram 3. Radar Cross Section Reduction of Antennas and Frequency Selective Surfaces - Surbhi Arora, SRM Institute of Science and Technology, Chennai 4. Defence & Strategic Technologies - Rajesh Singh, DIAT Pune 5. Investigations on Intelligent Control Mechanisms for Next-Generation Aerospace - Kritika Bansal, VIT-AP, Amaravathi 6. Dielectric Resonator Antennas for Defense Application - Pinku Ranjan, ABV-IIITM Gwalior 7. Robust Lightweight Vision Models for Autonomous Monitoring and Surveillance in Challenging Aerospace and Defence Environments - Sobhan Kanti Dhara, National Institute of Technology Rourkela 8. Impact of marine microplastics (MP) in Underwater Imaging and optical wireless communication - Rashmita sahoo, Dayananda Sagar University
15:30 - 16:00	**TCBN6: Tea/Coffee Break & Networking**

Tuesday, July 21 | Amaryllis | 16:00 - 18:00 Hrs

S65: ESVRMNE | Embedded Systems / VLSI / RFIC / MMIC / Nano-electronics

Chair: Sreelal S, Vikram Sarabhai Space Centre, India

16:00	**RTL Implementation of Design and Verification of Micro-Architectural Asynchronous FIFO** Rashmi Priyadarshini B K, Mrinal Sarvagya, Punith Kumar D H and Jyothy ST (School of Electronics and Communication Engineering, REVA University, Bengaluru, India); Ramreddy (School of Electronics and Communication Engineering REVA University Bengaluru, India)
16:15	**Analysis and Generation of Multiplexed BOC Modulation for Modernized GNSS Signals** Bhanu Panjwani (Indian Space Research Organization, India); Mohanchur Sarkar (Space Application Centre (ISRO) Ahmedabad, India); Uttama Lahiri (Indian Institute of Technology Gandhinagar, India)
16:30	**Radiation Testing & Characterization of Radiation Hardened Dual Port SRAM** Pramod Mishra (Indian Space Reasearch Organization India, India & Indian Institute of Technology Gandhinagar, India); Avadhesh Kumar (SAC-ISRO, India); Saraswati Sharma (ISRO, India)
16:45	**Multi-Satellite Deployment Sequencer** Kalyani Vishnu (Scientist/Engineer - SE, Flight Computers Division, Avionics Entity, VSSC ISRO, India); Remya Raj (Vikram Sarabhai Space Centre, ISRO, India); Arundev V and Jessy P Mathew (Indian Space Research Organisation, India)
17:00	**Steep-Slope Transport Characteristics of a 3D Cylindrical Silicon Nanotube Gate-All-Around TFET with HfO_2 Gate Dielectric** Dharanidhar M and Shreehari H S (Chanakya University, India)
17:15	**Security Characterization of Fredkin Gate-Based Arbiter PUFs Using Multi-Algorithm Machine Learning Modeling Attacks** Chinni Prabhunath G and Ambika Prasad Shah (Indian Institute of Technology Jammu, India)
17:30	**Design and Analysis of a MOSFET Memristor Emulator with a Resistor-NMOS Capacitor Network Using 180 nm Technology** Arnav Vinod (Somaiya Vidyavihar, India); Balwant Kr Singh (Somaiya Vidyavihar University, India)
17:45	**Direct Sampling Shared Aperture Compact Direction Finding and Monitoring System** Mradul Maurya (Centre for Airborne Systems - DRDO, India); Ankita V Jaiswal (Defence Research and Development Organization, India); Nanditha Unnikrishnan (CABS DRDO & Defence Research Development Organization, India); Ramkumar Raghu (Defence Research and Development Organization, India & Indian Institute of Science, India); Bhavish Kumar (Defence R&D Organisation & Min of Defence, Government of India, India); R Rajesh (CABS, India)

Tuesday, July 21 | Petunia | 16:00 - 18:00 Hrs

S66: ASTAA | Advancement in Stealth Technologies for Airborne Application

Chair: Vijay Kumar Sutrakar, ADE, DRDO, India

16:00-16:15	**Invited Talk: Multi physics Simulation for Next-Generation Space & Defence Systems** Swapnil Parekh, COMSOL
16:15	**Physics-Based Symbolic Dynamic Filtering (PB-SDF) Approach to Securing Aerial Cyber-Physical Systems** Pristley Sathyaraj Selvakumar Samraj (Delta Airlines & PSNCET, India); Edward Rajan (Mepco Schlenk Engineering College, Sivakasi, India); Jehovah Jireh Arputhamoni (PSN Engineering College, India)
16:30	**2D Direction of Arrival Estimation in Ultra-Low SNR of Frequency Modulated Signal Using Space-Time Modulated Metasurface and RCS Optimization Using QEA** Atharva Joshi (Visvesvaraya National Institute of Technology Nagpur, India); Neeraj Rao (Visvesvaraya National Institute of Technology Nagpur, Maharashtra & Ministry of Human Resource and Development, India)
16:45	**Design of a Dual-Function Frequency Selective Surface Rasorber with Wideband Transmission and High-Frequency Absorption** Anjali Kumari (Indian Institute of Technology, Jammu, India); Archana Rajput (Indian Institute of Technology Jammu, India & IIT Jammu, India)
17:00	**Estimation of Chaff Effectiveness: A Multiphysics Simulation Approach** Vaishnavi Bhope (Synopsys India Pvt Ltd, India); Nijas Cm (Ansys Software Pvt Ltd & Ansys, India); Vishal Tripathi (ANSYS SOFTWARE PVT LTD, India); Shankar Kaira (Synopsys India Pvt Ltd, India)
17:15	**A Novel Dual-Band Dual-Polarized Shared-Aperture Antenna for Next-Generation Airborne Space Communication Systems** Vadlamudi Roja (National Institute of Technology, TRICHY & NIT TRICHY, India); Balakrishna Islavath (MeitY & Govt of India, India)
17:30	**Switchable Metasurface for RCS Reduction and Beam Steering for Aerospace and Defence Systems** Sumit Gaurav (Indian Institute of Technology, Indore, India); Patinavalasa Megh Sainadh (Indian Institute of Technology Indore, India); Vijay Kumar Sutrakar (ADE, DRDO, India); Saptarshi Ghosh (Indian Institute of Technology Indore, India)
17:45	**Metagrating-Based Switchable Rasorber for X-Band Stealth Radome** Jayaprakash K P, Sudeeven Kumar Nagadesi, Navya K P and Sreenath Reddy Thummaluru (IIITDM Kancheepuram, India); Machavaram V. Kartikeyan (Indian Institute of Technology, Roorkee, India)

Tuesday, July 21 | Scarlet 1 | 16:00 - 18:00 Hrs	
S67: RT-IV | Radar Technology **Chair:**	
16:00	**Lightweight Real-Time Classification Framework Using Layered Transfer Learning for Radar Micro-Doppler Signatures** Sai Harsha Vardhan K, Saritha Anireekshita, Venkata Nagabhushanam Jetty and Ramesh Babu P (Bharat Electronics Limited, India)
16:15	**Neural Combinatorial Fusion for Deterministic Radar Tracking with Calibrated Uncertainties** Muthukumar K A (SSN College of Engineering, India & Shinkai-labs Pvt. Ltd, India)
16:30	**Radar-Based Thunderstorm Nowcasting Using STFormer Networks: A Case Study over Indian City** Shweta Shukla (ISTRAC, Bangalore, India); Shivangi Mishra (ISTRAC, ISRO, India); Deepak Mishra (IIST, India)
16:45	**A Compact Fractal Hexagonal UWB Microstrip Antenna for Communication, Sensing, and Radar Applications** Makkhan Singh Gurjar (Defence Institute of Advanced Technology, India); Kailas Sawant (DIAT, India)
17:00	**Near-Field FMCW-SAR Image Reconstruction Using Machine Learning Approaches** Venkata Naga Sai Kiran Damarla (SRM University, India); Surya Prakash G and Prasannakumar Seelam (SRM University, AP, India); Rupesh Kumar (SRM University AP, India)
17:15	**Fundamental Analysis of ACS Pointing Jitter and Stability Requirements for Spaceborne SAR Imaging Platforms** Chiranjib Guha Majumder (Indian Space Research Organization, India); Harish K Joglekar (URSC, ISRO, India); Mohan Sundara Siva (Government & Indian Space Research Organisation, India)
17:30	**Passive Radar Design for Multi Target sUAV Detection Using Adaptive OS-CFAR and Low-Doppler Track Confirmation** Pratika Roy (Defence Institute of Advanced Technology, India); Arockia Bazil Raj (Defence Institute of Advanced Technology Pune, India)
17:45	**Design and Development of Reconfigurable Radar Test Rig for Testing of Multi-Band Radar System** Bhupendra Kumar (Centre for Airborne Systems DRDO, India); Anand Kumar C S (Government, India); Karthik Bodaballa (Centre for Airborne Systems DRDO, India); Ranganayukulu M (Government, India); A K Singh (Centre for Airborne Systems, India)

Tuesday, July 21 | Scarlet 2 | 16:00 - 18:00 Hrs

S68: EMI/EMC/GST | EMI/EMC/Ground Support Technologies

Chair: Mahadevan Vaidyanathan (ISRO & PES University, India)

16:00	**A Rapid in-Situ Screening Method for Building Level HEMP Shielding Effectiveness Using Ambient RF Signals** Sumit Tomar (NIT Delhi, India & DRDO, India); Manoj Kumawat (National Institute of Technology Delhi, India); Vivek Shrivastava (NIT Uttarakhand, India); Shyam Prakash (National Institute of Technology Delhi, India)
16:15	**Quiet Zone Analysis of Anechoic Chamber Using MoM/MLFMM Method** Dharmendra Singh (Space Applications Centre, SAC ISRO, India)
16:30	**Adaptive Kalman Filter Based Mitigation of Chirp Interference in NavIC Signals** Surya Narayana Murthy Tummala (JNTUGV, India & JNTUK, India); Divyasree Uddandapu (GVP(A), India); Devanaboyina Venkata Ratnam (K L University, Greenfields, India)
16:45	**Design and Analysis of Dual Band Stacked Dual Ring Intelligent FSS Arrays for Satellite Applications** Venkanna Naik Bhukya (IIIT Nagpur, India); Pithani Akhil (RGUKT Nuzvid, India); Vinod Babu Pusuluri (RGUKT, India & JNTU Kakinada & RGUKT Nuzvid, India)
17:00	**Mutual Coupling Based RFI Mitigation in Terahertz Full-Duplex Nano-Antennas** Durga Prasad Purbey (Indian Institute of Technology Kharagpur, India); Sandip Ghosal (NIT Rourkela, India)
17:15	**EM-LabSuite: A Cloud-Based Management Platform for Electromagnetics Research Laboratories** Ravi Kumar Arya (Zhongshan Institute of Changchun University of Science and Technology, China); Maxon Okramcha (Changchun University of Science and Technology & Xiangshan 5G/6G Laboratory, China); Mohammad Akib (Zhongshan Institute of Changchun University of Science and Technology, China); Zuobin Wang (Changchun University of Science and Technology & International Reserach Centre for Nano Handling and Manufacturing of China (CNM), China); Junwei Dong and Shiyuan Kong (Zhongshan Institute of Changchun University of Science and Technology, China); Lijuan Li (Changchun University of Science and Technology, China)
17:30	**Wall-Reflectivity Measurements of the Critical Point in the ISRO CATF** Amin Enayati (Emerson & Cuming Anechoic Chambers, Belgium); Joachim Vanwesemael (E&C Anechoic Chambers, Belgium); Marc Dirix (E&C Anechoic Chambers, Belgium & RWTH-Aachen University, Germany); Puneet K Mishra (URSC, India)
17:45	**GAN-Based Intelligent Jamming and Neural anti-Jamming in Wireless Image Transmission** E. Lakshmi Chetan (Amrita Vishwa Vidyapeetham, Amaravati, India); P Jeevan Reddy (B.Tech, India); Anand Kumar (Amrita School of Engineering, India)

Tuesday, July 21 | Scarlet 3 | 16:00 - 18:00 Hrs

S69: BAS | Special Session on Bhartiya Antriksh Station

Chair: Sri Niwas Sahu, UR Rao Satellite Centre, India

16:00	**Human-in-the-Loop Training for Bharatiya Antariksh Station Robotic Manipulation Tasks** Elena Lopez-Contreras (Higher Institute of Aeronautics and Space, France); Suprakas Saren (Indian Institute of Science, Bengaluru, India); Pradipta Biswas (Indian Institute of Science, India); Raphaëlle N. Roy and Vsevolod Peysakhovich (Fédération ENAC ISAE-Supaero ONERA, France)
16:15	**Visual Servoing and Compliance Control: Real World Applications on Space Robot** Sangeetha Geetha Rajasekharan (Indian Space Research Organisation & ISRO Inertial Systems Unit, India)
16:30	**Towards System Level Autonomy in BAS Operations Through AI Enabled Robotics** Harikumar Ganesan, Lima Agnel Tony, Dhanesh S, Sangeetha Geetha Rajasekharan, Durairaj R and Joji J Chaman (ISRO Inertial Systems Unit)
16:45	**Deterministic Object Pool Memory Allocation for Embedded Space Robotics Using Hierarchical Bitmasks** Abhay Dileep (IISU, India); Jyothish M (Vikram Sarabhai Space Centre, India); Harikumar Ganesan (ISRO Inertial Systems Unit, India); Sangeetha Geetha Rajasekharan (Indian Space Research Organisation & ISRO Inertial Systems Unit, India); Durairaj R (Scientist, India)
17:00	**Hall Effect Thruster Based Orbit Transfer and Station Keeping for a Space Station** Raahil Rana (Indian Space Research Organization, India); Panuganti Shekhar Konetirao (Liquid Propulsion Systems Centre, India & Indian Space Research Organisation, India); Raji George (Indian Space Research Organization, India)
17:15	**Novel Avionics Architecture for Space Station with Improved Reliability and Reduced Complexity: Comparative Analysis with Existing Architectures** Vatyam Sai Kraanthi (URRao Satellite Centre, India & ISRO, India); Gaurav Yadav (Indian Space Research Organisation, India)
17:30	**Hybrid-Adhesion Six-Legged Swarm Robot for Spacecraft and Habitat Inspection** Rudraswamy Shivalingappa Basavarajappa (Sri Jayachamarajendra College of Engineering, India); Rakesh M D (SJCE, JSS Science and Technology University, India); Prathvi Raj M V (JSS Science and Technology University Mysore, India); Anirudha S (JSS Science and Technology University, Mysore, India)
17:45	**Real-Time Dual-Spacecraft Visualization Framework for Rendezvous and Docking Missions** Bijoy Kumar Dai (ISTRAC, India & Jadavpur University, India); Deepanshu Garg, Leo Jackson and Nandini Harinath (ISTRAC, India)

Tuesday, July 21 | Tulip | 16:00 - 18:00 Hrs

S70: SSI & SDR | Room: Tulip

Chair: Bhudeb Chakravarti, Adamas University, India

16:00	**Venus Fluxgate Magnetometer (VFGM) Onboard Indian Venus Orbiter Mission (VOM)** Vipin Kumar Yadav (Vikram Sarabhai Space Centre, India); Vijaya Y (Scientist, India); Srikar P Tadepalli (UR Rao Satellite Centre, Bengaluru, India); Krishnam Prasad B (Indian Space Research Organization, India); Ankush Bhaskar (Vikram Sarabhai Space Centre, Thiruvananthapuram, India); Monika Mahajan (Laboratory for Electro-Optical Systems, Peenya, Bengaluru, India)
16:15	**Design, Development and Evaluation of ENWi, LP and ETA Scientific Payloads in PSLV Orbital Platform** Rosmy John (Vikram Sarabhai Space Centre, ISRO, India); Rajiv Ranjan (Vikram Sarabhai Space Centre, India); Pradeep Kumar P (Kerala University of Digital Sciences, Innovation and Technology, India); Manju G, Smitha Thampi and Sreelal S (Vikram Sarabhai Space Centre, India)
16:30	**Ionospheric Anomalies During Severe Geomagnetic Storms: Insights from Continuous Ionosonde Monitoring in 24th Solar Cycle** Bhupendra Malvi (India); Prateek Saurabh Srivastav (D Y Patil International University, India); Pramod Purohit (National Institute of Technical Teachers Trainig and Research, India)
16:45	**A Novel Front End Protection Technique for Enhancing the Power Quality in an Avionics Grade DC-DC Power Supply** Anway Das (Boeing India Private Limited, India); Rajeev Ranjan, Nidhi Tiwari and Akash Deep (Boeing, India)
17:00	**Low-Cost Vision-Guided Telescope Tracking System for Lunar Observation** Shiva Dhanush S, Sai Venkata Jaswant Kolupuri and Satyatma Chincholi (RV University, India)
17:15	**Development of SDR-Based Image Transmission System Using GNU Radio and MATLAB** Ramesh Deshpande (B V Raju Institute of Technology, India & Koneru Lakshmaiah Education Foundation, India)
17:30	**Link-Level Performance Analysis and SDR-Based Experimental Validation of 5G NR Sidelink for Direct V2V Communication** Sree Vardhan G Sai (GITAM University Bangalore, India); Nagarjuna Telagam (GITAM University, India); Ambar Bajpai (GITAM University, Bengaluru, India); Seetha Chaitanya (GITAM University Bengaluru, India); Nagaraju A (GITAM University, Benagluru, India); Madhu Hari Charan (GITAM University Bengaluru, India)
17:45	**Chirplet-Based Analysis of Gravitational-Wave Analysis: From Classical Chirplets to Family-Based Dictionary Representations** Alexander Vicol, Ali Sher and Xiaoming Chen (University of Toronto, Canada); Steve Mann (MannLab Canada, Canada & MannLab, USA)

Tuesday, July 21 | Poinsettia 1 | 16:00 - 18:00 Hrs

S71: COMNET-III

Chairs: Imteyaz Ahmad, Indian Space Research Organisation, India; Navin Kumar, Amrita Viswa Vidyapeetham, India

16:00	**Power Efficient Wireless Systems Enabled by Semantic Communications** Sridhar Iyer (SGBIT, India)
16:15	**Maintainability Analysis of a Tethered High Altitude Platform Using an Optimization Approach Under Environmental Constraints** Dharmaraja Selvamuthu and Ankit Kumar (IIT Delhi, India); Raina Raj (Indian Institute of Technology Delhi, India); Vladimir Vishnevsky (Russian Academy of Sciences, Russia); Dmitry Kozyrev (V. A. Trapeznikov Institute of Control Sciences of the Russian Academy of Sciences & Peoples' Friendship University of Russia, Russia)
16:30	**R-SPAN: Resilient Space Networking with Inter-Constellation Coordination** Anand M and Dilip Krishnaswamy (Centre for Development of Telematics, India)
16:45	**A Comprehensive ARINC-429 Robustness Evaluation Framework: Integrated Logical Bus Loading, Latency Profiling and Error Injection Analysis** Nidhi Mittal and Deepthi VD (CABS DRDO, India); Jayaprakash K P (CABS, DRDO, India); A S Kumaran (CABS DRDO, India); Santhya P (CABS, India)
17:00	**Integrated Link Monitoring Application for the ISTRAC SATCOM Network** S Vamsi Krishna (ISRO Telemetry Tracking and Command Network, India); Sahal Mohammed M. N. (ISRO Telemtery Tracking and Command Network, India)
17:15	**Adaptive SIB19 Configuration for Seamless Interoperability Between Terrestrial and Non-Terrestrial Networks** Harshit Gupta (Bharat Electronics Limited, India)
17:30	**LBsim: A Validated Open-Source Tool for Optical Inter-Satellite Link Budget Analysis** Shivam Bhutiani (Carleton University, Canada); Satyam Bhutiani (IIIT - Pune, India); Ravleen Kaur (Banasthali Vidyapith, India)
17:45	**40 Gb/s Hybrid PDM-WDM Bi-Directional Optical ISL for NavIC GEO-GEO Communication** Shivam Bhutiani (Department of Electronics, Carleton University, Ottawa, Canada); Battiprolu Vishnu Sharma (Department of Electronics, University of Waterloo, Kitchener, Ottawa); Vivek Sri Krishna Chaitanya Konakalla (PG-DESD, CDAC Centre, Bengaluru, India)

Tuesday, July 21 | Poinsettia 2 | 16:00 - 18:00 Hrs

S72: MPCNG-V | Mission Planning / Control / Navigation / Guidance

Chairs: Jayesh Barve (GE Vernova Advanced Research Center Bangalore, India), Vinod Kumar (IN-SPACE, India)

16:00	**Optimal CAS Hold Performance of the Aircraft During Climb, Descent and Level Modes of Operation** Amit Kumar Tripathi (Indian Institute of Science, India); Akhila M R and N K Sura (ADA, India); Amitabh Saraf (Aeronautical Development Agency, India)
16:15	**FCNN-Based Semantic Segmentation: Guidance and Autonomy of Spacecraft in Martian Terrain** Prasanth Kumar Duba (Defence Electronics Research Laboratory, India); Arun Kumar Mahodaya (Directorate of Special Projects, India); Sri Ram Sista Mmkpss (Defence Electronics Research Laboratory, India)
16:30	**Mitigating EKF Linearization Errors Using Post-Filter Physics-Informed Machine Learning** Archideb Sinha (Bharat Electronics Limited, India & Central Research Laboratory, India); Vijay Baragur, Mayank Rajput and Dhurjati Prasad Das (Bharat Electronics Limited, India)
16:45	**GNSS-Based Real-Time Onboard Orbit Determination & Propagation for Nanosatellites Using COTS SAMV71 MCU** Sudheer Venkata Voodi (ISRO, India); Hemanth Reddy N (Indian Space Research Organisation, India); Prasanta Mula and Nirmala S (ISRO, India); Priyanka Kaushik (URSC & ISRO, India); Neelavathy M (URSC, India); Mukesh Kumar Gupta (ISRO, India)
17:00	**Minimum-Satellite LEO Constellation Design for Continuous Global Coverage via Mixed-Integer Optimisation with Interval-Based Visibility Constraints** Joan Bas and Albert Compte (CTTC, Spain); Joanna Sliwa (NCI Agency, The Netherlands); Konrad Wrona (NATO Communications and Information Agency, The Netherlands & Military University of Technology, Poland)
17:15	**Hybrid Cataloging of Lunar Craters: Pipeline for Lunar Satellite Pose Estimation** Riddhi Srivastava (Indian Institute of Technology, Indore, India); Abhirup Datta (Indian Institute of Technology Indore, India)
17:30	**Lunar Descent Trajectory Optimization for Feasibility Analysis of Low Mass Impact-Lander** Keziah Elizabeth George (Indian Institute of Technology Kanpur, India); Rachana Agrawal (Indian Institute of Technology, Kanpur, India)
17:45	**Integrated Controllability-Based Actuator Placement and Nonlinear Dynamic Inversion Control for Vibration Suppression of High-Aspect-Ratio Wings** Shikha Jain (National Aerospace Lab & CSIR- NAL, India); Kapil Sachan (CSIR National Aerospace Laboratories, India); Radhakant Padhi (Indian Institute of Science, Bangalore, India)

Tuesday, July 21 | Heliconia 1 | 16:00 - 18:00 Hrs

S73: CSCSIT-III | Computing/Cyber Security/IT/Software Engineering

Chair: Jagannath Das (UR Rao Satellite Centre, India)

16:00	**E91 Entanglement Architecture for Secure Drone Swarms in Defense** Ravichandra Kulkarni (MIT, Mysore, India); Shree G (MIT Degree College, India); Abhijeet Mukkawar (Siemens DISW, USA)
16:15	**AI-Based SAR Recognition with Real and Simulated Data: A Case Study on Naval Targets** Marco Defilippi (Sarmap, Switzerland); Andrey Giardino (SARMAP, Switzerland); Paolo Pasquali (sarmap SA, Switzerland); Tomas Zajc, Alessandro Centazzo and Achille Peternier (Sarmap SA, Switzerland)
16:30	**Onboard Coarse Geo-Referencing for Adaptive Area-of-Interest Processing in Earth Observation Satellites** Vijay Singh Purohit and Vishesh Vatsal (SkyServe, India); Arvind Subramanian (Skyserve,India)
16:45	**System Synthesis: Design Automation of Cyber-Physical Systems** Vinod Singh Rao, Gopal Sharma, Ajay Raj, Akshay Pachbudhe and Sandhya Seshagiri (Synopsys, India); Matthew Ladzinski, Aniruddha Mukhopadhyay and Prith Banerjee (Synopsys, USA)
17:00	**Runtime Cryptographic Anomalies as Malware Indicators by Analysing Nonce, Key & RNG Behaviour** Aneesh Sai Praneeth and Savita Choudary (Sir M Visvesvaraya Institute of Technology, India)
17:15	**SolarEdge: A Lightweight CNN-LSTM Framework for Real-Time Solar Flare Prediction** Pandava Sudharshan Babu (School of Engineering and Technology, CMR University, Bengaluru, India); Azra Taskin (School of Engineering and Technology, Lakeside Campus, CMR University,, India); Harshitha S (School of Engineering and Technology, Lakeside Campus, CMR University, India); Omprakash Gottam (Koneru Lakshmaiah Education Foundation, India)
17:30	**Comparative Study of Graph Based Path Planning Algorithms for Crater Aware Mars Rover Mission** Krishnapriya Vinod Pillai, Batchu B V Aashish, Dhruva Korla and Harinarendran SS (Amrita Vishwa Vidyapeetham (Deemed University), India); Geetha Kempapura Nanjundaswamy (Amrita Vishwa Vidhyapeetham & Amrita School of Engineering, India)
17:45	**Flight Validated Dense Disparity Based Navigation Using Chandrayaan 3 NavCam** Jayanta Laha (Laboratory for Electro Optics Systems, ISRO, India); Amit Maji, Tanisha Bhatia, Priyabrata Senapati and Vijaya Y (Scientist, India); Bijoy Raha (LEOS-ISRO, India)

Tuesday, July 21 | Heliconia 2 | 16:00 - 18:00 Hrs

S74: SERQA-III | System Engineering/Reliability / Quality Assurance

Chair: Dinakaran E, UR Rao Satellite Centre, India

16:00	**Optimizing the Dependency on International Ground Station for Data-Relay Space Infrastructure** Vivek Shukla, Vurimi K N Kiran Kanth and Archana Shukla (ISRO, India); Shivam Harsh (Bangalore Institute of Technology, India); Yogesh Kumar Bhawsar (Indian Space Research Organisation, India); Ravi Chandra Babu G (UR Rao SAttellite Centre, India)
16:15	**Microcapsule-Based Self-Healing Composites for Critical Spacecraft Applications** Rishika Awasthi, Riddhi Malhotra, Sharath Devarajegowda and Dijesh Chakkalakal Dinesan (Collins Aerospace, India)
16:30	**Reliability Assessment of Continuous Ranging Operations for GSO Satellite Ground Systems: A Data-Driven Quality and Reliability Engineering Approach** Aman Sharma (MCF, ISRO, India); Sadik D Kalburgi (Indian Space Research Organization, MCF, India); Sushma B and Sanjeev C Gour (Indian Space Research Organisation, MCF, India)
16:45	**Immersive Virtual Reality Framework for Airborne Maritime Surveillance & anti-Submarine Warfare Mission** Rajesh Gandhi (CABS, India); Priyanka Sahu (Centre for Airborne Systems, India); R Rajesh (CABS, India)
17:00	**Accelerating RTL Verification Through Integrated FPGA-in-the-Loop and HDL Co-Simulation for Space-Grade DSP Based Designs** Mohit Sharma, Sourabh Kumar Jain and Jalay Jitendra Patel (Indian Space Research Organisation, India); Niharika Agrawal (Mathworks India Private Limited); Kamal Poddar (Indian Space Research Organisation, India)
17:15	**Space-Based Debris Detection in LEO Environment and Initial Orbit Determination** Shubhi Tiwari, Hari B. Hablani and Abhirup Datta (Indian Institute of Technology Indore, India)
17:30	**Transient Heat Flux Estimation via Regularized Inverse Nonlinear Heat Conduction** Om Atmaram Khairnar (Indian Institute of Space Science and Technology, India); Divyansh Prakash (Indian Space Research Organization, India)

Tuesday, July 21 | Hibiscus 1 | 16:00 - 18:00 Hrs

S75: RASE-III | Robotics/Automation/Sensor Electronics

Chair: Sudhakar S (ISRO Satellite Centre (ISAC, Now URSC), India)

16:00-16:15	**Invited Talk: Electrodynamic Vibration Testing Technology for SPACE Applications** Saraswati Dynamics
16:15	**Vertiport Location Optimization for Urban Air Mobility with Time-Varying Demand and Passenger Behavior** Prasanna Ramamurthy (School of Engineering, Amrita Vishwa Vidyapeetham, India & Collins Aerospace, India); Anisha Mohapatra (Indian Institute of Science Bengaluru, India); Rudrashis Majumder (Shiv Nadar University, Chennai, India); V Sundaram Suresh (Indian Institute of Science, India); Sethumadhavan M (Amrita Vishwa Vidyapeetham, India); Adishesha CS (Collins Aerospace an RTX Business, India)
16:30	**Biological Leech-Inspired Soft Robot for Adaptive Locomotion in Pipeline Inspection** Nithiga S, Mothika C, Adithya Rajesh and Prajesh Raagav K (Amrita Vishwa Vidyapeetham, India); Rammohan S (Amrita Vishwa Vidyapeetham (Deemed University), India); Debanik Roy (Bhabha Atomic Research Centre & Board of Research in Nuclear Sciences, India)
16:45	**Design and Implementation of ADCS for JNANAM 1U Cubesat** Sudarshan Patil Kulkarni (JSS Science and Technology University, Mysuru, India); Jayakumar Venkatesan (Valles Marineris International Pvt Ltd, India); Adnan Hussain Sarkar, Lumbini A Tambat, Sulekh D Adithya and Supreeth Prasad (JSS Science and Technology University, Mysuru, India)
17:00	**CNN-Based Unsupervised Anomaly Detection for Aero Engine Controller Data** Ghanshyam Bairwa and Hem Kapil (Defence Research and Development Organization, India); Vishwa Anilkumar Kachhadiya (India)
17:15	**A Novel Method for Edge Based Air Target Detection and Tracking for Finding Tip of the Rocket** V Praveen Jujjuru and Virendrakumar Mittal (Bharat Electronics Limited, India)
17:30	**Performance Analysis of Hybrid RF/FSO-Based SAGIN with Co-Channel Interference** Savita (NIT Rourkela, Odisa, India & NIT Rourkela, India); Vinay Bankey (National Institute of Technology Rourkela, India)
17:45	**Frequency Reconfiguration in Microstrip Patch Antennas Using PIN and Varactor Diodes** Souradip Das (Sant Longowal Institute of Engineering & Technology, India); Manas Tripathi (Manipal University Jaipur, India); Ravi Kumar Arya (Zhongshan Institute of Changchun University of Science and Technology, China); Maifuz Ali (DSPM IIIT Naya Raipur, India); Ashwani Kumar (University of Delhi, India); Junwei Dong (Zhongshan Institute of Changchun University of Science and Technology, China)

Tuesday, July 21 | Hibiscus 2 | 16:00 - 18:00 Hrs

S76: MPCNG-VI | Mission Planning / Control / Navigation / Guidance

Chair: N K Philip (URSC, India)

16:00	**Simulation-Based Design and Performance Analysis of a Helmholtz Cage for CubeSat ADCS Ground Testing** Inbisat Yousuf (Mission Design and Flight Dynamics HRAD Technologies Pvt. Ltd, India); G Sumukha (Embedded Systems Engineer HRAD Technologies Pvt. Ltd, India); Harsh Pal Singh (Structural Systems Kaynes Space Technology Ltd., India); Nikhil Riyaz (Systems Engineering HRAD Technologies Pvt. Ltd Bengaluru, India); G N V Prasad, Prashantha Kumar and Divyashree H b (Dayananda Sagar University, India)
16:15	**Variable-Speed CMG Based Dual-Stage Control Architecture for Ground-Station Tracking in Opto-Quantum Satellites** Ashok Kumar Kakula (Indian Space Research Organization, India); Aditya Rallapalli (Government, India & UR Rao Satellite Centre, India); Suraj Kumar (Indian Space Research Organization, India); Mohan Sundara Siva (Government & Indian Space Research Organisation, India)
16:30	**Dynamic Modeling and Attitude Control of a Reaction-Wheel-Based Low-Gravity Bipedal Hopper** Shriram Hari and M Venkata Sai Nikhil (Indian Institute of Technology, Hyderabad, India); Prasanth Kumar (IIT, India)
16:45	**Computationally Efficient Pursuit-Evasion GNC for CubeSats via Disturbance-Observer-Based LPV-MPC with Implicit Adversary Estimation** Ujjval Patel and Rudra Desai (CaliberX Research Labs, India)
17:00	**Curiosity-Based Mapping for GPS-Free Planetary Exploration: A Coupled Guidance, Navigation and Control Approach** Saumyvardhan Singh Shekhawat and Brij Nandan Dogra (Central University of Jammu, India)
17:15	**Beyond Binary Shadow Maps: Azimuth Resolvability Mapping for SAR Using DEM-Based Visibility** Avinash M (Government, India & DRDO, India); Rajaguru K (DRDO, India); Maheshwaran Y and Santhya P (CABS, India)
17:30	**Comparative Analysis of Time and Frequency-Domain Interference Mitigation Techniques for GNSS and NavIC Receivers Under Pulsed, Continuous-Wave and Chirp Interference** Aakanksha Avnish Bhardwajan (ISRO, India); Prem Ranjan Dubey (ISRO Telemetry Tracking and Command Network, India); Sharda Vashisth and Amitava Sen Gupta (The NorthCap University, India)
17:45	**Continuous Constraint Feasibility for Autonomous Path Planning Using Pseudospectral Methods** Subrahmanya V Bhide and Jyothish Ravindran Pillai (Vikram Sarabhai Space Centre, India); Remesh N (VSSC, India)

3 MINUTE THESIS (3MT) COMPETITION

Tuesday July 21 | 08:0 - 09:00 | Convention Hall

Acoustic Imaging and Rotating Beamforming for Quieter Aerospace Propulsion Systems

Rohit Singh, Indian Institute of Technology Kanpur

The rapid growth of unmanned aerial vehicles (UAVs), advanced air mobility (AAM) platforms, and distributed electric propulsion systems has created an increasing demand for quieter aerospace technologies. This research develops advanced acoustic imaging and rotating beamforming methodologies to accurately identify, characterize, and mitigate dominant noise sources in aerospace propulsion systems. Novel techniques, including Sub-Cross-Spectral Matrix (SCSM) Beamforming, De-Reverberation Beamforming (DBF), and the Rotating Source Identifier (ROSI), were developed to overcome limitations associated with finite microphone arrays, reverberant environments, rotating noise sources, and low signal-to-noise ratios. The proposed methodologies enable high-resolution localization of stationary and rotating acoustic sources while providing detailed insights into blade-tip vortices, blade-passing interactions, and wake-induced noise generation. The framework was experimentally validated using indigenous aeroacoustic facilities and the National Wind Tunnel Facility at IIT Kanpur, with applications ranging from conventional airfoils to bio-inspired trailing-edge modifications and innovative UAV propulsion concepts. Beyond improving noise localization accuracy, the developed techniques support structural health monitoring, fault diagnosis, and aeroacoustic optimization. By integrating advanced signal processing with experimental aerodynamics, this research contributes to the development of quieter drones, rotorcraft, and future advanced air mobility systems, supporting sustainable aviation and next-generation aerospace propulsion technologies.

Design and Development of High–Performance GaAs PHEMT Low Noise Amplifier for Wideband Radar Applications

Sowjanya K, Central University of Karnataka

Modern wideband radar systems require low-noise amplifiers (LNAs) that simultaneously achieve high gain, low noise figure, wide bandwidth, excellent linearity, and low power consumption. This research focuses on the design and development of a high-performance GaAs pseudomorphic High Electron Mobility Transistor (pHEMT)-based LNA to address these demanding requirements for next-generation radar applications. The proposed design overcomes the limitations of existing wideband LNAs by employing a graded biasing strategy across cascaded amplifier stages, enabling improved receiver sensitivity while maintaining high linearity and output power. To enhance bandwidth, gain flatness, and stability, the amplifier incorporates LC feedback networks and tuned source degeneration techniques that provide frequency-dependent compensation with minimal noise contribution. Microstrip-based impedance matching and full-wave electromagnetic simulations are employed to optimize wideband performance and minimize transmission losses. Unlike conventional MMIC implementations, the proposed hybrid architecture offers superior thermal stability, enhanced power-handling capability, and compliance with high-reliability standards required for military and space systems. By achieving an optimal balance between noise performance, bandwidth, gain, and linearity, this research contributes to the development of compact, energy-efficient, and reliable radar receiver front-ends suitable for phased-array radar, aerospace, and defence applications, supporting future high-performance surveillance and communication systems.

3 MINUTE THESIS (3MT) COMPETITION

Tuesday July 21 | 08:0 - 09:00 | Convention Hall

Tunable and Multifunctional Metasurface Structures in THz Regime for Diverse Applications

Ajeet Singh Verma, Indian Institute of Technology (BHU), Varanasi

The terahertz (THz) frequency spectrum has emerged as a promising frontier for next-generation wireless communication, high-resolution imaging, biomedical diagnostics, and advanced sensing technologies. However, conventional THz components often suffer from bulky designs, limited tunability, poor scalability, and restricted multifunctionality. This research focuses on the design and development of ultrathin, tunable, and multifunctional metasurface structures capable of controlling electromagnetic wave absorption, transmission, reflection, and polarization within the THz regime. The proposed metasurfaces incorporate advanced materials such as graphene and vanadium dioxide (VO_2) to achieve dynamically reconfigurable responses, enabling switchable filtering, near-unity absorption, and efficient polarization conversion while maintaining compact dimensions, wide-angle stability, and polarization insensitivity. Analytical equivalent circuit modelling, supported by full-wave electromagnetic simulations, provides accurate design validation and performance optimization. The developed structures demonstrate significant potential for applications in THz communications, biomedical imaging, spectroscopy, electromagnetic interference suppression, stealth technology, and high-resolution sensing. By integrating tunability, multifunctionality, and compact design within a single platform, this research advances practical THz technologies and contributes toward the realization of adaptive, scalable, and intelligent electromagnetic devices for future communication, aerospace, and defence systems.

Open Source Tools for FPGA Design

Ritesh Appasaheb Belgudri, Indian Institute of Technology Dharwad

Field-Programmable Gate Arrays (FPGAs) are fundamental to modern computing, enabling applications in artificial intelligence, wireless communication, aerospace, and defence. However, FPGA development remains heavily dependent on proprietary computer-aided design (CAD) tools, creating challenges related to licensing, transparency, vendor lock-in, and long-term sustainability. This research addresses these limitations through the development of Project Deccan, an open-source FPGA design framework that integrates validated free and open-source software (FOSS) tools, including Yosys, nextpnr, VTR, OpenFPGA, and Verilator, into a unified and production-ready design flow. The framework supports synthesis, technology mapping, placement, routing, simulation, debugging, and AI-assisted hardware design while eliminating dependence on proprietary toolchains. It also incorporates containerized deployment, reusable RTL libraries, and standardized APIs to improve accessibility, reproducibility, and scalability across multiple FPGA platforms. By providing a transparent, auditable, and customizable FPGA development ecosystem, the proposed framework enhances supply-chain resilience, supports certification for safety-critical applications, and promotes technological sovereignty. This work contributes to the development of reliable and future-ready FPGA design methodologies for aerospace, defence, communication, and next-generation embedded computing systems

3 MINUTE THESIS (3MT) COMPETITION

Tuesday July 21 | 08:0 - 09:00 | Convention Hall

Novel System-Level Verification Strategies for System-on-Chip

Mahendra BM, Indian Institute of Technology Dharwad

The increasing complexity of modern mixed-signal System-on-Chip (SoC) designs has made functional verification one of the most challenging stages in semiconductor development. This research proposes a novel system-level verification framework that integrates Universal Verification Methodology for Mixed Signal (UVM-MS), formal verification, Portable Stimulus Standard (PSS), Stochastic Labelled Hybrid Petri Nets (LHPN), and Graph Neural Network (GNN)-assisted coverage exploration to improve verification efficiency and reliability. The framework addresses critical challenges such as analog-digital interactions, jitter, metastability, phase noise, and process-voltage-temperature (PVT) variations that are difficult to capture using conventional simulation-based approaches. Automated mixed-signal testbench generation, intelligent coverage guidance, and reusable verification scenarios significantly accelerate verification while improving functional coverage and reducing computational overhead. Evaluation using APB-ADC mixed-signal verification environments demonstrates substantial improvements in verification speed, coverage closure, and resource utilization. Designed for aerospace, defence, automotive, Internet of Things (IoT), and embedded computing applications, the proposed methodology enables scalable, reusable, and high-confidence verification of next-generation heterogeneous SoCs. By combining formal methods with artificial intelligence-assisted verification, this research contributes toward building reliable semiconductor systems that meet the stringent performance and safety requirements of future mission-critical electronic platforms.

Secure Multimedia Communication over LoRaWAN Using Compression and Physical Layer Security

Priya Gautam, Indian Institute of Technology (BHU), Varanasi

Low-Power Wide-Area Networks (LPWANs), particularly LoRaWAN, have become an essential communication technology for Internet of Things (IoT) applications due to their long-range connectivity and low energy consumption. However, LoRaWAN is inherently designed for transmitting small telemetry data, making secure multimedia communication challenging because of payload limitations, security overhead, and unreliable performance in non-line-of-sight (NLoS) environments. This research proposes a lightweight framework that enables secure multimedia transmission over existing LoRaWAN infrastructure without requiring hardware modifications or changes to the physical layer. The framework integrates adaptive compression and intelligent chunking techniques to efficiently transmit multimedia data within duty-cycle constraints, while a physical-layer key generation mechanism provides secure communication with minimal computational and energy overhead. An adaptive communication strategy incorporating spreading factor optimization, redundancy control, and forward error correction further enhances reliability under challenging channel conditions. Experimental validation using LoRa32 and Heltec platforms demonstrated successful transmission of compressed images with over 90% reconstruction accuracy, secure 128-bit key generation within seconds, and significant reduction in packet loss under NLoS conditions. The proposed framework extends LoRaWAN capabilities beyond conventional sensing applications, enabling secure multimedia communication for disaster response, smart surveillance, healthcare, agriculture, wildlife monitoring, and other mission-critical Internet of Things deployments.

3 MINUTE THESIS (3MT) COMPETITION

Tuesday July 21 | 08:0 - 09:00 | Convention Hall

Seeing More with Less: Lightweight Multimodal AI for Flood Detection

Jayasree T. V., Central University of Kerala

Floods are among the most destructive natural disasters, demanding rapid and accurate detection to support effective disaster management and emergency response. This research presents a lightweight multimodal artificial intelligence framework that improves flood detection by integrating Synthetic Aperture Radar (SAR) imagery with complementary geospatial information. Unlike optical remote sensing, SAR imagery enables reliable flood monitoring under cloud cover and adverse weather conditions; however, distinguishing floodwater from similar land surfaces remains a significant challenge. The proposed approach combines SAR data with land use and land cover (LULC) information and surface water probability maps to enhance classification accuracy and reduce false detections. Advanced deep learning models are developed to perform pixel-level flood mapping, enabling accurate identification of inundated regions across complex urban, vegetated, and heterogeneous landscapes. The lightweight architecture is designed for efficient deployment while maintaining high detection accuracy and robustness. Experimental results demonstrate improved performance over conventional SAR-only approaches by effectively distinguishing temporary floodwater from permanent water bodies. The proposed framework provides scalable and reliable solutions for real-time flood monitoring, disaster management, early warning systems, and climate resilience planning. By combining artificial intelligence with multimodal satellite data, this research contributes to the development of intelligent, practical, and resilient flood monitoring systems for future disaster response applications.

Design and Performance Evaluation of Frequency Selective Surface and Metasurfaces for Wireless Communication

Sonu Jain, Malaviya National Institute of Technology Jaipur

The growing complexity of defence, aerospace, satellite, and wireless communication systems has increased the demand for compact electromagnetic structures capable of mitigating interference, enhancing signal integrity, and improving system performance. This research focuses on the design, optimization, fabrication, and performance evaluation of Frequency Selective Surfaces (FSS) and metasurfaces for advanced wireless communication applications. The work addresses key challenges associated with conventional electromagnetic structures, including large size, limited bandwidth, and poor integration into modern communication platforms. Novel compact and multifunctional designs were developed for sub-6 GHz and X-band applications, incorporating dual-band, wideband, and multiband frequency-selective surfaces alongside ultrathin metamaterial absorbers. The proposed structures were designed, simulated using CST Studio Suite, fabricated, and experimentally validated to demonstrate their practical feasibility. In addition to electromagnetic filtering, the developed metasurfaces support multiple functionalities, including electromagnetic interference suppression, radar cross-section reduction, antenna gain enhancement, mutual coupling reduction, sensing, shielding, and specific absorption rate reduction in wearable antennas. By bridging advanced electromagnetic design with practical deployable solutions, this research contributes to the development of lightweight, compact, and high-performance components for next-generation wireless communication, aerospace, and defence systems.

3 MINUTE THESIS (3MT) COMPETITION

Tuesday July 21 | 08:0 - 09:00 | Convention Hall

Study on Metasurface-based Circularly Polarized Patch Antennas

Deepak Ram, Indian Institute of Technology (BHU), Varanasi

The growing complexity of defence, aerospace, satellite, and wireless communication systems has increased the demand for compact electromagnetic structures capable of mitigating interference, enhancing signal integrity, and improving system performance. This research focuses on the design, optimization, fabrication, and performance evaluation of Frequency Selective Surfaces (FSS) and metasurfaces for advanced wireless communication applications. The work addresses key challenges associated with conventional electromagnetic structures, including large size, limited bandwidth, and poor integration into modern communication platforms. Novel compact and multifunctional designs were developed for sub-6 GHz and X-band applications, incorporating dual-band, wideband, and multiband frequency-selective surfaces alongside ultrathin metamaterial absorbers. The proposed structures were designed, simulated using CST Studio Suite, fabricated, and experimentally validated to demonstrate their practical feasibility. In addition to electromagnetic filtering, the developed metasurfaces support multiple functionalities, including electromagnetic interference suppression, radar cross-section reduction, antenna gain enhancement, mutual coupling reduction, sensing, shielding, and specific absorption rate reduction in wearable antennas. By bridging advanced electromagnetic design with practical deployable solutions, this research contributes to the development of lightweight, compact, and high-performance components for next-generation wireless communication, aerospace, and defence systems.

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Multi-beam Generation Using Digitally Coded Metasurfaces

Jogesh Chandra Dash, National Institute of Technology Rourkela

Research on multi-beam generation using digitally coded metasurfaces (DCMs) is focused on creating advanced, reconfigurable antenna systems for dynamic space communication and sensing. DCMs consist of programmable unit cells that manipulate incident electromagnetic waves through discrete digital coding, allowing for real-time control of wavefronts. By applying specific coding sequences across the metasurface, it is possible to simultaneously generate multiple independent beams, each directed toward different spatial angles or targets. In space applications, the ability to produce multiple beams is crucial for establishing concurrent communication links with various satellites, ground stations, or spacecraft, thus enhancing system efficiency and coverage. Unlike traditional phased arrays, DCMs achieve beam generation and steering without the use of mechanical components, which reduces size, weight, and power requirements—an essential advantage for satellite systems. This technology supports frequency reuse and spatial multiplexing, making it well-suited for high-capacity, multi-user communication in Low Earth Orbit and beyond. Recent experimental and simulation studies show that both 1-bit and 2-bit DCMs can effectively create multiple beams with high gain and precision in angular direction. Future developments aim to integrate AI-based control for adaptive multi-beam management, positioning DCMs as a key enabler for next-generation spaceborne communication systems.

Metagratings-based Reconfigurable Intelligent Surfaces for N-LOS Radar Surveillance

Sreenath Reddy Thummaluru, IIIT DM Kancheepuram

Target detection in non-line-of-sight (N-LOS) scenarios has gained significant attention recently, especially in defense and military applications. Recent studies show that a smart radio environment (SRE) provides the best solution for this issue. Fig. 1 shows how SRE-enabled radar detection works in N-LOS scenarios. Targets 1 and 2 are in the radar's shadow (Fig. 1(a)), so they can't be detected. Fig. 1(b) shows how an SRE can establish a LOS path between the radar and the target. Scatterers called reconfigurable intelligent surfaces (RISs) are placed throughout the channel, and controlling them adjusts the environment to create a virtual LOS. Designing the RIS is challenging as it must perform various beam manipulations. My current research involves designing RISs using metagratings. I have developed an analytical algorithm in MATLAB to design the metagrating structure with capacitive meta- atoms for specific beam control, substrate type, and frequency. The algorithm's results are confirmed through CST simulations. For anomalous reflection, a metagrating is built and tested, demonstrating potential to replace capacitive meta-atoms with varactors to develop a reconfigurable metagrating that functions as an RIS. This RIS will be useful not only for N- LOS detection but also in satellite communications, electronic warfare, and other applications. (b) (a) Fig. 1.

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Radar Cross Section Reduction of Antennas and Frequency Selective Surfaces

Surbhi Arora, SRM Institute of Science and Technology, Chennai

My research is centered on advanced electromagnetic system design with a strong emphasis on broadband antennas, miniaturization, and radar cross-section (RCS) engineering for aerospace and defense applications. I aim to develop high-performance, low-observable radiating structures that address the growing demand for stealth-integrated communication and sensing platforms. I have systematically designed and optimized CPW-fed slot antennas using innovative geometries, achieving significant improvements in bandwidth, gain, and polarization performance. A key contribution of my work is the development of a hybrid RCS reduction approach combining metallic surface modification with Characteristic Mode Analysis (CMA). This methodology enables a physics-driven understanding of current distribution and modal behavior, leading to effective wideband and wide-angle scattering suppression without compromising radiation characteristics. This work has been published in the IEEE Journal on Miniaturization for Air and Space Systems. In parallel, I am advancing the design of miniaturized, angularly stable, and polarization-insensitive ultrawideband FSS structures for robust operation in dynamic electromagnetic environments. My contributions are supported by multiple IEEE conference publications and peer-reviewed journal articles.

Defence & Strategic Technologies

Rajesh Singh, DIAT Pune

Research Summary of modern defence and strategic technology platforms. Contemporary military systems, including fighter aircraft, naval vessels, missiles, and unmanned aerial vehicles, require compact, lightweight, and high- performance communication and sensing capabilities while maintaining stealth and aerodynamic efficiency. Wideband and multifunction antenna architectures address these needs by integrating multiple operations. A key enabling technology is the use of Active Electronically Scanned Array (AESA) antennas, which allow electronic beam steering, rapid frequency agility, and simultaneous multi-band operation without mechanical movement. In parallel, conformal antenna systems, designed to match the shape of the host platform's surface, reduce aerodynamic drag and radar cross-section while preserving communication and sensing performance. By embedding antennas into the aircraft or vehicle skin (for example, placement of antennas onto the RF seeker's periphery), conformal designs improve survivability and stealth characteristics.

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Investigations on Intelligent Control Mechanisms for Next-Generation Aerospace

Kritika Bansal, VIT-AP, Amaravathi

My research addresses the most significant controlling challenges in complex, high-reliability systems related to Space, Aerospace, and Defence sectors. A major portion of my research is dedicated to the design of robust control frameworks for systems subject to significant uncertainties, dynamic external disturbances and time-delays which is ubiquitous in applications like satellite attitude control, UAV manoeuvring and active vibration isolation in aircraft. My work has pioneered novel controller design methodologies, specifically addressing the effects of input and state delays. This includes the formulation of Lyapunov-based stability conditions that optimize performance without sacrificing robustness. Furthermore, currently I am involved in actively integrating machine learning and adaptive control strategies into conventional control structures. This enables systems to exhibit real-time intelligence, learning from operational data to enhance tracking performance and fault tolerance in the face of unmodeled dynamics and system parameter variations. My extensive publication record validates these theoretical advancements and their practical applicability to critical aerospace engineering problems.

Dielectric Resonator Antennas for Defense Application

Pinku Ranjan, ABV-IIITM Gwalior

The development of advanced antenna technologies for defence and strategic communication systems, with particular emphasis on Dielectric Resonator Antennas (DRAs) and reconfigurable antenna architectures. His work investigates the design, analysis, and optimization of wideband, high-gain, and high-efficiency dielectric resonator antennas capable of operating across microwave, millimeter-wave, and emerging terahertz frequency bands. These antenna systems are designed to meet the stringent requirements of modern defence platforms, including radar systems, satellite communication, electronic surveillance, unmanned aerial vehicles (UAVs), secure military communication networks, and next-generation wireless infrastructures such as 5G and future 6G technologies. A significant aspect of his research involves the development of multi-functional and self-multiplexing DRA configurations, hybrid antenna structures, and compact MIMO antenna systems that provide enhanced bandwidth, radiation efficiency, pattern diversity, and interference mitigation. His work also explores metamaterial-based antenna structures, electromagnetic absorbers, and biosensor applications, which can improve electromagnetic performance and enable novel functionalities in compact devices.

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Robust Lightweight Vision Models for Autonomous Monitoring and Surveillance in Challenging Aerospace and Defence Environments

Sobhan Kanti Dhara, National Institute of Technology Rourkela

Developing lightweight, AI-driven computer vision models for challenging environments relevant to aerospace and defence applications. The work aims to enhance perception, surveillance, and situational awareness under adverse imaging conditions while maintaining computational efficiency for real-time deployment.The research includes four major directions. First, it develops lightweight deep learning frameworks for ship detection in remote sensing imagery, integrating gradient-guided context refinement and geometric–statistical feature fusion to improve detection in cluttered and low-visibility maritime environments. Ongoing work further addresses orientation and geometric ambiguities in low signal-to-noise ratio imagery. Second, it focuses on human detection in aerial thermal imagery, where novel architectures leverage thermal saliency refinement, multi-path feature aggregation, and scale-aware representations to accurately detect small human targets for surveillance and security applications, even under low-contrast and cluttered conditions. Third, the research investigates image restoration and fusion techniques to mitigate degradations caused by haze, sandstorms, dust, and low-light environments using frequency-guided attention, self-supervised learning, and physics-inspired priors, enabling reliable visual perception in adverse weather. Finally, it explores underwater image enhancement through frequency-based attention mechanisms to correct color distortion and improve visibility, supporting marine exploration and underwater defence operations. Overall, this research contributes computationally efficient vision solutions for next-generation aerospace and defence systems, enabling robust object detection, environmental perception, and image enhancement across diverse operational scenarios.

Impact of marine microplastics (MP) in Underwater Imaging and optical wireless communication

Rashmita sahoo, Dayananda Sagar University

Every year vast quantities (9–14 million metric tons) of microplastics particles is entering to the ocean and significantly changes the radiative properties of the sea water. These changes will affect the ocean remote sensing, UAV (unmanned Arial vehicle) to AUV (Autonomous Underwater Vehicle) wireless communication, underwater imaging, target detection and robotics. The optical wireless communication is the best suitable technology for military operations and defense application as it supports high data rate up to 3Gps with low latency. The underwater channel polluted with microplastics exabits great challenges for underwater optical wireless communications (UOWC) and significantly deteriorates the intensity of the received optical signal due to scattering by marine microplastics and reduces the data rate and communication range. Therefore, it is very crucial to model an Underwater Laser Communication system for real sea environment to estimate the data rate prior to deployment. The current idea is to analyze the performance of the microplastics dominated underwater channel in the wavelength range 300nm- 800nm using Monte Carlo Method. The execution of MC simulation requires the laser source and optical receiver parameters and inherent optical properties of microplastics which are collected from recent literature. The current idea has focused to enhance the data rate of the underwater communication system in the microplastic dominated water through advance modulation techniques. Further, these techniques will be integrated to underwater autonomous vehicles to enhance the communication performance.

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