# Sixth International Conference on Electronic Warfare - EWCI 2020
## NSSC, Indian Institute of Science, Bangalore, India ( 17 to 20 February 2020 )
## PROGRAMME SUMMARY

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| **17 Feb 2020, Monday** | **Pre-Conference Tutorials** | **Venue : Seminar Hall A** |
| 08:30 to 09:00 Hrs | **Registration for the Tutorials** | |
| 09:00 to 09:30 Hrs | **Inauguration of the Pre Conference Tutorials, By The Chief Guest** | |
| 09:30 to 11:00 Hrs | **Tutorial 1:** Naval EWS : The Modern Naval EW Defence System<br>By **Dr. Andrea De Martino**, Elettronica S.p.A. , Italy | |
| 11:00 to 11:30 Hrs | **Tea Break** | |
| 11:30 to 12:00 | **Tutorial 1 – Continued** | |
| 12:00 to 13:00 Hrs | **Tutorial 2:** Border Surveillance and Traffic Analysis : The boost of Artificial Intelligence in Homeland Security<br>**By Dr Andrea De Martino, Mr Fabrizio Vergari** , Elettronica , Italy | |
| 13:00 to 14:00 Hrs | **Lunch Break** | |
| 14:00 to 15:30 Hrs | **Tutorial 2 – Continued** | |
| 15:30 to 16:00 Hrs | **Tea Break** | |
| 16:00 to 17:30 Hrs | **Tutorial 3:** Advancements and Design Concepts for Modern EW Test and Training Ranges<br>**By Mr Robby Miles**, Vice President, OAK Defense Ltd., Canada | |
| **18 Feb 2020, Tuesday** | **Day 1 : Inaugural, Plenary and Technical Sessions** | |
| 08:00 to 08:45 Hrs | **Registration for the Conference at the Event's Venue. Assembly of participants at J N Tata Auditorium before 09:00 Hrs** | |
| 09:00 to 10:40 Hrs | **Inaugural Function at J N Tata Auditorium :**<br>Introductory Address, Inauguration of the Conference , Release of Souvenir, Keynote Address, Patron Address, Theme Talk and Addresses by Conference Chair, Technical Committee Chair and The Chief Guest | |
| 10:40 to 11:00 Hrs | Inauguration and Visit of Technical Exhibition by The Chief Guest and Dignitaries | |
| **10:40 to 12:00 Hrs** | **Hi Tea and Time to Visit Technical Exhibition** | |
| 12:00 to 13:00 Hrs | **Plenary Session - I at J N Tata Auditorium:**<br>**Plenary Talk 1:** Multi-Function EMBM Requirements, By **Glenn Carlson**, President Elect, The AOC International, USA<br>**Plenary Talk 2:** Advances in EW Systems and Technologies for High Altitude Platforms, By **Dr Anil Kumar Singh** , OS and Director, DRDO, India | |
| **13:00 to 14:30Hrs** | **Lunch Break and Time to Visit Technical Exhibition** | |
| 14:30 to 16:00 Hrs | **Plenary Session - II at J N Tata Auditorium:**<br>**Plenary Talk 3:** Challenges in EW Systems and Their Life Cycle Sustenance, By **Rear Adm Nair Sreekumar** , Asst. CoM ( IT and Systems ), IN<br>**Plenary Talk 4:** Advances in Airborne EW Systems , By **Dr K Maheswara Reddy** , DS and Director, DRDO, India<br>**Plenary Talk 5:** Development and Concurrent Production of Current Technology EW Systems in India, By **Mahesh V**, Director (R&D), BEL, India | |
| **16:00 to 16:30 Hrs** | **Tea Break** | |
| 16:30 to 17:30 Hrs | **Session 1 at JN Tata Auditorium :** EW SYSTEMS AND DF TECHNIQUES -I | (3 Papers) |
| | **Session 2 at Seminar Hall A :** EW RECEIVERS AND RF SUBSYSTEMS -I | (3 Papers) |
| | **Session 3 at Seminar Hall B :** ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS | (3 Papers) |
| **19:00 Hrs** | **Cultural Programme followed by Conference Dinner** | **Venue : Four Seasons Hotel, Bangalore** |
| **19 Feb 2020, Wednesday** | **Day 2 : Invited Talks and Technical Sessions** | |
| 09:00 to 10:00 Hrs | **Invited Talk 1:** Establishing EW Relationships, By **Lisa K Fruge - Cirilli**, BAE Systems, Past President, AOC International, USA<br>**Invited Talk 2:** New Developments In Test and Evaluation of EW Systems, a US Perspective, By **Greg Patschek** , Keysight Technologies, USA | |
| 10:00 to 11:00 Hrs | **Session 4 at JN Tata Auditorium :** EW ANTENNAS & ACTIVE PHASED ARRAY SYSTEMS – I | (3 Papers) |
| | **Session 5 at Seminar Hall A :** EW SIGNAL PROCESSING AND DIGITAL RECEIVERS - I | (3 Papers) |
| | **Session 6 at Seminar Hall B :** EW THREAT SIMULATORS AND EW TESTING / EVALUATION -I | (3 Papers) |
| **11:00 to 11:30 Hrs** | **Tea Break** | |
| 11:30 to 12:30 Hrs | **Session 7 at JN Tata Auditorium :** EW SYSTEMS AND DF TECHNIQUES -II | (3 Papers) |
| | **Session 8 at Seminar Hall A :** EW SOFTWARE ENGINEERING / MODELING & CERTFICATION - I | (3 Papers) |
| | **Session 9 at Seminar Hall B :** EW SYSTEMS INSTALLATION & TESTING / EVALUATION | (3 Papers) |
| **12:30 to 14:00 Hrs** | **Lunch Break and Time to Visit Technical Exhibition** | |
| 14:00 to 15:00 Hrs | **Invited Talk 3:** Improving Situational Awareness by Gathering Critical Meta Data : Geo-Location of RF Emissions - in Theory and Practice, By **Volker Brands**, Narda-STS, Germany<br>**Invited Talk 4:** Portable Modern Communication and Radar EW Test and Training Systems, **Robby Miles**, Oak Defence Ltd , Canada and **Harish H V,** CEO, Aidin Technologies, Bangalore, India | |
| 15:00 to 16:00 Hrs | **Session 10 at JN Tata Auditorium :** EW SIGNAL PROCESSING AND DIGITAL RECEIVERS -II | (3 Papers) |
| | **Session 11 at Seminar Hall A :** EW THREAT SIMULATORS AND EW TESTING / EVALUATION - II | (3 Papers) |
| | **Session 12 at Seminar Hall B :** EW SOFTWARE ENGINEERING / MODELING & CERTFICATION -II | (3 Papers) |
| **16:00 to 16:30 Hrs** | **Tea Break** | |
| 16:30 to 17:50 Hrs | **Session 13 at JN Tata Auditorium:** EW ANTENNAS & ACTIVE PHASED ARRAY SYSTEMS-II | (3 Papers) |
| | **Session 14 at Seminar Hall A :** EW SIGNAL PROCESSING AND DIGITAL RECEIVERS – III | (4 papers) |
| | **Session 15 at Seminar Hall B :** EW SOFTWARE ENGINEERING / MODELING & CERTFICATION – III | (4 Papers) |
| **20 Feb 2020, Thursday** | **Day 3 : Invited Talks, Technical Sessions and Concluding Session** | |
| 09:00 to 10:00 Hrs | **Invited Talk 5:** Specific Emitter Identification of COMMS Signals, By **Fabrizio Vergari**, Elettronica , Italy<br>**Invited Talk 6:** Advances in Submarine ESM Systems, By **Patrick Clarke**, SAAB Grintek Defence, South Africa | |
| 10:00 to 11:00 Hrs | **Session 16 at JN Tata Auditorium :** EW SIGNAL PROCESSING AND DIGITAL RECEIVERS -IV | (3 Papers) |
| | **Session 17 at Seminar Hall A :** EW THREAT SIMULATORS AND EW TESTING / EVALUATION -III | (3 Papers) |
| | **Session 18 at Seminar Hall B :** EW SOFTWARE ENGINEERING / MODELING & CERTFICATION - IV | (3 Papers) |
| **11:00 to 11: 30Hrs** | **Tea Break** | |
| 11:30 to 13:10 Hrs | **Session 19 at JN Tata Auditorium :** EW RECEIVERS AND RF SUBSYSTEMS – II | (4 Papers) |
| | **Session 20 at Seminar Hall A :** EW SYSTEMS AND DF TECHNIQUES - III | (5 Papers) |
| | **Session 21 at Seminar Hall B :** EW SOFTWARE ENGINEERING / MODELING & CERTFICATION -V | (5 Papers) |
| **13:10 to 13:30 Hrs** | **Concluding Session at J N Tata Auditorium : Distribution of Certificates, Discussions on Feedback, Vote of Thanks** | |
| **13:30 to 16:00 Hrs** | **Lunch Break and Final Opportunity to Visit Stalls and Interact with Exhibitors and End of the Conference** | |

**EWCI 2020 : PRE-CONFERENCE TUTORIALS on Monday, 17 FEBRUARY 2020**
**Inauguration : By Glenn Carlson , President Elect , AOC International, USA**
**Venue: Seminar Hall A, Duration: 09:00 to 09:30 Hrs**

**Tutorial 1 : 09:30 to 11:00 Hrs and 11:30 to 12:00 Hrs**

**Naval EWS : The Modern Naval EW Defence System**
**By Dr Andrea De Martino, Hon. CTO, Elettronica, S.P.A., Italy**

The Speaker **Dr Andrea De Martino** graduated in Nuclear Engineering (Electronic Track) and Ph.D. in Automatic Control Systems. He worked in Selenia S.p.A From 1972 to 1985 where he was involved in design of variety of Radar Systems. Since 1985 he worked in Elettronica where he developed New EW Products, held positions up to Technical Director of the EFA-DASS Consortium.. He currently holds position of CTO in Elettronica, Italy. Dr De Martino is a patent holder and author of the book "Introduction to Modern EW Systems" and many Technical Papers on Radar and EW. Dr. De Martino is an expert in Surveillance and Reconnaissance Sensors, in their Data Fusion and Countermeasures (ECM) in both RF and IR.

**Coverage:** Military Ships constitute an important asset for their Nations for the many tasks and missions they fulfill. However, they are also a premium target for the enemies, which can employ a number of sophisticated and dangerous weapons to attack them. Within these weapons, we can indicate cyber-attacks, many types of missiles, unmanned air (drones) and surface vehicles. Those threats exploit RF communication signals to be addressed toward the ship from far distances and RF or IR ship signatures to precisely hit it. Thus ship defence must be provided not only with AESA radars with detection and tracking toroidal space coverage but also with an effective EW system, which allows the terminal RF/IR/Cyber defence of the ship. Elettronica addressed the above EW task with its new Naval EWS system. The system is composed of five sub-systems that are managed and coordinated by the Electronic Warfare System Manager (ELT-950 EWSM). The five sub-systems are: the Radar Electronic Support Measure (ZEUS RESM), the Communication Electronic Support Measure (ELT-332 CESM), the Radar Electronic Counter-Measure (Virgilius RECM), and the counter-UAV (ADRIAN) with detection, classification and CECM protection against multiple commercial drone attacks. The EWSM, which is provided with Cyber defences functionalities to protect the overall MINERVA system operation, is further coordinating the off-board launches of the chaff and flares ship ammunitions. The tutorial addresses the technologies and attacking methods of the threats as well as the technologies and the defence capabilities of the MINERVA System.

**Tea Break : 11:00 to 11:30 Hrs**

**Tutorial 2 : 12:00 to 13:00 Hrs and 14:00 to 15:30 Hrs**

**Border Surveillance and Traffic Analysis : The boost of Artificial Intelligence in Homeland Security, By Andrea De Martino, Hon. CTO, Elettronica S.P.A, Italy and Fabrizio Vergari, EW COMMS Scientist, Elettronica S.p.A., Italy**

Mr **Fabrizio Vergari** has a degree in Electronic Engineering from the University "La Sapienza" of Rome, Italy. Following his degree, he was responsible for ECM/ESM systems at the Elettronica company until end of 2000. Since 2001 he was a pioneer of SDR activities on Leonardo Company (formerly Selex Communications) and was the project leader of the first SDR prototype until the final validation in 2006. Then he covered the position of Senior Engineer in the fields of secure radio communications and EW both for military and for Public Protection and Disaster Relief (PPDR) and the relevant Information Communication Technology (ICT) applications. He actively contributed on programs funded by military agencies, e.g. NATO and the European Defence Agency, about EW and the Dynamic Spectrum Management and programs funded by the European Community about wideband networks for PPDR and the relevant applications of the SDR based technologies. Currently he covers the position of EW COMMS Scientist at Elettronica Group.

**Coverage**: The modern border surveillance networks exploit an enormous quantity of data and information collected using Radar ESM and SIGINT systems installed on terrestrial, naval and air platforms, and Signals transmitted by AIS (Automatic Identification System) for maritime traffic and IFF(Identification Friend or Foe) for air traffic. All the collected data are processed by one or more Command and Control (C2) Centers in order to generate complete and exhaustive operative picture of Detection of all anomalous activities and behaviors of the platforms under monitoring, with capability of an immediate optical feedback, and Protection of all border surveillance network nodes from "cyber-attacks" in order to guarantee integrity/confidentiality of the collected data.

Two innovative functions are enabled by the use of Artificial Intelligence techniques:

1) The Specific Emitter Identification (on both Radar and COMM signals) that provides a method to associate in a unique way the received waveform with the corresponding radio transmitter.
2) The Anomalous Behavior Detection that provides a method based on analysis trajectory/kinematic and waveform behavior to detect anomalous activities of the platforms under monitoring.

Given the huge amount of data, it is necessary to introduce, in each node to be protected, the functionality of Advanced Cyber Defense. This functionality is also based on "Artificial Intelligence" techniques and it is able to detect, identify and classify harmful ad malicious network traffic flows (e.g., intrusions/infections).

**Lunch Break : 13:00 to 14:00 Hrs**

**Tea Break : 15:30 to 16:00 Hrs**

| Tutorial 3 : 16:00 to 17:30 Hrs | Advancements and Design Concepts for Modern EW Test and Training<br>By Robby Miles, Vice President, OAK Defense Ltd. , Canada |
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|  <br>Mr. **Robby Miles** is currently a Vice President at OAK Defense Ltd with 20 years of experience in the field of EW Test and Training systems. His background includes roles such as: software designer, RF designer, Product Manager for EW Threat Simulators and Principle System designer for Land, Naval and Air Force EW Test and training systems. Also, I have also design large scale SATCOM systems ranging from 2-meter systems to 13-meters. He has developed systems used around the world and is presently the design lead for both a naval and air test range simulator that is used in India. | **Coverage:** The evolution of EW systems is adding new system capabilities that must be tested. The threat environment is changing with threats becoming more sophisticated and numerous, requiring large scenarios and pulse density. EW simulation used to test EW systems, now it must have greater fidelity and realism. There is a trade-off between cost and fidelity/realism. Systems now need to be designed with common aperture that requires simulators to provide stimulus for more than just the EW signals. They are required to stimulate radar, EW, communications, navigation. Multispectral stimulus is no longer a "nice to have" and is becoming a hard requirement.<br>Air Test Ranges will focus on land-based assets that are generally mobile shelter-based systems with integral EW systems that can be used for jamming, deception and monitoring of radar and communications, as well as simulating the presence of opposing force communications.<br>Naval Test Ranges explain and review how an integrated suite of electronic warfare simulators and sensors are designed to support EW training and test both at sea and in harbor, reviewing how it can be optimised to enable complete training of all Navy Radar and EW sensors.<br>Land Training System will explain the communications-related capability required in the Land environment which differs to that required in the Maritime and Air domains due to the multitude of communications systems in use by land forces and the way in which they are operated. The land training system range needs to be able to monitor and disrupt both voice and data communications across various systems ranging from tactical handheld combat radios to headquarters (HQ) C2 nets and satellite systems. |

## Inaugural Function

**18 February 2020** **Venue: J N Tata Auditorium** **Duration: 09:00 to 10:40 Hrs**

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| 09:00 to 09:10 Hrs | **Invocation and Lighting of the Lamp** | |
| 09:10 to 09:20 Hrs | **Introductory Address** | By Conference Chair<br>**Dr U K Revankar**<br>President, AOC India Chapter, Bangalore, India |
| 09:20 to 09:30 Hrs | **Inauguration of Conference and Release of Souvenir** | By The Chief Guest<br>**Mr M V Gowtama**<br>Chairman and Managing Director, BEL , Bangalore |
| 09:30 to 09:40 Hrs | **About the Conference** | By Chair, Conference Technical Committee<br>**Mr Anupama Sharma**, Scientist H, DLRL, DRDO |
| 09:40 to 09:45 Hrs | **Address** | By Conference Co-Chair<br>**Mr Mahesh V**, Director (R&D), BEL, Bangalore |
| 09:45 to 10:00 Hrs | **Key Note Address** | By **Mr Glenn Carlson**<br>President Elect, The AOC International, USA |
| 10:00 to 10:15 Hrs | **Address on The AOC International, USA** | By **Mr Greg Patschke**<br>Member, AOC International Advisory Committee (IAC) |
| 10:15 to 10:35 Hrs | **Inaugural Address** | By The Chief Guest |
| 10:35 to 10:40 Hrs | **Vote of Thanks** | By Conference Coordinator<br>**Mr H V Harish**, CEO, Spur DTDS, Bangalore |
| 10:40 to 11:00 Hrs | **Inauguration and Visit of Technical Exhibition** | By The Chief Guest and Dignitaries |
| **10:40 to 12:00 Hrs :** | **Hi Tea and Time to Visit Technical Exhibition** | |

| 18 February 2020 | Day 1 : PLENARY SESSION I | J N Tata Auditorium |
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| **Chair : I V Sarma,** Former Director (R&D) , Bharat Electronics Ltd., Bangalore, India<br>**Co-Chair : K V Suresh Kumar,** General Manager (Technology Planning) , Bharat Electronics Ltd., Bangalore, India<br>**Duration:** 12:00 to 13:00 Hrs | | |
| **Plenary Talk 1** | **Multi-Function EMBM Requirements,**<br>By Glen Carlson , President Elect, AOC International , USA | 12:00 to 12:30 Hrs |
| **Plenary Talk 2** | **Advances in EW Systems and Technologies for High Altitude Platforms,**<br>By Dr Anil Kumar Singh , OS and Director, DLRL, DRDO, Hyderabad, India | 12:30 to 13:00 Hrs |
| **13:00 to 14:30 Hrs : Lunch Break and Time to Visit Technical Exhibition** | | |
| **18 February 2020** | **Day 1 : PLENARY SESSION II** | **J N Tata Auditorium** |
| **Chair : Dr U K Revankar,** Former Director DARE, DRDO & President, AOC India Chapter, Bangalore**,** India<br>**Co-Chair : H V Harish,** CEO, Spur DTDS & Secretary, AOC India Chapter, Bangalore, India<br>**Duration :** 14:30 to 16:00 Hrs | | |
| **Plenary Talk 3** | **Challenges in EW Systems and Their Life Cycle Sustenance**<br>By Rear Adm Nair Sreekumar , Asst. CoM ( IT and Systems ), Indian Navy | 14:30 to 15:00 Hrs |
| **Plenary Talk 4** | **Advances in Airborne EW Systems**<br>By Dr K Maheswara Reddy , DS and Director, DRDO, India | 15:00 to 15:30Hrs |
| **Plenary Talk 5** | **Development and Concurrent Production of Current Technology EW Systems in India**<br>By Mahesh V, Director (R&D), BEL, India | 15:30 to 16:00 Hrs |
| **16:00 to 16:30 Hrs : Tea Break** | | |

| 18 February 2020 | Day 1 : PARALLEL TECHNICAL SESSION 1 | | J N Tata Auditorium |
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| **Chairman:**<br>**Rear Admiral Sreekumar Nair,**<br>Indian Navy<br><br>**Co Chairman:**<br>**N Sree Lakshmi,**<br>Sc 'G' , DLRL, DRDO<br><br>**Duration:**<br>16:30 to 17:30 Hrs | **EW SYSTEMS AND DF TECHNIQUES - I** | | |
| | 057R069 | **AI applications to Border Surveillance and Traffic Analysis**<br>Dr Andrea De Martino, Timothy Battisti<br>Elettronica, Italy | 16:30 to 16:50 Hrs |
| | 049R026 | **Implementation of Joint TDOA And FDOA Algorithm for Emitter Geolocation**<br>Suman Agrawal, Mahendra Pratap, Anupam Sharma<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 16:50 to 17:10 Hrs |
| | 008R018 | **EW Ops & Spectrum Management in Joint Services Operation Scenario and Challenges**<br>Major Manish Khatkar and Maj Iti Shrivastava<br>Military College of Telecommunication Engineering (MCTE), Mhow | 17:10 to 17:30 Hrs |

| 18 February 2020 | Day 1 : PARALLEL TECHNICAL SESSION 2 | | Seminar Hall A |
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| **Chairman:**<br>**Dr Anil Kumar Singh,**<br>OS & Director,<br>DLRL, DRDO<br><br>**Co Chairman:**<br>**Tapas Kumar Hazra**<br>Sc 'G' , DLRL, DRDO<br><br>**Duration:**<br>16:30 to 17:30 Hrs | **EW RECEIVER AND RF SUBSYSTEMS – I** | | |
| | 021R001 | **Offset Broadside Stripline line based Multioctave Tandem Quadrature Hybrid Coupler**<br>Jayasheela CS , Shaliendra Singh, Vipin Kumar, Mohit<br>Bharat Electronics Limited , Bangalore | 16:30 to 16:50 Hrs |
| | 058R041 | **Wideband Compact Passive Direction Finding Receiver Based on Combination of Amplitude and Phase Methods**<br>Bhupendar Singh, Sudeshna Das<br>Defence Electronics Research Laboratory, DRDO, Hyderabad | 16:50 to 17:10 Hrs |
| | 012R008 | **RF Delay Line Parameter Tests for the Practical Realization of DIFM: Electronic Warfare Receiver**<br>Shailendra Singh, Sandesh N J, Niraj Srivastava ,Manjunath R<br>Bharat Electronics Ltd , Bangalore | 17:10 to 17:30 Hrs |

| 18 February 2020 | Day 1 : PARALLEL TECHNICAL SESSION 3 | | Seminar Hall B |
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| **Chairman:**<br><br>**Glenn Carlson**<br>President Elect,<br>AOC International,<br>USA<br><br>**Co Chairman:**<br>**Dr A K Singh**<br>Sc 'G' , DLRL, DRDO<br><br>**Duration:**<br>16:30 to 17:30 Hrs | **ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS** | | |
| | 060R070 | **Latest Trends in High Power Microwave Power Modules**<br>Steve Walley<br>Vice President, Business Development, dB Control, USA | 16:30 to 16:50 Hrs |
| | 032R060 | **Wide Band Low Noise Multi-waveform X-Band Exciter With Inbuilt Target Simulation**<br>Vikas Kumar, Fouziya C, Nirbhay Kumar, Venkatmuni, Kalyani Murthy,<br>Bharat Electronics Limited , Bangalore | 16:50 to 17:10 Hrs |
| | 014R061 | **Design and Development of 50W V/UHF booster Power Amplifier**<br>Chandrashekar K, Vanitha Chavan L, Prakash S.P<br>Bharat Electronics Limited, Bangalore | 17:10 to 17:30 Hrs |
| **17:30 Hrs: End of the Day 1**<br>**19:00 Hrs :Cultural Programme and Conference Dinner , Venue: Banquet Hall, Four Seasons Hotel, Bangalore** | | | |

| 19 February 2020 | Day 2 : TECHNICAL SESSIONS 4, 7, 10 & 13 and Invited Talk 1 & 2 | | J N Tata Auditorium |
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| **Invited Talk 1** | **Establishing EW Relationships**<br>By Lisa K Fruge - Cirilli, BAe Systems, Past President, AOC International, USA | | 09:00 to 09:30 Hrs |
| **Invited Talk 2** | **New Developments In Test and Evaluation of EW Systems, a US Perspective**<br>By Greg Patschke , Keysight Technologies, USA | | 09:30 to 10:00 Hrs |
| **Session 4**<br>**Chairperson:**<br>**Lisa K Fruge-Cirilli**<br>BAE Systems,<br>Past President,<br>AOC Intl., USA<br>**Co Chairman:**<br>**Wg.Cdr. (Retd)**<br>**V B Athmaram**<br>CMD, 3S Sensor<br>Systems Tech, ND<br>**Duration:**<br>10:00 to 11:00 Hrs | **EW ANTENNAS & ACTIVE PHASED ARRAY SYSTEMS - I** | | |
| | 045R032 | **Design and Development of Conformal 3 Bay Antenna Subsytem for Aerostat COMINT Applications**<br>Takeshore Kh., C.Sairam , Sheilu Singh, S.D. Ahirwar, Dr. M. Chakravarthy<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 10:00 to 10:20 Hrs |
| | 028R016 | **Impact of Antenna pattern variations on DOA accuracy in Amplitude Comparison technique for RWR system**<br>Damodaran V,Anil Kumar,Tuhin Roy<br>Bharat Electronics Ltd, Bangalore | 10:20 to 10:40 Hrs |
| | 043R033 | **Design and Development of compact 2 Bay Monitoring Antenna Subsyetm for COMINT Applications**<br>C.Sairam, Takeshore Kh., S.D. Ahirwar, Sheilu Singh, M Chakravarthy<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 10:40 to 11:00 Hrs |
| **11:00 to 11:30 Hrs : Tea Break** | | | |
| ***Session 7***<br>***Chairman:***<br>**Dr K Maheshwara Reddy**<br>DS & Director,<br>DARE,DRDO<br>**Co Chairman:**<br>**Lokesha B N**<br>Sc 'G', DARE, DRDO<br>***Duration:***<br>11:30 to 12:30 Hrs | **EW SYSTEMS AND DF TECHNIQUES – II** | | |
| | 040R075 | **A System Architecture for Agile EW Solutions – The Need for Modularity and Openness in Optimising Platform Survivability**<br>Morten Weiss Schousen , Business Development Director, Asia/Pacific, Terma A/S, Denmark | 11:30 to 11:50 Hrs |
| | 035R068 | **MINERVA - Modern Naval EW Defence System**<br>Dr Andrea De Martino<br>Hon. CTO , Elettronica, Italy | 11:50 to 12:10 Hrs |
| | 064R071 | **VIRCATOR for Direct Microwave Energy Non - Lethal Weapon Systems**<br>A Spatola, E Giordano, A Mistretta, F Di Maggio<br>Leonardo S.p.A., Electronics Division, Palermo, Italy | 12:10 to 12:30 Hrs |
| **12:30 to 14:00 Hrs: Lunch Break and Time to Visit Technical Exhibition** | | | |
| **Invited Talk 3** | **Improving Situational Awareness by Gathering Critical Meta Data :**<br>**Geo-Location of RF Emissions - in Theory and Practice**, By Volker Brands, Narda-STS, Germany | | 14:00 to 14:30 Hrs |
| **Invited Talk 4** | **Portable Modern Communication and Radar EW Test and Training Systems**<br>By Robby Miles, Oak Defense Ltd , Canada and Harish H V, CEO, Aidin Technologies, Bangalore, India | | 14:30 to 15:00 Hrs |
| **Session 10**<br>**Chairman:**<br>**Angsuman Rudra**<br>CEO, D-TA Systems<br>Inc., Canada<br>**Co Chairman:**<br>**K Radha Krishna**<br>Sc 'G' , DLRL, DRDO<br>**Duration:**<br>15:00 to 16:00 Hrs | **EW SIGNAL PROCESSING AND DIGITAL RECEIVERS – II** | | |
| | 037R005 | **A Quad 12bit 1.6GSps ADC for Digital Beam-forming Receivers**<br>J Duvernay, J Cochard, R Pilard, M Martin, M Stackler, A Glascott-Jones<br>Teledyne-e2v Semiconductors , France | 15:00 to 15:20 Hrs |
| | 001R002 | **Master Control Unit for Electro-Optics based Electronic Warfare Suite**<br>Nagarjun M N, Bhargav M B<br>Bharat Electronics Ltd, Bangalore | 15:20 to 16:40 Hrs |
| | 038R006 | **Direct Microwave Conversion in Low Latency Applications**<br>A. Glascott-Jones, J. Cochard, R. Pilard, J. Duvernay<br>Teledyne e2v Semiconductors, France | 15:40 to 16:00 Hrs |
| **16:00 to 16:30 Hrs : Tea Break** | | | |
| **Session 13**<br>**Chairman:**<br>**J Shanker Rao**<br>Former Sc H,<br>DLRL, DRDO<br>**Co Chairman:**<br>**Dr M Chakravarthy**<br>Sc G, DLRL, DRDO<br>**Duration:**<br>16:30 to 17:50 Hrs | **EW ANTENNAS & ACTIVE PHASED ARRAY SYSTEMS – II** | | |
| | 044R034 | **Low Profile Spiral Antenna with EBG Ground plane for Amplitude comparison Direction Finding System**<br>P.Sowmya, K. Bhramaramba , H. Sudhir, Dr. M Chakravarthy<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 16:30 to 16:50 Hrs |
| | 050R036 | **16 x 8 Planar Array Antenna using 3-D Vivaldi Element for EW application**<br>Pranab Kumar Thander, K Bhramaramba , H. Sudhir, M Chakravarthy<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 16:50 to 17:10 Hrs |
| | 046R035 | **Miniaturised Broadband Spiral antenna using hybrid loading for Phase comparison Direction Finding System**<br>Brahmadev Shaw, P.Sowmya, K Bhramaramba, Dr. M. Chakravarthy<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 17:10 to 17:30 Hrs |
| | | | 17:30 to 17:50 Hrs |
| **17:50 Hrs: End of Day 2 for J N Tata Auditorium** | | | |

| 19 February 2020 | Day 2 : TECHNICAL SESSIONS 5, 8, 11, 14 | | Seminar Hall A |
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| **Session 5**<br>**Chairman:**<br>**S S Nagaraj**<br>DS & Director<br>LRDE, DRDO<br><br>**Co Chairman:**<br>**UVV Krishna Veni**<br>Sc 'G' , DLRL, DRDO<br><br>**Duration:**<br>10:00 to 11:00 Hrs | **EW SIGNAL PROCESSING AND DIGITAL RECEIVERS – I** | | |
| | 010R010 | **Generic platform for Signal, Image & video processing based on TI Keystone Architecture**<br>Suja Susan George, Sivanantham S, Vikram R<br>Bharat Electronics Ltd, Bangalore | 10:00 to 10:20 Hrs |
| | 047R028 | **Performance Comparison among Analog Receiver, Non-FFT and FFT based Digital Receivers for Radar EW Application**<br>Dr. A K Singh, G Chandrashekhar, T Anji Babu, Anupam Sharma,<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 10:20 to 10:40 Hrs |
| | 011R013 | **Advanced De-interleaving Techniques for Emitter Identification in Electronic Warfare**<br>Swati Khatkar, Anju John, Rajasree K P, Chaveli Ramesh, Ranjith T, Vijayakumar M S<br>Bharat Electronics Ltd , Bangalore | 10:40 to 11:00 Hrs |
| **11:00 to 11:30 Hrs : Tea Break** | | | |
| **Session 8**<br>**Chairman:**<br>**Chris Johnston**<br>Keysight<br>Technologies,<br>USA<br>**Co Chairman:**<br>**Dr P S Pandian**<br>Director (Tech),<br>Office of DG(ECS),<br>DRDO<br>**Duration:**<br>11:30 to 12:30 Hrs | **EW SOFTWARE ENGINEERING / MODELING & CERTIFICATION - I** | | |
| | 027R066 | **Changing Intuition into Intelligence using information fusion Systems**<br>Marcel Auret<br>SAAB Medav Systems | 11:30 to 11:50 Hrs |
| | 055R074 | **High Channel-Count Phased Coherent Radar Architecture (HF/VHF to K) and Open-Architecture Simulator Based Testing**<br>Angsuman Rudra , CEO, D-TA Systems Inc, Ottawa, Canada | 11:50 to 12:10 Hrs |
| | 029R012 | **Emitter Library Matching using Machine Learning for Target Identification in Defence C4I Systems**<br>Tushar K Patra, Manoj Tyagi, Sandeep Kumar,<br>Bharat Electronics Ltd , Gaziabad | 12:10 to 12:30 Hrs |
| **12:30 to 14:00 Hrs : Lunch Break and Time to Visit Technical Exhibition** | | | |
| **Session 11**<br>**Chairman:**<br>**Dr Umamaheswara Reddy**<br>OS & Director,<br>MTRDC,DRDO<br>**Co Chairman:**<br>**C H Durgaprasad**<br>Sc G, DARE, DRDO<br>**Duration:**<br>15:00 to 16:00 Hrs | **EW THREAT SIMULATORS AND EW TESTING / EVALUATION – II** | | |
| | 020R073 | **Test and Evaluation of Cognitive EA Systems - Requirements for Future Test**<br>Dan Pleasant and Philip Lorch<br>Keysight Technologies, Inc., Santa Rosa, CA, 95403, USA | 15:00 to 15:20 Hrs |
| | 015R003 | **Electronic Warfare Receiver Calibration & Direction Finding Error Correction Using DGPS**<br>M.Sreenivasa Rao<br>Defence Avionics Research Establishment, DRDO, Bangalore | 15:20 to 16:40 Hrs |
| | 026R067 | **From Development to Production – EW System Test and Evaluation**<br>Uri Shatit , Yaron Naor<br>Elbit Systems -EW and SIGINT - Elisra , Holon, Israel | 15:40 to 16:00 Hrs |
| **16:00 to 16:30 Hrs : Tea Break** | | | |
| **Session 14**<br><br>**Chairman:**<br>**Marcel Auret**<br>SAAB Medav<br>Technologies,<br>GmbH, Germany<br><br><br>**Co Chairman:**<br>**V Viraja**<br>Sc G, DLRL, DRDO<br><br><br>**Duration:**<br>16:30 to 17:50 Hrs | **EW SIGNAL PROCESSING AND DIGITAL RECEIVERS – III** | | |
| | 052R030 | **Side lobe suppression in a Rotary DF System by synthesising the Omni Radiation Pattern using Digital Receiver**<br>Sagnik Biswas, Prashant Tripathi, , Om Prakash R C<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 16:30 to 16:50 Hrs |
| | 031R076 | **The EA – EP Duel for LFM Waveform**<br>Girish M, Lokesha B N<br>Defence Avionics Research Establishment, DRDO, Bangalore | 16:50 to 17:10 Hrs |
| | 003R055 | **DoA algorithm for Detection of Low Power Signals in 6-18GHz**<br>D. Pushpa Latha, D. Arjuna Rao, D Suvarna<br>Bharat Electronics Limited, Hyderabad | 17:10 to 17:30 Hrs |
| | 019R039 | **Direction Finding by means of Registering Time of Arrival Data at Higher clock speed using FPGA**<br>MA Satish Babu<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 17:30 to 17:50 Hrs |
| | | | 17:50 to 18:10 Hrs |
| **18:10: End of Day 2 for Seminar Hall A** | | | |

| 19 February 2020 | Day 2 : TECHNICAL SESSIONS 6, 9, 12, 15 | | Seminar Hall B |
|---|---|---|---|
| **Session 6**<br>**Chairman:**<br>**Mahesh V**<br>Director (R&D), BEL<br><br>**Co Chairman:**<br>**Chandan Viswanadham**<br>AGM, BEL<br><br>**Duration:**<br>10:00 to 11:00 Hrs | **EW THREAT SIMULATORS AND EW TESTING / EVALUATION – I** | | |
| | 016R004 | **Aircraft Installed EW System Evaluation On Ground**<br>M.Sreenivasa Rao<br>Defence Avionics Research Establishment, Bangalore | 10:00 to 10:20 Hrs |
| | 005R009 | **Radar Waveform Generation and Jamming Signal Simulation in Dynamic Environment For EW Application**<br>M Firoz Shah, BN Lokesh, Girish M<br>Defence Avionics Research Establishment, DRDO, Bangalore | 10:20 to 10:40 Hrs |
| | 034R019 | **ATE for Performance Evaluation of ESM Systems**<br>P.M.Padhmanaaban, R.Rama Rao,T N Yadgiri Rao<br>Astra Microwave Products Ltd., Hyderabad | 10:40 to 11:00 Hrs |
| **11:00 to 11:30 Hrs : Tea Break** | | | |
| **Session 9**<br>**Chairman:**<br>**Dr A T Kalghatgi**<br>Former Director (R&D), BEL<br>**Co Chairman:**<br>**Anil Sogi**<br>AGM, BEL<br>**Duration:**<br>11:30 to 12:30 Hrs | **EW SYSTEMS INSTALLATION & TESTING / EVALUATION** | | |
| | 053R031 | **Safety-of-Flight Testing of Airborne ESM Systems**<br>Prashant Tripathi , B Sudheer Reddy, Ananya Mishra, N Sreedevi, V S Chakravarthy, Tapas Kumar Hazra<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 11:30 to 11:50 Hrs |
| | 030R024 | **Thermal Design of COTS based Electronic Equipment**<br>Prashant, Karthikeyan A, Rajashekar T S<br>Bharat Electronics Ltd , Bangalore | 11:50 to 12:10 Hrs |
| | 041R038 | **Application of Commercial Autonomous underwater vehicles (AUVs) for Electronic Warfare Missions**<br>Lakshmi, VRC Prasad<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 12:10 to 12:30 Hrs |
| **12:30 to 14:00 Hrs : Lunch Break and Time to Visit Technical Exhibition** | | | |
| **Session 12**<br>**Chairman:**<br>**Volker Brands**<br>Narda-STS, GmbH, Germany<br>**Co Chairman:**<br>**K Anitha**<br>Sc G, DLRL, DRDO<br>**Duration:**<br>15:00 to 16:00 Hrs | **EW SOFTWARE ENGINEERING / MODELING & CERTIFICATION – II** | | |
| | 006R007 | **Multi – RT Protocol for Avionics Simulation**<br>Narasimhulu.P, Arun Chutke ,Shishir Kumar<br>RCI, DRDO, Hyderabad | 15:00 to 15:20 Hrs |
| | 023R015 | **Vulnerability Assessment and Penetration Testing (A Proactive Process to Identify and Mitigate Threats)**<br>Bhagya Lakshmi A. N, Shylaja K<br>Bharat Electronics Limited, Bangalore | 15:20 to 16:40 Hrs |
| | 056R043 | **Data Analysis at GCS of Satellite based ELINT system**<br>U V V Krishnaveni, K. Aruna, Manoj Sharma<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 15:40 to 16:00 Hrs |
| **16:00 to 16:30 Hrs : Tea Break** | | | |
| **Session 15**<br><br>**Chairman:**<br>**Patrick Clarke**<br>SAAB Grintek Defence, South Africa<br><br>**Co Chairman:**<br>**Dr Niranjan Prasad**<br>Sc G, DLRL, DRDO<br><br>**Duration:**<br>16:30 to 17:50 Hrs | **EW SOFTWARE ENGINEERING / MODELING & CERTIFICATION – III** | | |
| | 013R021 | **Open Source Intelligence Analytics in Information Warfare using Machine Learning**<br>Poornima M<br>Bharat Electronics Ltd, Bangalore | 16:30 to 16:50 Hrs |
| | 061R046 | **Mission Planning and Scheduling for ELINT System on High Altitude Platform**<br>Mahendra Pratap, N Sreelakshmi, Anupam Sharma<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 16:50 to 17:10 Hrs |
| | 036R023 | **A Soft Algorithm for Detection and Classification of Audio Activity**<br>Suraksha K Gowda, Aditya T Hegde, Nalini Matturthi, Gaurav Jyoti Phukan<br>Bharat Electronics Ltd, Bangalore | 17:10 to 17:30 Hrs |
| | R049 | **Multi-Tier MANETs for Secure Military Communication**<br>P. Neeharika, DM. Dhanunjaya<br>Bharat Electronics Ltd, Hyderabad | 17:30 to 17:50 Hrs |
| | | | 17:50 to 18:10 Hrs |
| **18:10 Hrs: End of Day 2 for Seminar Hall B** | | | |

| 20 February 2018 | Day 3: TECHNICAL SESSIONS 16 & 19 and INVITED TALK 5,6 | | J N Tata Auditorium |
|---|---|---|---|
| **Invited Talk 5** | **Specific Emitter Identification of COMMS Signals**<br>By Fabrizio Vergari, Elettronica , Italy | | 09:00 to 09:30 Hrs |
| **Invited Talk 6** | **Advances in Submarine ESM Systems**<br>By Patrick Clarke, SAAB Grintek Defence, South Africa | | 09:30 to 10:00 Hrs |
| **Session 16**<br>**Chairman:**<br>**Anupama Sharma**<br>Sc H, DLRL, DRDO<br><br>**Co Chairman:**<br>**SR Pankaj Kumar**<br>Sc G, DLRL, DRDO<br><br>**Duration:**<br>10:00 to 11:00 Hrs | **EW SIGNAL PROCESSING AND DIGITAL RECEIVERS – IV** | | |
| | 051R040 | **A Technique for De-Spreading of Frequency Hopping Signals for Communication Surveillance System**<br>Gaurav Lohiya , Surendra Singh<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 10:00 to 10:20 Hrs |
| | 059R045 | **PRI based Pulse De-interleaving**<br>B.Babulal, Kalpana Deo, K Radha Krishna<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 10:20 to 10:40 Hrs |
| | 022R054 | **Study of Different Methods to Detect the Explosive Devices – Indian Scenario**<br>M. Ravinder Reddy<br>Bharat Electronics Limited, Hyderabad | 10:40 to 11:00 Hrs |
| **11:00 to 11:30 : Tea Break** | | | |
| **Session 19**<br><br>**Chairman:**<br>**Steve Walley**<br>Vice President,<br>dB Control, USA<br><br>**Co Chairman:**<br>**Chandana Sairam**<br>Sc G, DLRL,DRDO<br><br>**Duration:**<br>11:30 to 13:10 Hrs | **EW RECEIVER AND RF SUBSYSTEMS – II** | | |
| | 002R011 | **Design & Development of 2 -18 GHz RF Over Fiber Link**<br>Renu Varshney, Gaurav Anand<br>Gourav Chaturvedi, Charu S Tripathi<br>Bharat Electronics Ltd , Bangalore | 11:30 to 11:50 Hrs |
| | R044 | **New Pragmatic Approaches towards Design of Legacy Digital Instantaneous Frequency Measurement Receiver**<br>Sounak Samanta, Amit Kumar Gupta, Col(Retd) B V B Prasad, M K Das, R V Haraprasad<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 11:50 to 12:10 Hrs |
| | 020R017 | **Highly Selective Compact Low Pass Filter with wide stop band for EW applications**<br>Rohit Lahiri, Gaurav Anand, Harikrishna MV<br>Bharat Electronics Ltd, Bangalore | 12:10 to 12:30 Hrs |
| | 004R053 | **Extended Dynamic Range Log Video Amplifier (EDLVA)**<br>D Arjuna Rao, D Pushpa Latha, D Suvarna,<br>Bharat Electronics Ltd , Hyderabad | 12:30 to 12:50 Hrs |
| | | | 12:50 to 13:10 Hrs |
| **13:10 to 13:30 Hrs** | **Concluding Session:**<br>**Discussion on Feedback**<br>**Distribution of Certificates**<br>**Draw of Lucky Dip**<br>**Vote of thanks**<br>**Conclusion** | | |
| **13:30 to 16:00 Hrs: Final opportunity to Visit Stalls and Interact with Exhibitors. End of the EWCI 2020** | | | |

| 20 February 2020 | Day 3: TECHNICAL SESSIONS 17 & 20 | Seminar Hall A | |
|---|---|---|---|
| **Session 17**<br>**Chairman:**<br>**Dr Andrea De Martino**<br>Elettronica , Italy<br><br>**Co Chairman:**<br>**H Sudhir**<br>Sc G, DLRL, DRDO<br><br>**Duration:**<br>10:00 to 11:00 Hrs | **EW THREAT SIMULATORS AND EW TESTING / EVALUATION – III** | | |
| | 018R022 | **Test Methodology to Characterize Active Phased Array Radar (APAR)**<br>Raghavendra N A, Abhishek Kulkarni, Dodamani R L, Neelaraddi H K,<br>Bharat Electronics Ltd, Bangalore | 10:00 to 10:20 Hrs |
| | 033R020 | **ATE for Antenna Radiation Pattern Measurements**<br>S Nagaraju,R.Rama Rao, T N Yadgiri Rao<br>Astra Microwave Products Ltd., Hyderabad | 10:20 to 10:40 Hrs |
| | 042R037 | **Range Control Centre Technologies for Test & Evaluation of Modern Electronic Warfare Systems**<br>Rajesh Kumar, Dr Niranjan Prasad<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 10:40 to 11:00 Hrs |
| **11:00 to 11:30 Hrs : Tea Break** | | | |
| **Session 20**<br><br>**Chairman:**<br>**Robby Miles**<br>Oak Defense Ltd., Canada<br><br>**Co Chairman:**<br>**Col (Retd) BVB Prasad**<br>Sc G, DLRL, DRDO<br><br>**Duration:**<br>11:30 to 13:10 Hrs | **EW SYSTEMS AND DF TECHNIQUES – III** | | |
| | 054R027 | **Ground Control Station Operations for Satellite based EW Payload**<br>Naveen Kumar P, Vijaya Bhaskara Chary, N Sreelakshmi<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 11:30 to 11:50 Hrs |
| | 039R048 | **Challenges In Collaborative Approach**<br>N Sujatha Nagalakshmi<br>Bharat Electronics Limited, Hyderabad | 11:50 to 12:10 Hrs |
| | 063R072 | **MAIR – A New IR-Based Multi Function Air Protection System**<br>R Conte, A Pozzi, A Minelli, M Luoni, A Ondini, A Spatola, G Balzarotti<br>Leonardo S.p.A., Electronics Division, Nerviano, Italy | 12:10 to 12:30 Hrs |
| | 048R025 | **Formation Based Passive Geolocation of RF Emitter using 3D TDOA Measurements for Space Electronic Warfare Applications**<br>Suman Agrawal, G Elisha Sudhakar, Anupam Sharma<br>Defence Electronic Research Laboratory, DRDO, Hyderabad | 12:30 to 12:50 Hrs |
| | 062R077 | **Reshaping Speed of Electronic Warfare Test with Pathwave Automation**<br>Visha Gupta, Srisailam T, Pawan Kumar, Keysight Technologies, India | 12:50 to 13:10 Hrs |
| **13:15 to 14:00 Hrs: Lunch Break** | | | |

| 20 February 2020 | Day 3: TECHNICAL SESSIONS 18 & 21 | Seminar Hall B | |
|---|---|---|---|
| **Session 18**<br>**Chairman:**<br>**Andrew Glascott - Jones,**<br>Teledyne e2V, Grenoble, France<br><br>**Co Chairman:**<br>**A Narayana Rao**<br>Sc G, DLRL, DRDO<br>**Duration:**<br>10:00 to 11:00 Hrs | **EW SOFTWARE ENGINEERING / MODELING & CERTIFICATION – IV** | | |
| | 009R050 | **Real time UAV Detection and Tracking with deep learning and computer vision**<br>Kola Srinivasa Rao<br>Bharat Electronics Ltd, Hyderabad | 10:00 to 10:20 Hrs |
| | 024R051 | **Machine learning based De-interleaving algorithm for advanced ELINT systems**<br>Dileep Kumar Killaka, Dubbaka Shanker<br>Bharat Electronics Ltd , Hyderabad | 10:20 to 10:40 Hrs |
| | R063 | **Network Intrusion Detection Using Generative Adversarial Networks (GANs)**<br>Shantanu, DIT & CS, DRDO, New Delhi,<br>Dr Saibal K Pal , SAG, DRDO, Delhi | 10:40 to 11:00 Hrs |
| **10:30 to 11:00 Hrs : Tea Break** | | | |
| **Session 21**<br><br>**Chairman:**<br>**Fabrizio Vergari**<br>Elettronica , Italy<br><br>**Co Chairman:**<br>**N Ratna Sekhar**<br>Sc G, DLRL, DRDO<br><br>**Duration:**<br>11:30 to 13:10 Hrs | **EW SOFTWARE ENGINEERING / MODELING & CERTIFICATION – V** | | |
| | 065R052 | **Big Data Analytics in EW for predicting Call Sign Information and its movement**<br>S. Venkatesh, N. Raja Narasimhulu<br>Bharat Electronics Ltd , Hyderabad | 11:30 to 11:50 Hrs |
| | 007R056 | **Attribute tagging and grouping of similar targets by text mining and voice analysis for an EW System**<br>P Laxmana Sai, U Rajesh Kumar<br>Bharat Electronics Ltd , Hyderabad | 11:50 to 12:10 Hrs |
| | 017R062 | **Design of Microcontroller based Control and Monitor circuit for RF Power Amplifier using Ethernet Communication**<br>Vanitha Chavan L, Chandrashekar K, Devindra M.C, Prakash S.P,<br>Bharat Electronics Limited , Bangalore | 12:10 to 12:30 Hrs |
| | 025R058 | **Robust Algorithm for Automatic Barker code Identification**<br>Dubbaka Shanker<br>Bharat Electronics Ltd ,Hyderabad | 12:30 to 12:50 Hrs |
| | R057 | **Location Approximation using Machine Learning**<br>B Kiran Kumar , P Laxmana Sai<br>Bharat Electronics Ltd , Hyderabad | 12:50 to 13:10 Hrs |
| **13:15 to 14:00 Hrs: Lunch Break** | | | |