



Fourth International Conference on Electronic Warfare - EWCI 2016

NSSC, Indian Institute of Science, Bangalore, India (22 to 25 February 2016)

PROGRAMME SUMMARY

| 22 Feb 2016, 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 Chief Guest, Dr A T Kalghatgi, Director (R&D), Bharat Electronics Ltd, Bangalore | | |
| 09:30 to 11:00 Hrs | Tutorial 1 : Next Generation of Multi-functional EW Systems, By Dr Andrea De Martino, ELETTRONICA, Italy | | |
| 11:00 to 11:30 Hrs | Tea Break | | |
| 11:30 to 13:00 Hrs | Tutorial 2: Modern Radar EW Architectures and Technology to face New Threat Challenges, By J M Pascual Ruiz & David L Loscos, INDRA, Spain | | |
| 13:00 to 14:00 Hrs | Lunch Break | | |
| 14:00 to 15:30 Hrs | Tutorial 3 : Advancements and Design Concepts for Modern EW Test and Training Ranges, By H Screven & R Miles, Northrop Grumman, USA | | |
| 15:30 to 16:00 Hrs | Tea Break | | |
| 16:00 to 17:30 Hrs | Tutorial 4 : Advances in EO Technology, Systems and Countermeasures, By Stuart Chapman, Selex ES Ltd, UK | | |
| 23 Feb 2016, Tuesday | | Day 1 : Inaugural, Plenary and Technical Sessions | |
| 08:00 to 08:45 Hrs | Registration for the Conference at the Event's Venue | | |
| 09:00 to 10:45 Hrs | Inaugural Function at J N Tata Auditorium : Introductory Address, Inauguration of the Conference , Release of Souvenir, Keynote Address, Patron Address, Theme Talk and Addresses by Conference Chair, Technical Committee Chair and Chief Guest | | |
| 10:45 to 11:15 Hrs | Inauguration and Visit of Technical Exhibition by Dignitaries | | |
| 10:45 to 11:15 Hrs | Hi Tea | | |
| 11:15 to 12:00 Hrs | Time to Visit Technical Exhibition | | |
| 12:00 to 13:00 Hrs | Plenary Session - I at J N Tata Auditorium : Current Trends in US EW Technology, By Mr Dave Hime, President AOC International, USA Comprehensive ES and EA Technologies - Trends in Indian Scenario, By Dr C G Balaji, DS and Director, DLRL, DRDO, Hyderabad, India | | |
| 13:00 to 13:45 Hrs | Lunch Break | | |
| 13:45 to 14:30 Hrs | Time to Visit Technical Exhibition | | |
| 14:30 to 15:00 Hrs | Invited Talk 1 at J N Tata Auditorium : Miysis - The Smallest Lightest Multi-Head DIRCM System for Protection against Advanced MANPADS By Mr Stuart Chapman, Selex ES, UK | | |
| 15:00 to 16:00 Hrs | Plenary Session - II at J N Tata Auditorium: Challenges in EW Technologies - Development to Production Scenario in India, By Dr A T Kalghatgi, Director R & D, BEL, Bangalore, India Advances in Airborne Integrated EW Systems – An Overview, By Dr K Maheswara Reddy, OS and Director, DARE, DRDO, Bangalore, India | | |
| 16:00 to 16:30 Hrs | Tea Break | | |
| 16:30 to 17:50 Hrs | Session 1 at JN Tata Auditorium | : EW SYSTEMS AND DF TECHNIQUES– I (4 Papers) | |
| | Session 2 at Seminar Hall A | : ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS – I (4 Papers) | |
| | Session 3 at Seminar Hall B | : EW RECEIVERS AND RF SUB SYSTEMS – I (4 Papers) | |
| 19:00 Hrs | Cultural Programme followed by Conference Dinner Venue : Grand Ball Room, Shangri-La Hotel, Palace Road, Bangalore | | |
| 24 Feb 2016, Wednesday | | Day 2 : Invited Talks and Technical Sessions | |
| 09:00 to 09:30 Hrs | Invited Talk 2 at J N Tata Auditorium | : Radar Band EW Architectures and Technology to Face Future Threats By Mr José Miguel Pascual Ruiz and Mr David Lazaro Loscos, INDRA, Spain | |
| 09:30 to 10:50 Hrs | Session 4 at JN Tata Auditorium | : EW ANTENNAS AND ACTIVE PHASED ARRAY SYSTEMS – I (4 Papers) | |
| | Session 5 at Seminar Hall A | : COMMUNICATION EW AND RCIED – I (4 Papers) | |
| | Session 6 at Seminar Hall B | : EW SIGNAL PROCESSORS AND DIGITAL RECEIVERS – I (4 Papers) | |
| 10:50 to 11:10 Hrs | Tea Break | | |
| 11:10 to 12:30 Hrs | Session 7 at JN Tata Auditorium | : EW/EO THREAT STIMULATORS AND EW TESTING/ EVALUATION (4 Papers) | |
| | Session 8 at Seminar Hall A | : EW SYSTEMS INSTALLATION AND TESTING / EVALUATION – I (4 Papers) | |
| | Session 9 at Seminar Hall B | : EW SYSTEMS SOFTWARE ENGINEERING / MODELLING AND CERTIFICATION – I (4 Papers) | |
| 12:30 to 13:30 Hrs | Lunch Break | | |
| 13:30 to 14:00 Hrs | Time to Visit Technical Exhibition | | |
| 14:00 to 14:30 Hrs | Invited Talk 3 at J N Tata Auditorium | : EW Operational Support and System evaluation – A Naval Perspective By Cdr Pradeep Sundaram, Naval Head Quarters, New Delhi | |
| 14:30 to 15:00 Hrs | Invited Talk 4 at J N Tata Auditorium | : Britecloud - The World's First Expendable DRFM Jammer for Fast-jet Aircraft By Mr Geoff Tithcott, Selex ES, UK | |
| 15:00 to 16:20 Hrs | Session 10 at JN Tata Auditorium | : ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS – II (4 Papers) | |
| | Session 11 at Seminar Hall A | : EW RECEIVERS AND RF SUB SYSTEMS – II (4 Papers) | |
| | Session 12 at Seminar Hall B | : EW SYSTEMS AND DF TECHNIQUES – II (4 Papers) | |
| 16:20 to 16:40 Hrs | Tea Break | | |
| 16:40 to 18:00 Hrs | Session 13 at JN Tata Auditorium | : EW SIGNAL PROCESSORS AND DIGITAL RECEIVERS – II (4 Papers) | |
| | Session 14 at Seminar Hall A | : EW ANTENNAS, ACTIVE PHASED ARRAY SYSTEMS AND DIRCM – II (4 Papers) | |
| | Session 15 at Seminar Hall B | : COMMUNICATION EW AND RCIED – II (4 Papers) | |
| 25 Feb 2016, Thursday | | Day 3 : Invited Talks, Technical Sessions and Panel Discussion | |
| 09:00 to 10:00 Hrs | Invited Talk 5 at J N Tata Auditorium | : LPI Radars Detection and Classification By Dr Andrea De Martino, Elettronica, Rome, Italy | |
| | Invited Talk 6 at J N Tata Auditorium | : Defense Market Outlook: Technology Trends for Next Generation EW, Radar and Communications, By Mr Asif Anwar, Strategy Analytics Ltd, UK | |
| 10:00 to 11:20 Hrs | Session 16 at JN Tata Auditorium | : EW SYSTEMS INSTALLATION AND TESTING / EVALUATION – II (4 Papers) | |
| | Session 17 at Seminar Hall A | : ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS – III (4 Papers) | |
| | Session 18 at Seminar Hall B | : EW SYSTEMS SOFTWARE ENGINEERING / MODELLING AND CERTIFICATION –II (4 Papers) | |
| 11:20 to 11:40 Hrs | Tea Break | | |
| 11:40 to 12:40 Hrs | Session 19 at JN Tata Auditorium | : COMMUNICATION EW AND RCIED – III (3 Papers) | |
| | Session 20 at Seminar Hall A | : ELECTRONIC ATTACK & HIGH POWER TRANSMITTERS AND EW SIGNAL PROCESSORS – IV (3 Papers) | |
| | Session 21 at Seminar Hall B | : EW ANTENNAS AND ACTIVE PHASED ARRAY SYSTEMS – III (3 Papers) | |
| 12:45 to 13:30 Hrs | Panel Discussion and Closing Function at J N Tata Auditorium: Distribution of Certificates, Discussions on Feedback, Future Course of EWCI and AOC India Chapter, Vote of Thanks | | |
| 13:30 to 14:30 Hrs | Lunch Break | | |
| 14:30 to 16:30 Hrs | Final Opportunity to Visit Stalls and Interact with Exhibitors and End of the Conference | | |



Tutorial 1 : 09:30 to 11:00 Hrs

NEXT GENERATION OF MULTI-FUNCTIONAL EW SYSTEMS

By Dr Andrea De Martino, Elettronica, 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, Microwave to EFA-DASS. He held the position of Technical Director of the Euro-DASS Consortium. He currently holds position of CTO in Elettronica. Dr De Martino is holder of some Patents, and author of the book "Introduction to Modern EW Systems" and many Technical Papers on Radar and EW equipment techniques and technologies.



Coverage: Military Platforms require Multifunctional Radar and Integrated EW Systems that have to share their functionalities to cope with the three issues, namely, the evolution of the threat (both RF and IR), the limited available on board volumes/power consumptions and the receivers' compatibility issues produced by the RF transmit operation of the on-board Radar, EW, Navigation and Communications equipment. Multi-function Integrated RF System (MIRFS) will constitute the final solution. That equipment will employ a number of novel technologies such as: large bandwidth RF Active SS Electronically Scanning Conformal Antennas (AESAs), powerful Field Programmable digital Gate Arrays (FPGA) and a system processor provided with a proper Scheduler and Resources Allocator (SRA). The Tutorial will first address the above requirements and then introduce the System Architecture of a modular and scalable New Generation (NG) airborne/shipboard Integrated EW System (NGIEWS). The NGIEWS is based on High Data Rate Signal processing subassemblies, Wide Band Solid State (SS) Active Phased Arrays (provided with Transmit /Receive Modules) in the RF domain and integrates Sensors and Effectors, DIRCM and CFD in the IR domain.

Tea Break : 11:00 to 11:30 Hrs

Tutorial 2 : 11:30 to 13:00 Hrs

MODERN RADAR EW ARCHITECTURES AND TECHNOLOGY TO FACE NEW THREAT CHALLENGES

By Mr Jose Miguel Pascual Ruiz and Mr David Lazaro Loscos, Indra, Spain

The Speaker **Mr José Miguel Pascual Ruiz** is a Telecommunication Engineer and has lead technological innovations at INDRA in SIGINT/ELINT, DRFM and Digital Reception Technology presently deployed on INDRA EW products. Mr. Pascual has been involved on most of Spanish Intelligence and EW Tactical programs. Mr. Pascual has authored many Technical Papers. Presently he is Technology and Product Development Deputy Director at INDRA, Spain.



The Co-Speaker, **Mr David Lázaro Loscos** is a Computer Science Engineer and has lead multiple Digital Reception innovative developments for INDRA EW products. He has worked as System Engineer in multiple international projects based on RWR / ELINT / ESM INDRA products based on digital reception technology, also participated in international study groups on LPI radar detection and digital reception technology. He is Area Director at INDRA, in charge of the definition and development for new EW Sensors.



Coverage: The Tutorial describes the continuous evolving EW scenarios and related emissions. LPI are spreading and also complex waveforms with agility and interacting with other guiding modes or network oriented. Presented are the New evolved ADCs together with microwave components and real time processors, results on a DRX channel architecture that becomes the building block of different EW systems with example of High accuracy interferometer. The new systems are able to provide an intensive use of recording and analysis capabilities linked to ELINT application that can be exploited on tactical approaches, as ambiguity solving, on ESM/RWR systems or on specific ELINT systems associated with special antenna sets and analysis functions. On the EA field, similar way will be presented digital techniques based on DRFMs/DRXs with higher performances synchronized with ES systems to provide immediate and complex techniques, opportunities and threats associated to UAV platforms on its dual use as EW collaborative platform or a threat requiring a proper EW response. Emphasis will be given on the development of new affordable architectures for electronic pointing systems, based on GAN providing simultaneously power, multi-threat response and immediate reaction.

Lunch Break : 13:00 to 14:00 Hrs

Tutorial 3 : 14:00 to 15:30 Hrs

**ADVANCEMENTS AND DESIGN CONCEPTS FOR MODERN
EW TEST AND TRAINING RANGES**

**By Mr Harold Screven, Northrop Grumman, USA
and Mr Robby Miles, Ultra Telemus TCS, Canada**

The speaker, **Mr Harold Screven** is the Product Architect for the CEESIM Product Line and Manages the Product Architecture Group at Northrop Grumman Amherst Systems. Mr Screven has been actively involved with the Radar and Electronic Warfare communities for 25 Years and has been an employee of Northrop Grumman for a total of 20 years. Mr Screven is currently serving as the VP of the Niagara Frontier Chapter of the AOC.



The Co-Speaker, **Mr Robby Miles** is currently a Technical Project Manager at Ultra Electronics TCS with 15 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 Naval and Air Force EW Test and training systems.



Coverage: The tutorial covers the topics: Facilitate the testing, evaluation, and expert support to radio frequency, electro-optic, and infrared warning receivers and countermeasure devices, Perform precision measurements of the accuracy of targeting and navigation sensors installed on surface ships and aircraft, Facilitate the testing, evaluation and experimentation necessary for the development of new sensors and systems, Provide full spectrum capabilities in support of research, development, design, testing, acquisition support, and in-service engineering for signature reduction and silencing, Understanding what is needed when selecting a test range location, infrastructure, and skilled personnel, Design concepts for threat radar simulation, Design concepts for radar jamming simulation, Tracking paradigms, Key cost drivers when designing an air test range.

Tea Break : 15:30 to 16:00 Hrs

Tutorial 4 : 16:00 to 17:30 Hrs

**ADVANCES IN EO TECHNOLOGY, SYSTEMS AND
COUNTERMEASURES**

By Mr Stuart Chapman, Selex ES Ltd, UK

The Speaker **Mr Stuart Chapman** is the Capability Manager for EO/IRCM in Selex ES , UK. Mr Stuart graduated from Heriot-Watt University in 1983 with an Honours Degree in Solid State Physics, following which he joined the IR Seeker Group at BAe (Hatfield) as a Systems Engineer. While with BAe he obtained an Advanced Systems Engineering Post Graduate Diploma from Salford University. In Oct 1988 he joined Ferranti International (now Selex ES) as a Senior IR Systems Engineer working on the TIALD Airborne Laser designator programme, and subsequently became the engineering lead on EO Targeting programmes. Since 1996 Mr Stuart has held a number of Engineering and Technical leadership positions within the Selex ES DIRCM business, and is a recognised DIRCM Systems expert in the UK. In recognition of this expertise, Mr Stuart was made a Selex ES Technical Fellow in 2008.



Coverage: This Tutorial will dwell on the considerations in the Application of Advanced EO Technology to Threat Detection and Countermeasure Systems. The tutorial will discuss some of the key considerations necessary in the design of Advanced EO and IR based threat detection and Countermeasure Systems, and in particular will consider some of the system level benefits that have stemmed from recently available technologies. Topics that will be discussed include the trades between IR and UV missile approach warners that a DIRCM System Designer may have to undertake, the implications of more advanced seeker designs on EO/IRCM system design and architecture and the benefits that modern technology provides in terms of size, weight and power consumption. Considerations related to the Integration with other EW Systems will also be touched upon, as well as some platform installation drivers.

Inaugural Function

23 February 2016, Venue: J N Tata Auditorium, Duration: 09:00 to 11:15 Hrs

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| 09:00 to 09:10 Hrs | Invocation and Lighting of Lamp | |
| 09:10 to 09:20 Hrs | Introductory Address | By Conference Chair Dr U K Revankar, President, AOC India Chapter, Bangalore, India |
| 09:20 to 09:30 Hrs | Inauguration of Conference and Release of Souvenir | By Chief Guest Dr G Satheesh Reddy Scientific Advisor to Defence Minister Ministry of Defence, Govt. of India |
| 09:30 to 09:40 Hrs | About the Conference | By Chair, Conference Technical Committee Mr J Shanker Rao, Scientist H, DLRL, Hyderabad, India |
| 09:40 to 09:55 Hrs | Patron Address | Dr A K Kalghatgi, Director(R&D), BEL, Bangalore |
| 09:55 to 10:10 Hrs | Key Note Address | By Air Marshal P P Reddy, VM ADC CIDS to the Chairman COSC, Min. of Defence, Govt. of India |
| 10:10 to 10:25 Hrs | Key Note Address | By Dave Hime President, AOC International, USA |
| 10:25 to 10:40 Hrs | Inaugural Address | By Chief Guest |
| 10:40 to 10:45 Hrs | Vote of Thanks | By Conference Co-Chair Mr T N Yadgiri Rao, Vice President, AOC India Chapter |
| 10:45 to 11:15 Hrs | Inauguration and Visit of Technical Exhibition | By the Chief Guest and Dignitaries |

10:45 to 11:15 Hrs : Hi Tea

11:15 to 12:00 Hrs : Time to Visit Technical Exhibition

TUESDAY, 23 February 2016

Day 1 : PLENARY SESSION I

Venue : J N Tata Auditorium

Chair : Mr I V Sarma, Former Director (R&D), Bharat Electronics Limited, Bangalore, India
Co-Chair : M V Gowtama, Executive Director (Mil Com), Bharat Electronics Limited, Bangalore, India
Duration:12:00 to 13:00 Hrs

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| Plenary Talk 1 | Current Trends in US EW Technology Mr Dave Hime, President AOC International, USA | 12:00 to 12:30 Hrs |
| Plenary Talk 2 | Comprehensive ES and EA Technologies - Trends in Indian Scenario, Dr C G Balaji, DS and Director, DLRL, DRDO, Hyderabad, India | 12:30 to 13:00 Hrs |

13:00 to 13:45 Hrs :Lunch Break

13:45 to 14:30 Hrs : Time to Visit Technical Exhibition

TUESDAY, 23 February 2016

Day 1 : PLENARY SESSION II and Invited Talk 1

Venue : J N Tata Auditorium

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| Invited Talk 1 | Miysis - The Smallest Lightest Multi-Head DIRCM System for Protection against Advanced MANPADs, By Mr Stuart Chapman, Selex ES, UK | 14:30 to 15:00 Hrs |
| Chair : Dr U K Revankar , Former Director DARE, DRDO & President, AOC India Chapter Bangalore, India Co-Chair : Mr H V Harish , CEO, Spur India Limited & Secretary, AOC India Chapter Bangalore, India Duration: 15:00 to 16:00 Hrs | | |
| Plenary Talk 3 | Challenges in EW Technologies - Development to Production Scenario in India Dr A T Kalghatgi, Director R & D, BEL, Bangalore, India | 15:00 to 15:30 Hrs |
| Plenary Talk 4 | Advances in Airborne Integrated EW Systems – An Overview, Dr K Maheshwara Reddy, OS and Director, DARE, DRDO, Bangalore, India | 15:30 to 16:00 Hrs |

16:00 to 16:30 Hrs :Tea Break



Day 1: TECHNICAL SESSION 1

TUESDAY, 23 February 2016

Venue : J N Tata Auditorium

Session 1

EW SYSTEMS AND DF TECHNIQUES - I

| | | | |
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| Chairman: Dr Andrea De Martino, Elettronica, Italy Co Chairman: SD Malleshwar Rao, Scientist G, DLRL Duration: 16:30 to 17:50 Hrs | 022R002 | Integrated EW systems using multispectral assets for naval applications By Gabriele Falco, ELETTRONICA , Italy | 16:30 to 16:50 Hrs |
| | 020R020 | New challenges on EW drives Wideband DRX based System Architectures and Technologies By J M Pascual Ruiz, R Asenjo, M Solano, D Gallardo, M Buesa, D Lázaro, INDRA, Spain | 16:50 to 17:10 Hrs |
| | 023R001 | EW Suite for AW101 : a look into the future By Gabriele Falco, ELETTRONICA, Italy | 17:10 to 17:30 Hrs |
| | 039 | An advanced integrated Holistic approach for Naval EW Protection and Situation Awareness Suites By Yaakov Siman Tov, Nissan Viderman, Eilon Brenner, Elbit Systems Elisra, Israel | 17:30 to 17:50 Hrs |

End of the Day 1. Cultural Programme and Conference Dinner at 19:00 Hrs Venue : Grand Ball Room, Shangri-La Hotel, Palace Road, Bangalore



Day 1: TECHNICAL SESSION 2

TUESDAY, 23 February 2016

Venue : Seminar Hall A

Session 2

ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS – I

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| Chairman: Dr CG Balaji, DS & Director, DLRL, DRDO Co Chairman: DD Sarma, Scientist G, DLRL Duration: 16:30 to 17:50 Hrs | 082 | Emerging Technologies in High Power MPMs By Jacob Thampan and Steve Walley, dB Control Inc, USA | 16:30 to 16:50 Hrs |
| | 073 | Semi-Metallic Rods Structure for Controlling the Phase Velocity Dispersion in Helix TWT By R. Martorana, A. Nicosia & A. Spatola, Selex ES, Italy | 16:50 to 17:10 Hrs |
| | 060R087 | PIC simulations of Folded wave guide Slow wave structures for THz TWTs By H S Sudhamani & Sum Reddy, Microwave Tube Research & Development Centre, DRDO, BEL Complex, Bangalore, Jyothi Balakrishnan, Electronic Science Department, Bangalore University, Jnana Bharathi Complex, Bangalore | 17:10 to 17:30 Hrs |
| | 017R078 | Helix Mini-TWTs for EW Applications By Tushar K. Ghosh, Anthony Tokeley, Kevin Rushbrook, Ian Poston and Darrin Bowler, e2v Technologies Ltd, UK | 17:30 to 17:50 Hrs |

End of the Day 1. Cultural Programme and Conference Dinner at 19:00 Hrs Venue : Grand Ball Room, Shangri-La Hotel, Palace Road, Bangalore



Day 1: TECHNICAL SESSION 3

TUESDAY, 23 February 2016

Venue : Seminar Hall B

Session 3

EW RECEIVERS AND RF SUB SYSTEMS – I

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| Chairman: Dave Hime, President, AOC International, USA Co Chairman: RV Hara Prasad, Scientist G, DLRL Duration: 16:30 to 17:50 Hrs | 019R021 | RWR Systems and Technology Roadmap Towards Efficient Solutions By D Lázaro, F Vázquez, A Casao, S Garcia, A.Villalba, J M Pascual, INDRA, Spain | 16:30 to 16:50 Hrs |
| | 044R005 | Experimental Results of RF over Fiber Transmission for CD Band Receiver in EW By S K Raziya Begum, D Sai Deepthi, L Sweta & J S Mohan Kumar, BEL, Hyderabad | 16:50 to 17:10 Hrs |
| | 012R037 | Implementation of Gear Shifting Technique in Wideband PLL based Frequency Synthesizer for EW Applications By Manish Mendhe , Dr.Y.Hemalatha, B.Naresh Kumar & Srihari Merugu, SRF, Defence Electronics Research Laboratory, DRDO, Hyderabad | 17:10 to 17:30 Hrs |
| | 063R089 | Design & Development of Narrow band Receiver with multiplexed Log Video output By Arpana M K, Vasudha C, Rambabu G, Bharat Electronics Ltd, Bangalore | 17:30 to 17:50 Hrs |

End of the Day 1. Cultural Programme and Conference Dinner at 19:00 Hrs Venue : Grand Ball Room, Shangri-La Hotel, Palace Road, Bangalore



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| Invited Talk 2 | Radar Band EW Architectures and Technology to Face Future Threats By Mr José Miguel Pascual Ruiz and Mr David Lazaro Loscos, INDRA, Spain | | 09:00 to 09:30 Hrs |
| Session 4 | EW ANTENNAS AND ACTIVE PHASED ARRAY SYSTEMS - I | | |
| Chairman: Prof. K J Vinay, ECE Department, IISc, Bangalore Co Chairman: M Balachary, Scientist G, DLRL Duration: 09:30 to 10:50 Hrs | 041R061 | T/R Module Based EW System Using Active Electronically Scanned Array By N. Satish Kumar Reddy, R. Anand, D.D. Sarma, M. Balchary & J. Shanker Rao, Defence Electronics Research Laboratory, DRDO, Hyderabad | 09:30 to 09:50 Hrs |
| | 045R024 | Challenges in Production & Installation of EW Antennas on Military Platforms By NC Nagesh, Manager (Navy) & Chandana Viswanadham SDGM , BEL, Hyderabad | 09:50 to 10:10 Hrs |
| | 026R043 | Compact Dual Polarised DF Antenna Sub system for ELINT Applications By C Sairam, Sukh Das Ahirwar, A Narayana Rao, T Khumanthem, Sheilu Singh, M Balachary & M Chakravarthy, DLRL, DRDO, Hyderabad | 10:10 to 10:30 Hrs |
| | 048R084 | Wideband DRFM based on digital channelized receiver and transmitter By Appala Naidu G, Madhu Karani and Priyanka V, Bharat Electronics Ltd, Hyderabad | 10:30 to 10:50 Hrs |
| 10:50 to 11:10 : Tea Break | | | |
| Session 7 | EW/EO THREAT STIMULATORS AND EW TESTING/ EVALUATION | | |
| Chairman: Stuart Chapman, Selex ES, UK Co Chairman: Dr BRK Rao, Scientist G, DLRL Duration: 11:10 to 12:30 Hrs | 068R013 | Test and Evaluation of 4th and 5th Generation Platforms By Dr Robert S Andrews, MBE, Ultra Electronics - EW Simulation Technology Ltd, UK | 11:10 to 11:30 Hrs |
| | 032R016 | Evolving ELINT Technology to Support EW Test and Evaluation By Hafedh Trigui & P. Michael Gale, Ultra Electronics TCS , Canada | 11:30 to 11:50 Hrs |
| | 047R025 | Development & Experimental Results of Vehicle Based Simultaneous Radar Signal Simulator for evaluation of ESM Systems at field By B Kishore Babu, I Bhaskara Rao, & Ch Viswanadham, Bharat Electronics Ltd, Hyderabad | 11:50 to 12:10 Hrs |
| | 072R079 | The Next EO/IR Threat By Keith Dalley MSc, Textron Systems, Electronic Systems, UK | 12:10 to 12:30 Hrs |
| 12:30 to 13:30 Hrs : Lunch Break | | | |
| 13:30 to 14:00 Hrs : Time to Visit Technical Exhibition | | | |
| Invited Talk 3 | EW Operational Support and System evaluation – A Naval Perspective By Cdr Pradeep Sundaram, Naval Head Quarters, New Delhi | | 14:00 to 14:30 Hrs |
| Invited Talk 4 | Britecloud - The World's first expendable DRFM Jammer for Fast-jet Aircraft By Mr Geoff Tithecott, Selex ES, UK | | 14:30 to 15:00 Hrs |
| Session 10 | ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS – II | | |
| Chairman: Dr Sudhir Kamath, Director, MTRDC, DRDO Co Chairman: Y Gopal Krishna, Scientist G, DLRL Duration: 15:00 to 16:20 Hrs | 062R088 | Development of RF Coupler of a Broadband Helix Traveling – Wave Tube By Simy Antony, U V Chandramouli, Talur Chanakya, P Raja Ramana Rao, S. K. Datta, Microwave Tube Research & Development Centre, Bangalore | 15:00 to 15:20 Hrs |
| | 061R011 | Design & Development 1-3GHz 200W Solid State Power Amplifier By Sudip Kumar Murmu, Pankaj Gupta, Ambethkar K, Prakash S.P & Kalyani Murthy, Bharat Electronics Ltd, Bangalore | 15:20 to 15:40 Hrs |
| | 037R059 | Development of High Power PIN Diode Switches for Tactical Communication Jammer Applications By R. Yadagiri, BV Anand Krishna and V S Radha Krishna, Defence Electronics Research Laboratory, DRDO, Hyderabad | 15:40 to 16:00 Hrs |
| | 055R018 | 225-1000MHz Broad Band Power Amplifier By Chandrashekar K, Nagaveni H, Prakash S P, Kalyani Murthy, Bharat Electronics Ltd, Bangalore | 16:00 to 16:20 Hrs |
| 16:20 to 16:40 : Tea Break | | | |
| Session 13 | EW SIGNAL PROCESSORS AND DIGITAL RECEIVERS – II | | |
| Chairman: Dr A T Kalghatgi, Director, R&D, BEL Co Chairman: Mahesh V, Chief Scientist, CRL, BEL Duration: 16:40 to 18:00 Hrs | 010R008 | Low Latency Data Conversion for Electronic Warfare Applications By A. Glascott Jones, N Chantier, F. Bore & M. Wingender, e2v Technologies Ltd, UK | 16:40 to 17:00 Hrs |
| | 064R053 | Differential encoding technique for Data compression in Distributed Radar Sensors By V.Dhananjayulu, S. Sudha Rani & Dr.S.Vasadarajan, Defence Electronics Research Laboratory, Hyderabad | 17:00 to 17:20 Hrs |
| | 016R029 | A Comparative Study of effects of Windowing Function in Digital Receiver based Radar Warning Receiver By Santanu Kumar Sinha & Naveen Kumar S, Bharat Electronics Ltd, Bangalore | 17:20 to 17:40 Hrs |
| | 074R093 | Scalable Multichannel Architectures Simplify Next Generation COMINT Systems Development By G, Raghavaiah, D-TA VeSaras Solutions Pvt Ltd, Bangalore and Dr. Dipak Roy, D-TA Systems Inc, Canada | 17:40 to 18:00 Hrs |
| End of Day 2 | | | |



| Session 5 | | | |
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| COMMUNICATION EW AND RCIED – I | | | |
| Chairman: Dr K Maheshwara Reddy, OS & Director, DARE, DRDO Co Chairman: Raghurama Aithal, AGM (TP), BEL Duration: 09:30 to 10:50 Hrs | 013R003 | A High Performance Processing Architecture for Near Real Time Communication Intelligence Applications By Nalini Matturthi & Ramesha, Deputy Managers , Bharat Electronics Ltd, Bangalore | 09:30 to 09:50 Hrs |
| | 005R022 | Extraction of information from multiple frequency band signals for COMINT applications By Ms. Swetha P.M & Mr. Chiranjeevi D, Mrs. Rajasree K.P & Mr. Ramesh K.S, CRL, Bharat Electronics Ltd, Bangalore | 09:50 to 10:10 Hrs |
| | 054R065 | Localization Techniques for Mobile Wireless Communications: An EW Perspective By RK Rudheesh, CS Krishna Kumar & VS Radha Krishna, Defence Electronics Research Laboratory, DRDO, Hyderabad | 10:10 to 10:30 Hrs |
| | 007R026 | New Technologies To Improve Antijam Performance Of Commersatcoms To Bring Them On Par With Milsatcoms By Prof. G. Kumaraswamy Rao Prof, BIET, Hyderabad & J. Shanker Rao, Defence Electronics Research Laboratory, DRDO, Hyderabad | 10:30 to 10:50 Hrs |
| 10:50 to 11:10 : Tea Break | | | |
| Session 8 | | | |
| EW SYSTEMS INSTALLATION AND TESTING / EVALUATION – I | | | |
| Chairman: Phillip Jacob, Former Executive Director, BEL Co Chairman: CHV Prasad, Scientist G, DLRL Duration: 11:10 to 12:30 Hrs | 034R055 | Simulation and Experimental based Structural Investigation of Narrowband EW Receiver Unit against the Vibration and Shock loads By K Chandrakar, Uday Kumar, Kundan Kumar & C Satyanarayana, Defence Electronics Research Laboratory, Hyderabad | 11:10 to 11:30 Hrs |
| | 015R027 | Challenges in custom packaging an existing RWR system into an airborne LRU By Damodaran V, Gokulan S, Anil Kumar, & Yogesh Raj Urs, Bharat Electronics Ltd, Bangalore | 11:30 to 11:50 Hrs |
| | 029R056 | Thermal Management of Antenna Head Unit By Uma Ravindra Maddipati, Dr. P.Rajendran & Dr Lachiram, Defence Electronics Research Laboratory, Hyderabad | 11:50 to 12:10 Hrs |
| | 036R058 | Structural Analysis of 3-Bay Antenna Sub- system for Ship-borne Applications By U Uday Kumar, Gopal G & C Satyanarayana & P L Venkateshwar Rao, Defence Electronics Research Laboratory, Hyderabad | 12:10 to 12:30 Hrs |
| 12:30 to 13:30 : Lunch Break | | | |
| 13:30 to 14:30 Hrs : Time to Visit Technical Exhibition | | | |
| Session 11 | | | |
| EW RECEIVERS AND RF SUB SYSTEMS – II | | | |
| Chairman: T N Yadgiri Rao, Former Associate Director,DLRL,DRDO & Vice President, AOC India Chapter Co Chairman: Ms V Revati, Scientist G, DLRL Duration: 15:00 to 16:20 Hrs | 002R006 | Compact 0.5-40 GHz Two Way Symmetric Microstrip Power Division Circuit By Rohit Lahiri, Mahadev Sarkar & Manjunath R, Bharat Electronics Ltd, Bangalore | 15:00 to 15:20 Hrs |
| | 021R036 | Wide Band RF BITE Architecture for EW Receiver Applications By B. Shankar Rao, J. Usha Rani & Dr. Y. Hemalatha, Defence Electronics Research Laboratory, DRDO, Hyderabad | 15:20 to 15:40 Hrs |
| | 011R038 | Frequency Multiplier Using Capacitive Nonlinearity of the Step Recovery Diode By Raghvendra Rai, Naveen Lochab, R Siva Kumar & R Manjunath, BEL, Bangalore | 15:40 to 16:00 Hrs |
| | 009R009 | A C-Band Tunable Cavity Filter By Rahul Sadhu, Bharat Electronics Ltd, Bangalore | 16:00 to 16:20 Hrs |
| 16:20 to 16:40 : Tea Break | | | |
| Session 14 | | | |
| EW ANTENNAS, ACTIVE PHASED ARRAY SYSTEMS AND DIRCM – II | | | |
| Chairman: J Shanker Rao, OS & Scientist H, DLRL,DRDO Co Chairman: Dr Ashwani Kumar, Scientist G, DLRL Duration: 16:40 to 18:00 Hrs | 042R046 | Sectoral Horn Base Line Interferometric array for high accuracy and high sensitivity Direction Finding By Madhavi Chandra, Pranab Kumar Thander, H.Sudhir, M.Balachary & Dr. M. Chakravarthy, Defence Electronics Research Laboratory, DRDO, Hyderabad | 16:40 to 17:00 Hrs |
| | 040R051 | Sectoral Horn Antenna For Millimeter Wave Amplitude Comparison Direction Finding System By M Balachary, K Bhramaramba, H Sudhir, B Ramakrishna & A Kiranmaie, Defence Electronics Research Laboratory, DRDO, Hyderabad | 17:00 to 17:20 Hrs |
| | 059R052 | Ultra Broadband Equiangular Spiral Helix antenna for Amplitude comparison Direction Finding System By Brahmadev Shaw, K. Bhramaramba, Dr. M Chakravarthy & M.Balachary, Defence Electronics Research Laboratory, DRDO, Hyderabad | 17:20 to 17:40 Hrs |
| | 070R091 | Directional Infrared Countermeasures (DIRCM), AN/AAQ-24(V) By Christopher Kramer and Phil Loudon, Northrop Grumman, USA | 17:40 to 18:00 Hrs |
| End of Day 2 | | | |



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| Session 6 | | EW SIGNAL PROCESSORS AND DIGITAL RECEIVERS – I | |
| Chairman: S S Nagaraj, OS & Director, LRDE, DRDO Co Chairman: DVSR Murthy, Scientist G, DLRL Duration: 09:30 to 10:50 Hrs | 030R062 | Big Data' for Electronic Warfare Intelligence By G. Siva Prasad, Defence Electronics Research Laboratory, Hyderabad | 09:30 to 09:50 Hrs |
| | 071R019 | FPGA Based Direct Sampling Radar Receiver with High Dynamic Range By Vikas Kumar, Fouziya C, T.Venkatmuni,Dilip Kumar & Kalyani Murthy, BEL, Bangalore | 09:50 to 10:10 Hrs |
| | 065R044 | Estimation of Simultaneous Radar Signal Parameters using Using Digital EW Receiver By R. Pavan Kumar, Gautam Kumar, Om Prakash RC, Dr. A.K Singh & O.K. Singh, Defence Electronics Research Laboratory, Hyderabad | 10:10 to 10:30 Hrs |
| | 058R081 | Advanced Radar Identification System By Anamika Patel, T Srikanth, N Sarada and OK Singh, Defence Electronics Research Laboratory, DRDO, Hyderabad | 10:30 to 10:50 Hrs |
| 10:50 to 11:10 : Tea Break | | | |
| Session 9 | | EW SYSTEMS SOFTWARE ENGINEERING / MODELLING AND CERTIFICATION – I | |
| Chairman: C V S Sastry, OS & Director, ANURAG,DRDO Co Chairman: Anupam Sharma, Scientist G, DLRL Duration: 11:10 to 12:30 Hrs | 031R063 | Radio Emitter Threat Degree Judgment Based On Machine Learning Algorithms By Sasanka, Kr Biswas & G. Siva Prasad, Defence Electronics Research Laboratory, Hyderabad | 11:10 to 11:30 Hrs |
| | 031 | Model based design and EW component library based approach for fast development cycles in FPGA dominant architectures By K.Srinivasa Raju CEO, Unistring Tech Solutions Pvt. Ltd, Hyderabad | 11:30 to 11:50 Hrs |
| | 067R068 | Information Exchange Through Replication - An EW Perspective By CP Amulya , Ravi Tudu, S.K.Gupta, & CS Krishna Kumar, Defence Electronics Research Laboratory, DRDO, Hyderabad | 11:50 to 12:10 Hrs |
| | 075R092 | Comprehensive study and simulation for Flexible Adaptation Scheme Based Smart Spectrum Sensing in Cognitive Radio Networks By Somyajit Choudhury and K Krishna Naik,Communication Laboratory, Department of Electronics Engineering, Defence Institute of Advanced Technology, Pune | 12:10 to 12:30 Hrs |
| 12:30 to 13:30 : Lunch Break | | | |
| 13:30 to 14:30 Hrs : Time to Visit Technical Exhibition | | | |
| Session 12 | | EW SYSTEMS AND DF TECHNIQUES – II | |
| Chairman: J M Pascual Ruiz, Indra, Spain Co Chairman: MK Das, Scientist G, DLRL Duration: 15:00 to 16:20 Hrs | 057R049 | Implementation of IQ based frequency and direction finding algorithm in FPGAs By V V S R Raju, Sounak Samanta, Deepti Agrawal, Dr. A K Sing, M.K.Das, Defence Electronics Research Laboratory, DRDO, Hyderabad | 15:00 to 15:20 Hrs |
| | 004R017 | Geolocation Of An EM Emitter Using ES Sensors Mounted On Naval Frigates By Prof. G. Kumaraswamy Rao, Director R&D, BIET, Hyderabad | 15:20 to 15:40 Hrs |
| | 053R050 | Factors Affecting Baseline Interferometric Direction Finding Accuracy By Deepti Agrawal, J.Vijayalakshmi, P.Papaji, Y.Uttara Kumari, Dr. A.K Singh & O.K.Singh, Defence Electronics Research Laboratory, DRDO, Hyderabad | 15:40 to 16:00 Hrs |
| | 073R090 | Implementation of Fast Analog AGC in TDMA Application By Vasudha Chattannavar, Ajay Tomar , Arpana M K & G Rambabu, Bharat Electronics Limited, Jalahalli Post, Bangalore | 16:00 to 16:20 Hrs |
| 16:20 to 16:40 : Tea Break | | | |
| Session 15 | | COMMUNICATION EW AND RCIED – II | |
| Chairman: David Lazaro, Indra, Spain Co Chairman: O K Singh, Scientist G, DLRL Duration: 16:40 to 18:00 Hrs | 032 | Synchronization issues and Adhoc network based wireless radio architectures for multi node Military Communications By M. Siva Kumar Application Engineer, & K.Srinivasa Raju CEO, Unistring Tech Solutions Pvt. Ltd, Hyderabad | 16:40 to 17:00 Hrs |
| | 003R030 | Universal Data Communication System for Aerostat based surveillance systems By N. Kumara Swamy, Gunvanta V. Mate and Arun Kumar H H , BEL, Bangalore | 17:00 to 17:20 Hrs |
| | 039R067 | Factors Effecting Message Fidelity in Real Time Follow on Monitoring for Frequency Hopped Spread Spectrum By Mr. Kumar Gautam, M. Madhu Sudhan Reddy & Mr. Lalit Kumar, Defence Electronics Research Laboratory, DRDO, Hyderabad | 17:20 to 17:40 Hrs |
| | 014R072 | Modified Turbo Equalization for HF Modem By Nanda Kishore Chavali, Jameer Ali M.S & Karunya Choppara, UURMI Systems Pvt. Ltd., Hyderabad | 17:40 to 18:00 Hrs |
| End of Day 2 | | | |



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| Invited Talk 5 | LPI Radars Detection and Classification By Dr Andrea De Martino, Elettronica, Rome, Italy | | 09:00 to 09:30 Hrs |
| Invited Talk 6 | Defence Market Outlook: Technology Trends for Next Generation EW, Radar and Communications By Mr Asif Anwar Strategy Analytics Ltd, UK | | 0930 to 10:00 Hrs |
| Session 16 | EW SYSTEMS INSTALLATION AND TESTING / EVALUATION – II | | |
| Chairman: Dr Robert S Andrews, MBE, EW Simulation Technology Ltd, UK Co Chairman: Narayana Rao, Scientist G, DLRL Duration: 10:00 to 11:20 Hrs | 018R004 | Thermal modeling and analysis of High Power Amplifier By Prashant and Karthikeyan A, Bharat Electronics Ltd, Bangalore | 10:00 to 10:20 Hrs |
| | 033R057 | Investigation of Wind Load Effects on Monitoring Antenna Structure using CAE Tools By P.L.Venkateshwar Rao, Dr G Gopal, Dr.Lachiram, Defence Electronics Research Laboratory, Hyderabad | 10:20 to 10:40 Hrs |
| | 035R054 | FEA and Experimental Validation of Electronic Enclosures along with PCB for Space Applications By Gopal G, Ch Navya & C Satyanarayana, Defence Electronics Research Laboratory, Hyderabad | 10:40 to 11:00 Hrs |
| | 066R040 | Testing of Unified EW System in Far Field Anechoic Chamber By M. Sreenivasa Rao, Venkatesh Joshi. B and Dr. K. Maheswara Reddy, Defence Avionics Research Establishment, Bangalore | 11:00 to 11:20 Hrs |
| 11:20 to 11:40 Hrs : Tea Break | | | |
| Session 19 | COMMUNICATION EW AND RCIED – III | | |
| Chairman: Harold Screven, Northrop Grumman, USA Co Chairman: VS Radha Krishna, Scientist G, DLRL Duration: 11:40 to 12:40 Hrs | 051R077 | Providing Protection to Security Convoys and Sport Arenas from RCIEDs by using Smart Jammers Mounted on UAVs By Prof. G. Kumaraswamy Rao, Former Director, DLRL & Director R&D, BIET, Hyderabad | 11:40 to 12:00 Hrs |
| | 049R085 | V/UHF EXCITER For Multi Band, COMINT EW Jammer System By Ravi Shanker & K Sridhar, Bharat Electronics Ltd, Hyderabad | 12:00 to 12:20 Hrs |
| | 050R086 | RF Front-end for Multi Band, Multi Channel, and Multi Purpose COMINT EW System By D S Binu, V Thimmappa, A V Mamatha, Bharat Electronics Ltd, Hyderabad | 12:20 to 12:40 Hrs |
| 12:45 Hrs to 13:30 Hrs | Panel Discussion : Valedictory Function: Distribution of Certificates Discussion on Feedback Advanced Future Courses & EWCI Conclusion | | |
| 13:30 to 14:30 Hrs : Lunch Break | | | |
| 14:30 to 16:30 Hrs : Final opportunity to Visit Stalls and Interact with Exhibitors. End of the EWCI 2016 | | | |



Day 3: TECHNICAL SESSIONS 17 and 20

Thursday, 25 February 2016

Venue : Seminal Hall A

| Session 17 | | ELECTRONIC ATTACK AND HIGH POWER TRANSMITTERS – III | |
|--|---------|--|--------------------|
| Chairman: Dr Lalit Kumar, Former Director, MTRDC,DRDO Co Chairman: DD Sarma, Scientist G, DLRL Duration: 10:00 to 11:20 Hrs | 043R042 | Direct to Digital (D2D) DRFM By Mr Richard Damon, RFSS, USA | 10:00 to 10:20 Hrs |
| | 025R080 | Future RF Technology Trends for Electronic Attack Systems By Asif Anwar, Strategy Analytics, Ltd, UK | 10:20 to 10:40 Hrs |
| | 008R028 | Techniques Employed in Passive Phased Array Tracking Radar to Counter Dense ECM Environment By Raghavendra N A, Abhishek Kulkarni & Neelaraddi H K, BEL, Bangalore | 10:40 to 11:00 Hrs |
| | 038R066 | Design Considerations For Frequency Follow On Attack - Relevance of timing fraction and estimation probability By Mr Kumar Gautam, Mr Z Sudhakar, Mr M Madhu Sudhan Reddy & Mr Lalit Kumar, Defence Electronics Research Laboratory, DRDO, Hyderabad | 11:00 to 11:20 Hrs |
| 11:20 to 11:40 Hrs : Tea Break | | | |
| Session 20 | | ELECTRONIC ATTACK & HIGH POWER TRANSMITTERS AND EW SIGNAL PROCESSORS – IV | |
| Chairman: Steve Walley dB Control, USA Co Chairman: Y Gopalakrishna, Scientist G, DLRL Duration: 11:40 to 12:40 Hrs | 077R095 | A Novel Methodology For Identification Of Digital Voice Bit Stream For EW Systems By Parthraj Tripathi and DVSR Murthy Defence Electronics Research Laboratory, DRDO, Hyderabad | 11:40 to 12:00 Hrs |
| | 060 | Passive Auto Track Receiver (ATR) for ECM Applications By P. Radhakrishna, N. Satish Kumar Reddy, R. Anand, D.D. Sarma & J. Shanker Rao, Defence Electronics Research Laboratory, DRDO, Hyderabad | 12:00 to 12:20 Hrs |
| | 001R014 | Intelligence Jamming in Electronic Warfare: Future Requirement and Operational Exploitation By Shish Varadhan, Anubhav Gag, Hindustan Aeronautics Limited, Korwa, India | 12:20 to 12:40 Hrs |
| 13:30 to 14:30 Hrs : Lunch Break | | | |



Day 3: TECHNICAL SESSIONS 18 and 21

Thursday, 25 February 2016

Venue : Seminal Hall B

| Session 18 | | EW SYSTEMS SOFTWARE ENGINEERING / MODELLING & CERTIFICATION –II | |
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| Chairman: Christopher Kramer, Northrop Grumman, USA Co Chairman: S Jayathirtha, Scientist G, DLRL Duration: 10:00 to 11:20 Hrs | 024R010 | Modern Airborne EW System Design Trends and Airworthiness Certification Approach By Anantha Padmanabha, S Karthikeyan , P Jayapal & Dr NNSSRK Prasad, Centre for Military Airworthiness & Certification, DRDO, Bangalore | 10:00 to 10:20 Hrs |
| | 028R015 | Mitigating Electromagnetic Interference in Operator Console By Adesh Panwar, Bharat Electronics Ltd,Bangalore, India | 10:20 to 10:40 Hrs |
| | 046R023 | EMI / EMC Considerations in Ultra Wideband (UWB) Electronic Systems By C Phani Madhuri S & C Viswanadham Bharat Electronics Ltd, Hyderabad | 10:40 to 11:00 Hrs |
| | 069R041 | Testing of EW System Modules in HALT/ HASS Test Chamber By M.Sreenivasa Rao, V.M Vishwanath & Dr. K. Maheshwara Reddy, Defence Avionics Research Establishment, Bangalore | 11:00 to 11:20 Hrs |
| 11:20 to 11:40 Hrs : Tea Break | | | |
| Session 21 | | EW ANTENNAS AND ACTIVE PHASED ARRAY SYSTEMS – III | |
| Chairman: Robby Miles, Ultra Telemus TCS, Canada Co Chairman: Dr M Chakravarthi, Scientist G, DLRL Duration: 11:40 to 12:40 Hrs | 027R045 | Design and Development of Broadband Field Expedient Novel Discone Antenna By Takeshore Kh, C. Sairam, S.D. Ahirwar, M. Shantha, Sheilu Singh, A. Narayana Rao, M. Balachary and M. Chakravarthy, Defence Electronics Research Laboratory, DRDO, Hyderabad | 11:40 to 12:00 Hrs |
| | 052R048 | Millimeter Wave Omni Directional Biconical Antenna By B. Rama Krishna, K. Bhramaramba, A Kiranmaie, H. Sudhir, M. Balachary & Dr M Chakravarthy, Defence Electronics Research Laboratory, DRDO, Hyderabad | 12:00 to 12:20 Hrs |
| | 056R047 | Compact Printed Circuit Yagi-Uda Antenna for High Altitude Platform By Ezharul Ansari, H. Sudhir, M. Balachary & M Chakravarthy, Defence Electronics Research Laboratory, DRDO, Hyderabad | 12:20 to 12:40 Hrs |
| 13:30 to 14:30 Hrs : Lunch Break | | | |

CONTACT DETAILS

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