

FINAL ANNOUNCEMENT



Fourth International Conference on Electronic Warfare

EWCI 2016

22 to 25 February 2016

EW : Partner for Self-Reliance



Venue :

National Science Seminar Complex
Indian Institute of Science
Bangalore

ewci@aoc-india.org

www.aoc-india.org

The Fourth EW International Conference India (EWCI 2016)

The Fourth International Conference on Electronic Warfare (EWCI 2016) is the latest event in the benchmark EWCI Conference Series in the advanced field of EW. The Conference is being organised by the award winning India Chapter of Association of Old Crows (AOC), Bangalore. The Conference is supported by Defence Research and Development Organisation (DRDO), India. Bharat Electronics Limited (BEL), Bangalore is the patronising sponsor of the event. The Conference addresses the Technical and Commercial Needs of Operational Users, Planners, Developers, Procurers, Testers and Trainers of the latest EW Technologies and Systems. A large scale Indoor Exhibition will accompany the Conference, displaying the latest EW products from International EW Organisations. There will be an intense one-day Pre-Conference Tutorials preceding the Conference. The Conference is envisaged as the important platform for EW Professionals who would share the Research and Development output in the field of EW at the global level. Also keeping in view of the Government of India's "Make in India" policy, the Participants of the Conference will be exposed to the state-of-the-art self reliance activities in the field of EW in India and hence, the theme of the Conference is chosen as "EW: Partner for Self-Reliance". [Final Announcement regarding the Details of the Conference is issued through this Brochure.](#)

Technical Papers Presentation

The Conference receives a huge response in terms of technical papers internationally, covering all aspects of exploiting Electro Magnetic Spectrum for Electronic Warfare and Information Operations. Technical Papers are solicited in these areas including the following topics:

- Advances in EW Systems, Architectures, Techniques and Technologies
- EW Systems Modelling and Simulation, EW & EO Threat Simulators, Testing & Evaluation
- Advances in ECM/ECCM Techniques, Expendable Repeater and IR Jammers
- Electro-Optic based EW Systems – Missile Approach Warning Systems & Laser Warning Systems
- Network Centric & Information Warfare
- EW Antennas, Active Electronically Scanned Arrays (AESA) & Shared Apertures
- Radar Finger Printing, LPI Emitters Techniques for Interception and Countermeasures
- Communication DF Receivers, Digital Receivers, EW Signal Processors, Satellite Based EW Challenges, SIGINT, RWR, ESM, Multi Sensor Warner, Directed Energy Weapons (DEW)
- Microwave & Millimetre Wave Technology for EW
- Light Weight EW Systems for UAV, Aerostat & Other Platforms
- Emitter Location Algorithms, Program Management of Complex EW Systems
- EW Interference to TV/Radio/Mobile Transmissions and EW Maintenance
- EW Ops & Spectrum Management in Joint Services Operation Scenario and Challenges
- Operation Flight Programs and Airborne EW Software and their Verification and Validation
- IED Detection, Anti Terrorism Operations and Low Intensity Warfare

EWCI 2016 Schedule

Date	Event
22 February 2016	Pre-Conference Tutorials
23 February 2016	Inaugural Session, Inauguration of Exhibition, Plenary Session, Invited Lectures, Technical Sessions, Cultural Programme (in the evening) and Conference Dinner
24 February 2016	Technical Sessions and Exhibition
25 February 2016	Technical Sessions, Exhibition and Panel Discussions

Pre-Conference Tutorials

A one day Pre-Conference Tutorials by Eminent International Experts on Following Advanced EW Topics are arranged on **22 February 2016**. The Tutorials will be of immense value to the R&D and young EW Professionals to get in-depth exposure to the State-of-the-Art Technology.

Tutorial 1: NEXT GENERATION OF MULTI-FUNCTIONAL EW SYSTEMS

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/ship based 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.



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 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.

Tutorial 2: MODERN RADAR EW ARCHITECTURES AND TECHNOLOGY TO FACE NEW THREAT CHALLENGES

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.



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.

Tutorial 3: ADVANCEMENTS AND DESIGN CONCEPTS FOR MODERN EW TEST AND TRAINING RANGES

The tutorial covers the topics: Facilitate the testing, evaluation, and expert support to radio frequency, electro-optic, and infrared warning receivers and countermeasure devices for Air & Naval Test Ranges, 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.



The speaker, **Mr Herold 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.

Tutorial 4 : ADVANCES IN EO TECHNOLOGY, SYSTEMS AND COUNTERMEASURES

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.



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.

Plenary Talks on 23 February 2016

- Current Trends in US EW Technology, By 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
- Challenges in EW Technologies - Development to Production Scenario in India, By A T Kalghatagi, Director R & D, Bharat Electronics Ltd., Bangalore, India
- Advances in Airborne Integrated EW Systems – An Overview, By Dr K Maheshwara Reddy, OS and Director, DARE, DRDO, Bangalore, India

Invited Talks on 23, 24 & 25 February 2016

- LPI Radars Detection and Classification
By Andrea De Martino, Elettronica, Rome, Italy
- Radar Band EW Architectures and Technology to Face Future Threats
By J.M.Pascual Ruiz and D.Lázaro, Indra, Spain
- Miysis - The Smallest Lightest Multi-Head DIRCM System for Protection against Advanced MANPADS
By Stuart Chapman, Selex ES, UK
- BriteCloud - The World's First Expendable DRFM Jammer for Fast-Jet Aircraft
By Geoff Tithecott, Selex ES, UK
- Defense Market Outlook: Technology Trends for Next Generation EW, Radar and Communications
By Asif Anwar, Strategy Analytics, UK

Delegates Registration

Registration Fee	Indian	Foreign
Tutorial	Rs. 5,000	\$ 250
Conference	Rs. 12,000	\$ 450

Concessions Offered:

- **10%** on the Registration Fee for Early Bird Registration (Registration before **30 November 2015**).
- **40%** on the Registration Fee for AOC India Chapter Members (Membership taken before **30 November 2015**) and Serving Indian Armed Services Personnel.
- **50%** on the Registration Fee for College Students and Faculty.
- Authors presenting Technical Paper also need to pay Registration Fees.

Souvenir and Proceedings

A Souvenir (A4 size, Multicolour) containing messages from Dignitaries, Abstracts of Technical Papers, Invited Articles, Exhibitors Index and Advertisements from EW Organisations will be published. Soft copy of the Conference Proceedings will be made available for all the Delegates. There is an excellent advertisement opportunity in the Souvenir as indicated.

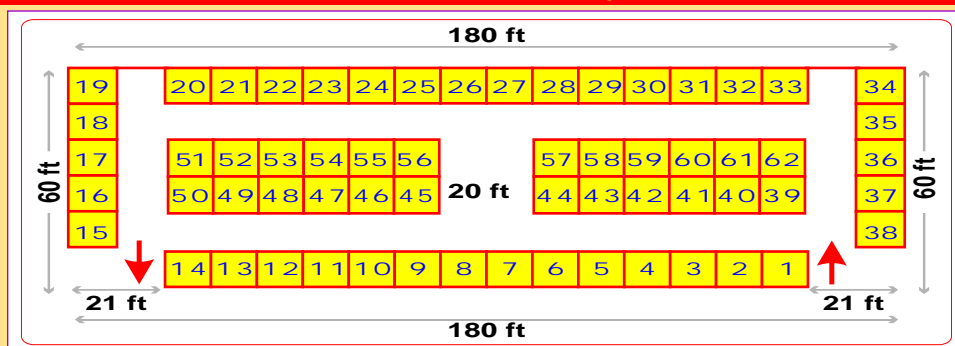
Tariff for Advertisements	Indian	Foreign
Back Cover	Rs 50,000	\$ 1500
Inside Front and Back Cover	Rs 40,000	\$ 1250
A4 Special Page	Rs 20,000	\$ 700

Technical Exposition and Sponsorship

The Indoor Exhibition organised at the venue of the Conference during **23-25 February 2016** may be utilised for showcasing EW Systems and Sub-systems, Components, Models, Software and Multimedia Presentations. More than **60 booths (3m x 3m Shell Type)** are available for booking. About 50 EW Organisations from more than 15 Countries are expected to participate in the Exhibition. The Exhibition will be visited by not only the Delegates of the Conference but also by Professionals, Experts and Decision Makers and Users from the Indian EW field. This gives an excellent business opportunity and allows interacting with various vendors, EW Professionals, R&D Organisations and Armed Services from global participation.

Exhibition Sponsorship	Indian (INR)	Foreign (USD)	Free Benefits as part of Sponsorship
Diamond	7,50,000	20,000	3 Booths, 8 Delegates
Gold	5,50,000	15,000	2 Booths, 6 Delegates
Silver	4,50,000	12,500	2 Booths, 4 Delegates
Bronze	2,25,000	7,000	1 Booth, 2 Delegates
Booth	1,25,000	4,000	1 Booth
Delegation Kit	4,00,000	12,500	4 Delegates
Dinner	3,00,000	10,000	3 Delegates
Lunch on Day 1 or 2 or 3 or 4	2,00,000	7,000	2 Delegates
Cultural Programme	1,25,000	4,000	1 Delegate
Hi Tea	1,00,000	4,000	1 Delegate
CD Facia	1,00,000	4,000	1 Delegate

Technical Exhibition Layout



Mode of Payment

All payments are to be made by Demand Draft or Banker's Cheque drawn in favour of "AOC India Chapter" in Indian Currency. Bank Transfers are also accepted. Particulars for Bank Transfers are:

State Bank of India, ADE Branch, PB No 7524, New Tippasandra PO, Bangalore – 560075.

Account Number : 34736987145, MICR Code : 560002070, IFSC Code : SBIN0006538.

Note: AOC India Chapter is a not-for-profit society registered with Registrar of Societies, Karnataka and not liable for taxes. Therefore all the payments are to be made without "Tax Deducted at Source (TDS)".

All payments should be sent to the Conference Coordinator.



About Association of Old Crows (AOC), India Chapter, Bangalore: Considering the importance of Electronic Warfare in modern war scenario and with the vision of providing an Institute for the Indian Electronic Warfare Professionals, AOC, headquartered at Virginia, USA, has inaugurated its India Chapter during the International Conference on Electronic Warfare (EWCI 2010), held in Bangalore during 9 to 12 Feb 2010. The Chapter is registered with Registrar of Societies, Bangalore, Karnataka. The India Chapter has enrolled over 200 Professionals within one year of its operations. The incumbent (founder) president of AOC India Chapter, Dr U K Revankar, won the prestigious "The International Achievement Award" by the AOC, USA and the India Chapter is recently awarded as the "Best Growing Chapter" award. The India Chapter has organised the very successful EWCI Series of International Conferences and EWWI Series of National Workshops in alternating years.

Patrons

Dr S Christopher

Director General DRDO and Secretary, Department of Defence R&D, MoD, Government of India

Air Marshal P P Reddy VM ADC

Chief of Integrated Defence Staff to Chairman Chiefs of Staff Committee, New Delhi

Dr G A Satheesh Reddy

Scientific Advisor to Defence Minister, MoD, Government of India

Mr S K Sharma

Chairman and Managing Director, Bharat Electronics Limited, Bangalore

Advisory Committee

Dr K D Nayak

DS & DG (MED &CoS), DRDO
New Delhi

Ms Manjula J

OS & DG (ECS), DRDO
New Delhi

Dr C G Balaji

DS & Director, DLRL, DRDO
Hyderabad

Dr K Maheshwara Reddy

OS & Director, DARE, DRDO
Bangalore

Mr C V S Sastry

OS & Director, ANURAG, DRDO
Hyderabad

Mr S S Nagaraj

OS & Director, LRDE, DRDO
Bangalore

Dr Sudhir Kamat

Scientist G & Director, MTRDC, DRDO
Bangalore

Dr R S Pundir

Scientist G & Director, DEAL, DRDO
Dehradun

Col (Retd) H S Shankar

CMD, ADTL, Bangalore

Key Conference Organising Members of AOC India Chapter

Conference Chair

Dr U K Revankar

Former Director, DARE (DRDO), Bangalore
President, AOC India Chapter Bangalore

Conference Co-Chairs

Dr A T Kalghatgi

Director (R&D), Bharat Electronics Limited

Mr TN Yadgiri Rao

Former Associate Director, DLRL, DRDO, Hyderabad,
Vice President, AOC India Chapter Bangalore

Technical Committee Chair

Mr J Shanker Rao

Scientist H, DLRL, DRDO, Hyderabad

Technical Committee

Mr D V S R Murthy

Scientist G, DLRL, DRDO, Hyderabad

Dr P S Pandian

Scientist E, O/o DG (ECS), DRDO, Bangalore

Mr Philip Jacob

ED (Central – D&E), BEL, Bangalore

Mr M V Gowtama

ED (MILCOM), BEL, Bangalore

Wg Cdr (Retd) V B Athmaram

COO, OIS Aerospace Pvt. Ltd., New Delhi

Finance Coordinator

Mr N Chandrasekaran

Scientist F, O/o DG (ECS), DRDO, Bangalore
Treasurer, AOC India Chapter Bangalore

General Coordinator

Mr K P Umesha

Scientist F, DARE, DRDO, Bangalore
Director, AOC India Chapter Bangalore

Conference Coordinator

Mr H V Harish

CEO, Spur India Limited, Bangalore
Secretary, AOC India Chapter Bangalore

For More Details Please Visit Our Web Site or Contact

Conference Coordinator

#414, Church Street, New Tippasandra, HAL III Stage, Bangalore – 560075, India

Tele Fax: +91 80 2528 7813, Email: ewci@aoc-india.org Web: www.aoc-india.org