



# Third International Conference on Electronic Warfare

## EWCI 2014

National Science Seminar Complex  
Indian Institute of Science, Bangalore  
17 to 20 February 2014

**FINAL ANNOUNCEMENT  
& CALL FOR REGISTRATION**

**EW: Share to Succeed**



Email: [ewci@aac-india.org](mailto:ewci@aac-india.org)

Web: [www.aac-india.org](http://www.aac-india.org)

## The Third International EW Conference India (EWCI 2014)

The Third International Conference on Electronic Warfare (**EWCI 2014**) is the latest Event in the benchmark EWCI Conference Series in India in the advanced field of Electronic Warfare and Information Operations. Buoyed and motivated by the Second Conference **EWCI 2012** held during February 2012 in Bangalore, the Third Conference is being organised by The Award Winning **India Chapter of Association of Old Crows (AOC), Bangalore**. Conference is supported by **Defence Research and Development Organisation (DRDO)**, Government of 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** with more than 75 Booths is organised, displaying the latest EW Products from the International EW Organisations. There will be an intense one-day **Pre-Conference Tutorials** preceding the Conference. The Conference is envisaged as an important platform of EW Professionals who would mutually share the Research and Development output in the field of EW at global level, hence the theme of the Conference is chosen as **"EW: Share to Succeed"**.

**Final Announcement regarding the Details of the Conference is issued through this Brochure.**

### Call for Technical Papers

The Conference received huge response with more than 65 Technical Papers already accepted for presentation. However, a few more Papers on Original Contributions based on Theoretical/Experimental Work in the following Broad Areas would be accommodated if Full Papers are submitted in the prescribed format before **31 December 2013** to [ewci@aoc-india.org](mailto:ewci@aoc-india.org). Please refer the Website [www.aoc-india.org](http://www.aoc-india.org) for Instructions.

- Advances in EW Systems/Architectures/Techniques/Technologies
- EW Systems Modelling and Simulation, EW & EO Threat Simulators, Testing & Evaluation
- Advances in ECM/ECCM Techniques
- Expendable Repeater and IR Jammers, DEWs, and New Generation Jammers
- Electro-Optic based EW Systems, MAWS & LWS,IRST
- 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, Emitter Location Algorithms
- EW Signal Processors, Digital Receivers
- Satellite Based EW-Challenges
- SIGINT, COMINT, RWR, ESM, Multi Sensor Warner
- Microwave & MM wave Technology for EW, MPMs, HPMs
- Light Weight EW Systems for UAV, Aerostat & Other Platforms
- Program Management of Complex EW Systems, and Their Production / Field Trials
- EW Interference to TV/Radio/Mobile Transmissions and their Maintenance
- EW Ops & Spectrum Management in Joint Services Operation Scenario and Challenges
- EW Algorithms, Software Implementation Issues, Quality Assurance and Certification
- EW Technology Spin-off for Homeland Security
- Platform Modification issues, Stealth and Conformal Antennas

### EWCI 2014 Schedule

Date	Event
17 February 2014	Pre-Conference Tutorials
18 February 2014	Inaugural Session, Inauguration of Exhibition, Plenary Session, Invited Lectures, Technical Sessions, Cultural Programme (in the Evening) and Conference Dinner
19 February 2014	Technical Sessions and Exhibition
20 February 2014	Technical Sessions, Exhibition and Panel Discussion



## Pre-Conference Tutorials

A one day Pre-Conference Tutorials by Eminent International Experts on Advanced EW Topics are arranged on **17 Feb 2014**. 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. The Following Tutorials are planned:

### **Tutorial 1 - EW SYSTEMS OPERATIONAL SUPPORT [Duration: Two Hrs]:**

The operation of the EW Systems requires a number of gathered, processed and stored intelligence data (by Humint, ELINT, etc.), to be supplied in order to provide them with the threat identification and classification and the effective Electronic Countering. These processes are performed in an EW System Support Facility (EWSF) that provides Pre-mission Threat Library Preparation (either RF or IR), Library Validation and Threat Countering Effectiveness for all the EW System of a combat aircraft or ship. The prepared Library is downloaded into the EW System and the latter are then tested in a Laboratory of the EWSF provided with Test Systems capable to generate a number of emitter signals which simulate the environmental scenario of the combat aircraft or ship envisaged mission. This phase is called Emitter Library Validation.

Jamming Programs can be applied by an EW System against an identified threat downloaded into the EW System and their effectiveness is tested in a Laboratory of the EWSF provided with Threat Simulators. The tested jamming programs are ranked according to their effectiveness and the most effective ones are downloaded into the EW System of the combat mission completing the Mission Library Validation Phase of an EW System of a combat aircraft or ship. In the Tutorial, the above phases will be described in detail and reference will be made to the EWSF of the Italian MoD supplied by Elettronica.

### **Tutorial 2 - NEW GENERATION (NG) JAMMER FOR CYBER WARFARE [Duration: One and Half Hrs]:**

In modern EW Scenarios the success of an intruder Aircraft (fighter/UCAV) wing attack is provided with the presence of at least a couple of Escort Jammers, capable to impair not only the operation of the Radars but also the Communication Network of the Integrated Air Defence System (IADS). A modular and scalable New Generation (NG) Jammer Architecture developed that copes with all the required jamming and Cyber Attack capabilities associated to the roles of the Intruder Wing Aircraft components (for SPJ/ESJ/SOJ/CSJ) Jammers is described.

IADS Networks and especially the battlefield ones are operating through RF Communication Links (Wireless, Data Links). Cyber Warfare against IADS, usually connected to a Command, Control, and Communication Centre (C4) through a wireless network, can be conducted by two methods, either by introducing some malware into opponent computer network or by preventing it to receive the correct information data. The second method can be pursued through a NG RF Jammer capable to produce a variety of deceptive messages that generate confusion among the various nodes of the opponent wireless IADS Network.

The Tutorial will deal first with the NG Jammer Architecture by illustrating examples of its modularity and scalability in the provision of the different required capabilities (SPJ, ESJ, CSJ, and SOJ) and then with the applicable jamming principles to wireless Defence Network of Elettronica NG Jammer provided with Cyber Warfare capabilities.



The Speaker of Tutorial 1 and 2, **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.



The Co-Speaker of Tutorial 2, **Dr Graziano Lubello-Lincinti**, graduated in Electronic Engineering from University of Bari (ITALY). He began his career as Digital Signal Processing designer at the TELETRA Military Communications Laboratory on Adaptive Channel Equalizers for HF communications. He was responsible for the development of a Fast Adaptive Echo Canceller for EUROCOM Military Phone, New Generation Digital TV Transmitters at ITELCO and Analogue and Digital Radio and TV Transmitters at Unicom SpA. In 2005 he joined ELETTRONICA, responsible for COMINT/ELINT Systems and currently involved in the development of a new generation ELINT/COMINT systems for different platforms including UAV. Dr. Lubello is the author of several technical papers on signal processing topics and Electronic Warfare System Architectures.

### **Tutorial 3 - EW EVOLUTION ON FUTURE NAVAL SYSTEMS [Duration: Two Hrs]:**

Introducing the Context and the Requirements to be supported by EW Naval Systems, the evolution of present naval operations, scenario and ship threat evolution together with platform integration constraints is reviewed. Basics of the core technology that provides an answer to the previous requirements, with emphasis on the Radar Band EW are presented, as Digital Reception capabilities and processing. Future Naval Systems Integration concepts and Integrated Design Approaches are described. A development strategy is defined; taking into account the synergistic opportunities for integrated/common design on the different functions but maintaining full specification or improved performances with an example on EW & Radar architecture convergence. Main development elements - Digital Transmitter & Receiver Modules or Digital Combiner/Distributor modules together with Power Amplifier technology are introduced.

Development examples for these and other synergistic cases like Communications EW are also presented. For ESM, Evolution on EW Naval Systems, state of the art DRX based architectures to provide full bandwidth, dynamic range, complete parameter measurements by Digital Reception is presented. Also integration of ESM and ECM based on modern DRFM techniques explained. On the countermeasures analysis side, High ERP based on mechanical pointing or electronically pointing devices is explained. Other important issues to consider on the analysis of new EW systems as logistics, maintainability or training are also described.



The Speaker, **Mr José Miguel Pascual Ruiz** is a Telecommunication Engineer from the Universidad Politécnica de Madrid (Spain). He has lead technological innovations at INDRA in SIGINT, 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 and on numerous international projects; also participated in several study groups including NIAG reports on geolocation and ESM systems. Mr. Pascual has authored many Technical Papers and delivered invited speeches on Specialised University Courses, Study Groups or Military Academies. Presently he is Technology and Product Development Deputy Director at INDRA, Spain.



#### **Tutorial 4 - ADVANCED CONCEPTS IN RADAR AND ELECTRONIC WARFARE [Duration: One and Half Hrs]:**

This presentation will focus on the critical details of Radar and Electronic Warfare (EW) Systems function and operation. Recent advancements that have been made in the fields of Radar and EW, and their impact on performance, will be discussed. The types and functions of Radar Systems encountered on the electronic battlefield are examined. The Electronic Counter Measure (ECM) methods commonly used against these Radars, as well as the Radars' methods of countering ECM (ECCM), are explored. EW Receivers' processing of received pulses, and methods used to determine important threat parameters such as frequency, power, and angle of arrival, are also discussed. This tutorial is aimed at participants with a basic knowledge of Radar and EW principles.



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. He 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. In the past Mr. Screven has held positions as a Principal Radar Systems Engineer, Product Development Manager, Staff Systems and Software Engineer. In addition, Mr. Screven is currently serving as the Vice President of the Niagara Frontier Chapter of the AOC.

#### **Plenary Talks on 18th February 2014 :**

##### **EW Technologies - Current & Future Trends**

**Mr S P Dash**, Distinguished Scientist and Director, Defence Electronics Research Laboratory (DRDO), Hyderabad, India

##### **Requirement of Coordinated EW/IO Strategies and Need to Adopt Advanced EW Systems in The Indian Armed Services**

**Air Marshal M Matheswaran**, AVSM VM Ph D, DCIDS (PP & FD), HQ IDS, Ministry of Defence, India

##### **Defense Market Opportunities for RF Technologies Spanning EW and Radar Systems**

**Mr Asif Anwar**, Strategy Analytics, Ltd., UK

##### **A Production and Operational Roadmap of EW/IO Systems in India**

**Dr A T Kalghatgi**, Director (R&D), Bharat Electronics Limited (BEL), Bangalore, India

#### **Invited Talks on 18,19 & 20th February 2014 :**

##### **The Evolution of Off-Board RF Countermeasures**

**Mr Geoff Tithecott**, Selex, UK

##### **Future Naval Systems : Integrated Sensor Mast**

**Jose Miguel Pascual Ruiz**, Indra, Spain

##### **Future RF Technology Trends for Electronic Warfare Systems**

**Mr Asif Anwar**, Strategy Analytics, Ltd., UK

##### **New Generation (NG) Jammer Architecture for Shared Apertures and also for Cyber Warfare Applications**

**Dr Andrea De Martino** and **Dr Graziano Lubello-Lincenti**, Elettronica SpA, Italy

#### **Registration of Delegates**

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

- A 10% Early Bird Concession is offered on both Tutorial and Conference Fees for Registrations before **31 Dec 2013**.
- AOC India Chapter Members (Membership before **31st Dec 2013**) and Serving Indian Armed Services Personnel get 40% Concession on Registration Fees for both Tutorial and Conference.
- Authors presenting Technical Papers also need to pay Registration Fees.
- Special Promotional Concessions of 50% on Tutorials and Conference are offered for Professional College Students and Faculty Delegates.

#### **Technical Exposition**

The Indoor Exhibition organised at the Venue of the Conference during **18 to 20 February 2014** may be utilised for showcasing EW Systems and Sub-systems, Components, Models, Software and Multimedia Presentations. 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 Day 2 or Day 3 or Day 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

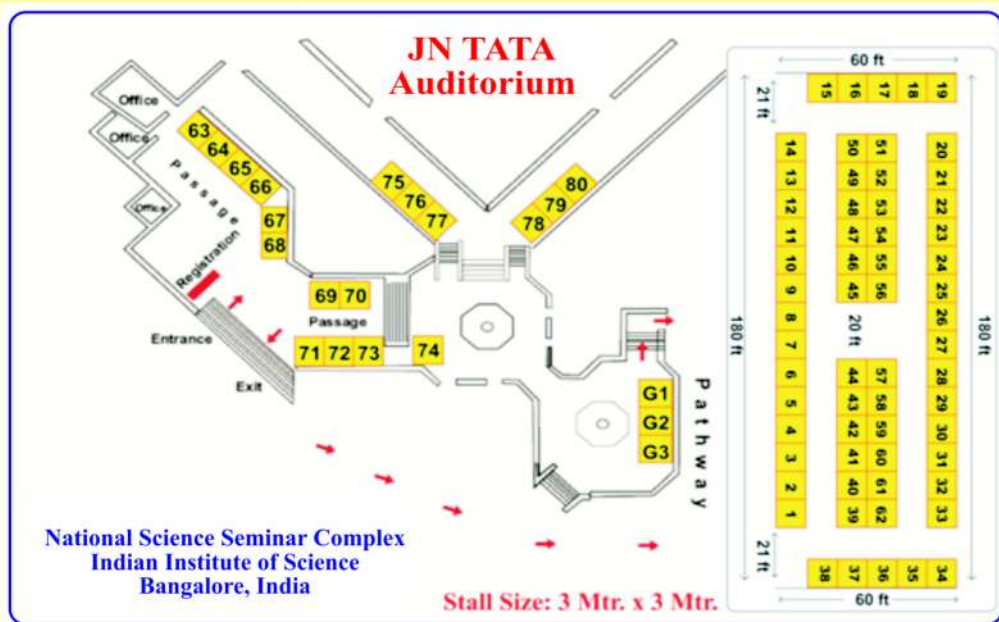


## Souvenir and Proceedings

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. Both Hard Copy and Soft Copy of the Conference Proceedings will be made available for all the Delegates. There is an excellent advertisement opportunity in the Souvenir as well as in the Hard Copy of the Conference Proceedings.

Tariff for Advertisements	Indian	Foreign
Back Cover	Rs 50,000	\$ 1,500
Inside Front or Inside Back Cover	Rs 40,000	\$ 1,250
A4 Colour Page	Rs 20,000	\$ 700

## 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 EWCI 2014" 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: 32965868042, MICR Code: 560002070, IFSC Code: SBIN0006538. **Note: AOC India Chapter is a Not-for-Profit Association registered with Registrar of Societies, Government of Karnataka, Bangalore 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:** AOC, head quartered at Virginia USA, is a Prestigious Association of Electronic Warfare and Information Operations Professionals.

The AOC and its Chapters world over are bringing together the Experts and the Organisations in the field of Electronic Warfare through its Programs including International Conferences, Seminars and Expositions. 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 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, AOC 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 awarded the "Best Growing Chapter" Award for the Year 2012 and the "Chapter of the Year Award" for the Year 2013. The India Chapter has recently organised the very successful EWCI 2012 International Conference in February 2012 and EWWI 2013 National Workshop in January 2013.



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### KEY CONFERENCE ORGANISING MEMBERS OF AOC INDIA CHAPTER

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President, AOC India Chapter Bangalore

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Secretary, AOC India Chapter Bangalore

**FOR MORE DETAILS PLEASE VISIT OUR WEB SITE OR CONTACT**

**Conference Coordinator, EWCI 2014**

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

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