IEEE South Australia Section
Control & Aerospace and Electronic Systems Chapter

Workshop on
Radar System Prototyping and Electronic Warfare

The IEEE South Australia Section and CAES Chapter invites you to attend three one day workshops
by **IEEE Distinguished Lecturer Dr Lorenzo Lo Monte - Telephonics Corporation.**

About the workshop:
This three day tutorial workshop comprises a day on radar Systems Prototyping, and two days of Electronic Warfare. This includes an introduction day covering the electronic attack (EA), electronic support (ES) and electronic protection (EP) and a second day focusing further on electronics support, ELINT and radar reverse engineering. Participants can register for any combination of days as desired. Please see second page for a full description. Note that the course is taught at an unclassified level.

About the presenter:
Dr. Lo Monte has long and comprehensive experience in applied Radar, RF, DSP, EW system design and prototyping, from small companies, consulting, academia, research institutions, to large defense contractors and government agencies worldwide. He serves as Chief Scientist at Telephonics, a Top-100 defense corporation specializing in ISR solutions, with the role of translating research innovations into commercial products. Prior to that, he was an Associate Professor at the University of Dayton, where he created the courses "Intro to Radar," "Radar/RF Systems Design," and "Intro to Electronic Warfare." He was also the Director of the Mumma Radar Laboratory. Dr. Lo Monte has published over 60 peer-reviewed journal and conference papers and two book chapters.

Dates: 14th November — Radar Systems Prototyping
15th November — Introduction to Electronic Warfare
16th November — Electronic Support, ELINT and
Radar Reverse Engineering

Time: 9:00 am - 5:00 pm

Venue: University of Adelaide
Ingkarni Wardli Building, B17

Early bird registration closes 5pm 1 October 2017 *

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Name

Phone/Email

Attendance

☐ Day 1: Radar Systems Prototyping
☐ Day 2: Introduction to EW
☐ Day 3: ES, ELINT and Reverse Engineering

Special requirements

Method of payment   ☐ Visa   ☐ MasterCard

| | | | | - | | | | | - | | | | | - | | | | /
Credit Card #   Exp. date

Dated

Signature   / / 2017

Three day workshop on Radar System Prototyping and EW

Cost per day (including GST)	Early Bird	Regular
☐ Non-IEEE Member	$200	$250
☐ IEEE Member* or Adelaide Uni. staff	$180	$230
☐ Student	$100	$150
☐ IEEE Student Member*	$80	$130

Total cost for chosen days: _____

IEEE Member # _____

☐ Cheque   ☐ Direct Deposit

Total:** _____

Commonwealth Bank
Salisbury
BSB 065-122
ACC # 1020 9805

Confirmation of your registration will be e-mailed to you within 10 working days.
Please note that this workshop may be cancelled if an insufficient number of registrations is received by 10 November 2017. No refund is available after 10 November 2017.
* IEEE membership discount applies to current IEEE members.
** Note a 1.69% credit card fee will be added to this total.

IEEE AES Distinguished Lecture Series

The IEEE South Australia Section, IEEE Aerospace and Electronic Systems society, and Telephonics Corporation are pleased to offer three full-day tutorials. The tutorials are introductory in nature and only a basic knowledge of radar is necessary.

Tutorial 1: Radar Systems Prototyping
Tuesday, November 14th 2017

Whether you are a student seeking real data to prove your Ph.D. thesis, or a researcher planning for experimentation in your grant proposal, or a system engineer in need of a radar prototype to demonstrate your innovative idea to a customer, you will be faced with prototyping a radar system with limited time and budget. This tutorial will provide you with practical skills and techniques needed to build your advanced radar prototype. The focus is not on how devices/algorithms work, but on how to *relate* the choice of microwave devices and signal processing algorithms to the desired radar specifications. The course will end with a step-by-step MIMO radar design example, starting from the requirements and ending with a schematic.

Tutorial 2: Introduction to Electronic Warfare
Wednesday, November 15th 2017

Learn the technologies and algorithms behind the electronic warfare systems protecting assets, territories and human lives. Electronic warfare (EW) can be essentially divided in three categories: electronic attack (EA), electronic support (ES) and electronic protection (EP). EW is a large field spanning different domains, such as radar, communications, EO/IR, and cyber. This tutorial will focus only to EA and EP techniques applicable to radar systems, with a quick overview of IADS, surface-to-air missiles and fire control systems. Topics in EA include jamming techniques, jamming equations, anti-radiation missiles, DRFM, and SAR/ISAR jamming. Topics in EP are divided according to the radar subsystem engaged in the protection, such as transmitter, antennas, receiver, and signal processing, including techniques countering pull-offs and deceptions. The course is taught at an unclassified level.

Tutorial 3: Electronic Support, ELINT and Radar Reverse Engineering
Thursday, November 16th 2017

This tutorial continues the EW discussion by exploring its intelligence aspect, with a focus on radar systems. The course begins with the CONOPS, theories and techniques used in electronic support missions, with an emphasis on radar warning receivers. This includes an overview of signal detection and estimation, signal identification and direction finding. Next, the course explores concepts and techniques used in electronic intelligence, in particular signal processing and the time/frequency analysis. The final part of the tutorial will focus on determining RF/hardware properties using remotely collected data, such as signals and images. Using both signal and hardware clues, the intelligence analyst will be able to identify the capabilities and performance of a radar. The course is taught at an unclassified level.