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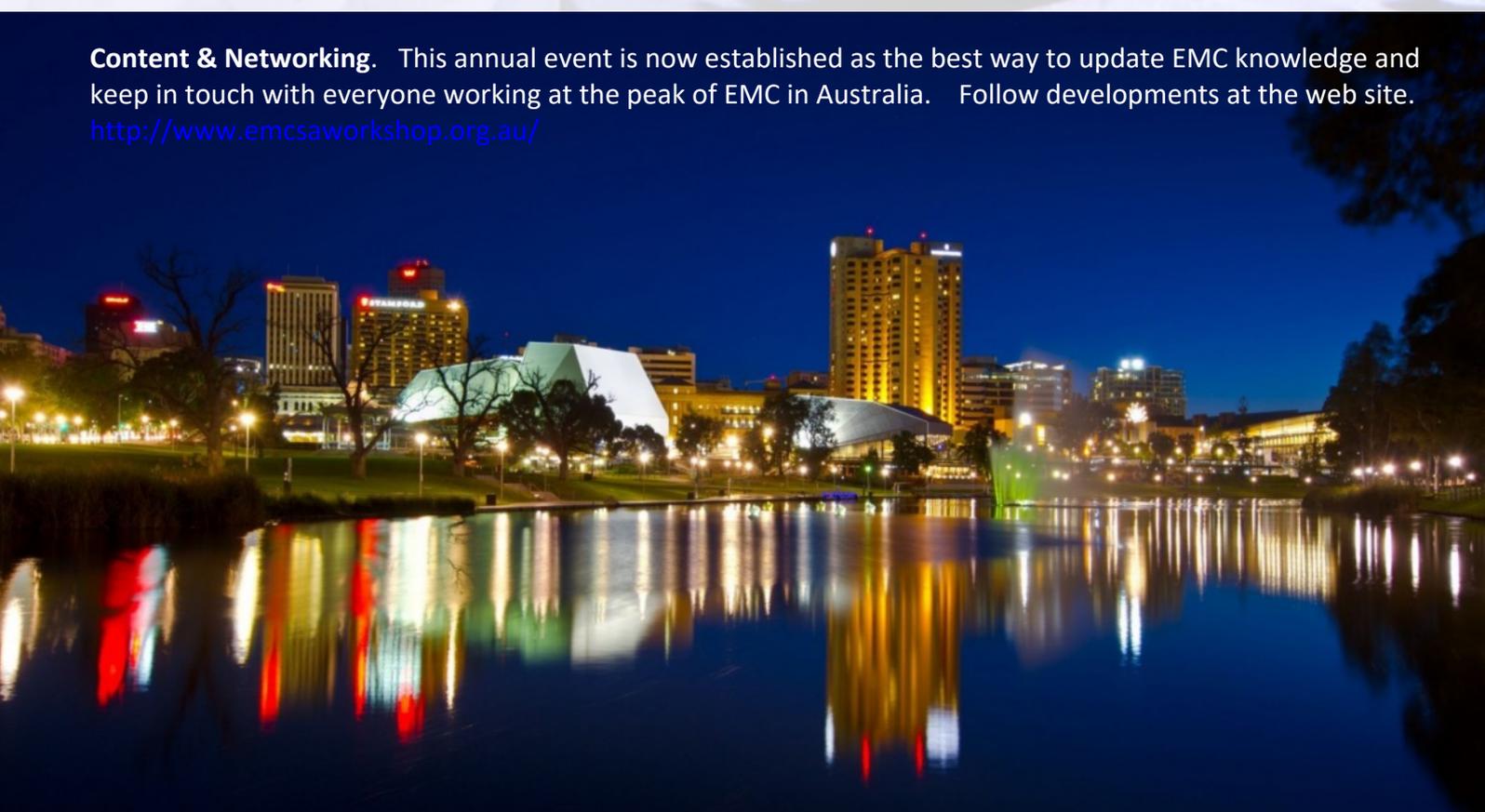
Workshop 2018

Annual Workshop, Adelaide, 22nd to 24th May 2018

The EMC Society of Australia (EMCSA) annual workshop will be convened in Adelaide, 22nd to the 24th of May 2018. Our annual workshop features short and long presentations from National and International experts in industry and academia, as well as Industry Exhibitions. The EMCSA Workshop will be held over 3 days:

- Tuesday 22nd Commencement of the EMCSA Workshop, with Trade Show, Speakers and welcome Cocktail Networking event.
- Wednesday 23rd Second day of the EMCSA Workshop, with speakers and Trade Show.
- Thursday 24th Especially crafted tutorials, created around specific topics and presented in smaller groups.

Content & Networking. This annual event is now established as the best way to update EMC knowledge and keep in touch with everyone working at the peak of EMC in Australia. Follow developments at the web site.
<http://www.emcsaworkshop.org.au/>



Location: [Lakes Resort Hotel](http://www.lakesresort.com.au/), 141 Brebner Dr, West Lakes SA 5021.

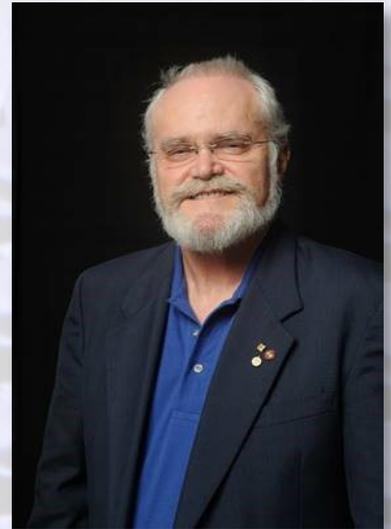
EMCSA Workshop 2018 - Keynote Presentations

EMC Requirements Tailored for Space Applications

Dr Bob Scully, Johnson Space Center E3 Group Lead Engineer

Abstract: This presentation will provide a brief overview of EMC requirements as applicable for space hardware, mostly at the system level. Discussion of LRU level requirements, the RF environment, the plasma environment and spacecraft charging, and a bit about lightning, and then open discussion to respond to any questions or comments.

Biography: Bob holds a PhD from the University of Texas at Arlington in Electrical Engineering with strong emphasis in electromagnetics, is an IEEE Fellow, a registered Professional Engineer in the state of Texas, a licensed commercial (PG-12-27194) and amateur (N9RCS) radio operator, holds various EMC certifications from the University of Missouri-Rolla (now Missouri University of Science and Technology) and iNARTE, and is a member of Tau Beta Pi and Eta Kappa Nu. Bob has served as the President of the IEEE EMC Society, the VP of Technical Services, Chair of the Technical Activities Committee, Technical Committee 1, and Technical Committee 4. Bob served as an Associate Editor for the EMC Society Transactions for several years, and is the founder and Chair of the Galveston Bay/Houston EMC Chapter. Bob is the Johnson Space Center E3 Group Lead Engineer, and is the lead for the Community of Practice for EMC within the Agency. Bob supports NASA's major programs including the International Space Station, the Multi-Purpose Crew Vehicle, and the Commercial Crew Development Program, providing expertise and guidance in development of tailored electromagnetic compatibility specifications, including control plans, interference control testing methodologies, ESD control, and lightning protection and test.



Advances in the Design of Anechoic Chambers for Modern Military Vehicles

Mr Zhong Chen, Director RF Engineering, ETS-Lindgren

Abstract: This presentation provides the latest information on chamber design considerations for today's increasingly sophisticated military vehicles. It aims to provide information so a user can understand the limitations of absorbers, chamber design tradeoffs, and test methods to validate the performance goals. The presentation is divided into three parts for anechoic chamber designs for military vehicles. The first part addresses chamber designs for EMC applications typically specified in MIL-STD-461. A brief introduction is provided on the requirements of the standard regarding the chamber design. The second part concentrates on anechoic chamber designs for antenna or radar measurements. Basic design and performance guidelines are presented, and test requirements are discussed in terms of the Free-Space VSWR method, which are typically used for these chambers. The third part of the presentation deals with absorber power handling for high power applications, which are often encountered in military vehicle measurements inside an anechoic chamber. Many of the design concepts and test methods presented also apply to test chambers for electric and autonomous vehicles.

Biography: Zhong Chen is the Director of RF Engineering at ETS-Lindgren, located in Cedar Park, Texas. He has over 20 years of experience in RF testing, anechoic chamber design, as well as EMC antenna and field probe design and measurements. He is an active member of the ANSI ASC C63® committee and Chairman of Subcommittee 1 which is responsible for the antenna calibration and chamber/test site validation standards. He is chairman of the IEEE Standard 1309 committee responsible for developing calibration standards for field probes, and chairman of the IEEE Standard 1128 committee for absorber measurements. His research interests include measurement uncertainty, time domain measurements for site validation and antenna calibration, development of novel RF absorber materials, and anechoic chamber designs. Zhong Chen received his M.S.E.E. degree in electromagnetics from the Ohio State University at Columbus. He may be reached at zhong.chen@ets-lindgren.com.

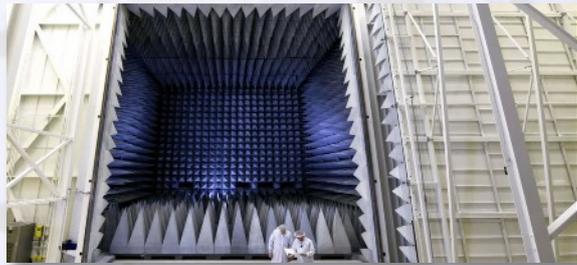


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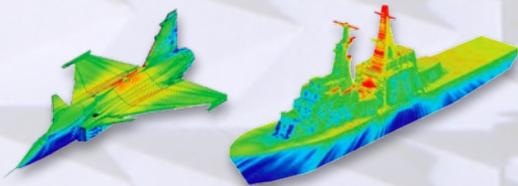
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Trade Exhibitors



Test & Measurement Australia. Founded July 1st, 1998, Test & Measurement Australia Pty Ltd, located in the Blue Mountains west of Sydney, NSW, has been supplying specialist test equipment solutions to the Broadcast, EMI/EMC & EW sectors, offering a range of test equipment & accessories sourced from the USA & Europe, well suited to the Australasian Market.

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The new R&S ESW EMI test receiver has unrivalled dynamic range: the fast and reliable way to certification.

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EMCSA Workshop 2018 - Technical Program Preliminary

Tuesday 22nd May 2018

8:00am – 9:00am - Registration

9:00am

Welcome by the EMCSA Chairman
Mark Mifsud FIEAust CPEng

9:15am

Keynote Speaker – Dr Bob Scully
EMC Requirements Tailored for Space Applications

10:15am Morning Tea

Session 1 Chairperson – Steve Offer
EMC Measurements

10:45am

RADHAZ Measurements
Emad Mansour

11:30am

EMC Management & Lab Accreditations
Poojita Rao

12:15pm - Lunch – Exhibitors Room

1:15pm

A Practical Approach for Calibration of
Harmonics and Flicker Test Systems
Stephen Phillips & Chris Zombolas

Session 2 Chairperson – Kingsley McRae
E³ Management

2:00pm

Electromagnetic Environmental Effects Management of a
Military Platform Hobart Class Air Warfare Destroyer
Greg Gallagher

2:45pm - Afternoon Tea

Session 3 Chairperson – Mark Mifsud
Equipment Calibration

3:15pm

Challenges and Methods to Improve Accuracies in Antenna
Calibrations and Site Qualification Measurements below 1 GHz
Zhong Chen

*4:00pm - Exhibitors Welcome
and Networking Reception*

Wednesday 23rd May 2018

8:00am – 9:00am - Registration

9:30am

Keynote Speaker – Mr Zhong Chen
Advances in the Design of Anechoic Chambers for Modern
Military Vehicles

10:15am Morning Tea

Session 4 Chairperson – Mark Mifsud
System Design

11:15am

Cable Design and Construction
Bob Scully

12:15pm - Lunch – Exhibitors Room

Session 5 Chairperson – Paul Payne
Reverberation Chambers

1:15pm

Potential Impact of DUT Directivity Characteristics on
Electromagnetic Effects Testing
Mike Hatfield

2:00pm

Title and Presenter TBC

2:45pm - Afternoon Tea

Session 6 Chairperson – Pina Dall'Armi-Stoks
CEM

3:00pm

Achieving E³ compliance: Simulation Vs. Measurement
Mahan Rudd

3:45pm - Close Workshop

EMCSA Workshop 2018 - Tutorials

Thursday 24 th May 2018			
9:30 AM to 12:30 PM	Tutorial 1 – Reverberation Chambers – Theory and Practice	Tutorial 2 – Fundamentals of Shielding	Tutorial 3 – Getting the best from electric field probes for EMC Testing
Presenter(s)	Mr Craig Denton & Mr Mike Hatfield	Dr Bob Scully	Mr Zhong Chen
Tutorial Overview	This tutorial aims to discuss the theory and practical applications of Reverberation chambers.	This tutorial will look at aspects and details of fundamental shielding theory as based on Schelkunoff's approach, including discussion of magnetic shielding and engineering design considerations.	This tutorial will discuss the theory and applications of the electric field probes, and calibrations methods. The presentation will discuss the influencing factors of the measurement uncertainties from the calibration process as well as the during the end use, and practical considerations on how to reduce the effects.
12:30 PM – 1:30 PM – Lunch (own lunch)			
1:30 PM to 4:30 PM	Tutorial 4 – Estimating Radio-frequency Radiation Hazards from Inside an Information Vacuum	Tutorial 5 – Computer Simulation for Electromagnetics	
Presenter(s)	Dr Paul Kay and Dr Kevin Goldsmith	Dr Franz Schlagenhauer and Dr James Buchan	
Tutorial Overview	This tutorial will provide an overview of RADHAZ and an update to the changes to the AS/NZS 2772.2 that were submitted to the Standards Australia committee TE-007, which have since been accepted in the standard and now appears at Annex E of the 2016 version, which is widely used in Defence and industry.	Computer simulation has become a powerful tool in understanding and predicting the electromagnetic behavior of devices and systems. This tutorial aims at an audience, not just performing the actual work, but also responsible for initiating and managing major modeling projects. What are the benefits of computer simulation, how reliable are the results, how can results be validated, what part plays the interpretation of results? That are the main focal points of the presentation. The tutorial will cover: <ul style="list-style-type: none"> ● selection of a suitable simulation method; ● preparation of the simulation model; ● validation of simulation results; ● post-processing and presentation of simulation results. The presentation will include some real-life examples for illustration.	