The IEEE Central Texas, Los Angeles, Santa Clara, Switzerland, UK/Ireland, and Germany EMC Chapters, together with the Summa Foundation, are pleased to present the Live Webinar:

EMP/HEMP Detection, Protection, and Resilience Strategies

Date: **Thursday, December 10, 2020**

Time:	11:00 am EST	**Welcome and Announcements**, *Dr. Frank Sabath, Head of the Directorate on Detection, Bundeswehr Research Institute for Protective Technologies and CBRN-Protection (WIS), Munster, Germany*
	11:05 am	**Protection Solutions for Electromagnetic Pulse (EMP)** *By Mr. Bob Piemonte, Director of Government / General Purpose Shielding, ETS-Lindgren, Wood Dale, IL*
	11:30 am	**HPEM Detection as Part of a Toolkit for HPEM Resilience** *By Dr. Richard Hoad, MSc. C. Eng, FIET, SMIEEE, Chief Engineer & Capability Leader, QinetiQ Ltd., UK*
	12:10 pm	**Q&A with the Speakers**, *moderated by Dr. Sabath* ***(See presentation abstracts and speaker bios below.)***
	12:30 pm	**Wrap Up/Final Comments**

Register: Click here to register now on line or enter the following on your browser: https://attendee.gotowebinar.com/register/4996744197565722894

Questions: Janet O'Neil, ETS-Lindgren, cell (425) 443-8106, email j.n.oneil@ieee.org

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TECHNICAL PROGRAM

Protection Solutions for Electromagnetic Pulse (EMP)
By Mr. Bob Piemonte, Director of Government / General Purpose Shielding, ETS-Lindgren, Wood Dale, IL

Abstract: This presentation will provide a brief overview on the theory and history of electromagnetic pulse. While formerly a concern addressed primarily by Government entities, new commercial requirements are increasing to protect utilities, financial institutions, data centers, and other essential public services against EMP events. The vulnerability of these essential services that society is heavily dependent upon raises the concern for critical infrastructure to be resilient to an EMP event. Practical solutions currently available and implemented for EMP hardening of systems will be discussed for both commercial and government applications. Existing and evolving standards and recommendations for EMP protection of "the grid" and communications in terms of EMP hardening will also be reviewed. Attendees will learn about protection solutions to harden and protect critical systems from the adverse effects of EMP events.

HPEM Detection as Part of a Toolkit for HPEM Resilience
By Dr. Richard Hoad, MSc. C. Eng, FIET, SMIEEE, Chief Engineer & Capability Leader, QinetiQ Ltd., UK

Abstract: In several civilian sectors, organizations have been grappling with the challenge of mitigating HPEM threats such as High Altitude Electromagnetic Pulse (HEMP) and Intentional Electromagnetic Interference (IEMI). It is patently clear that methods that work perfectly well for time urgent military critical facilities, i.e. those designed to meet MIL-STD-188-125, are too onerous and too inflexible for today's let alone tomorrow's critical infrastructure needs. This presentation tries to articulate the difference between a traditional HPEM Protection way of thinking and an HPEM Resilience approach. Examples and benefits of HPEM detection will be provided.

SPEAKER BIOGRAPHIES

Bob Piemonte is the Director of Government / General Purpose Shielding for ETS-Lindgren and coordinates the company's efforts in providing EMP/IEMI hardened solutions for both the government and private sector, Many of his projects involve customized solutions for customer-specific requirements. On these, as well as on large and complex projects, he works closely with ETS-Lindgren's certified, internal BIM team. He has more than 35 years of experience in the engineering and installation of RF shielding systems, and may be reached at bob.piemonte@ets-lindgren.com. Bob is based at the company's facility in Wood Dale, Illinois.

Richard Hoad is a Chief Engineer and Capability Leader for Directed Energy Technologies at QinetiQ Ltd. Richard has undertaken many years of research looking at emerging disruptive threats to military and Critical Infrastructure assets, particularly for high impact low frequency events. He has helped operators of mission critical and essential services understand their risk to novel threats and has developed tools, techniques and products which support improved resilience of military systems and the Critical Infrastructure. Richard is the author of over 60 peer reviewed technical and journal papers on the topics above and is co-author of a book titled 'HPEM effects on electronic systems'. He is a Fellow of the Institute of Engineering and Technology (IET); registered with the Engineering Council UK (ECUK) as a Chartered Engineer (C.Eng.); a HPEM Fellow of the SUMMA foundation; a QinetiQ Fellow; and a Member of the Register of Security Engineers and Specialists.

MODERATOR

Frank Sabath (M'94–SM'04) received the Dipl.-Ing. Degree in electrical engineering from the University of Paderborn, Paderborn, Germany, in 1993, and the Dr.-Ing. degree from the Leibniz University of Hannover, Hannover, Germany, in 1998. In 2020, the Leibniz University of Hannover, Hannover, Germany awarded him the right to teach electrical engineering. Since 1998, he has been with the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw). From 2011 to 2017 he was head of the directorate on Nuclear Effects, High-Power Electromagnetics and Fire Protection of the Bundeswehr Research Institute for Protective Technologies and CBRN-Protection (WIS), Munster, Germany. In 2017 he took over responsibility as head of the Directorate on Detection. Dr. Sabath is Senior Lecturer in the field EMI Risk Management at the Leibniz University Hannover, Germany. He is the author or coauthor of more than 150 papers published in international journals and conference proceedings (orcid.org/0000-0001-6702-3715). His research interests include investigations of electromagnetic field theory, High-Power Electromagnetics, investigations of short pulse interaction on electronics, and impulse radiation. Dr. Sabath served as Ultra Wide Band (UWB) co-chairman of the EUROEM 2004, Magdeburg, Germany as well of the EUROEM 2008, Lausanne, Switzerland. Currently he is an Associate Editor of the IEEE Transactions on EMC, member of the Board of Directors of the IEEE EMC Society and past chair of the IEEE Germany Section EMC Society Chapter. Due to his outstanding service the EMC Society presented him the Laurence G. Cumming Award in 2009 and the Honored Member Award in 2012. He is the current Editor-in-Chief of the IEEE Letters on EMC Practice and Applications (LEMCPA), past president of the IEEE Electromagnetic Compatibility (EMC) Society, and a member of Antennas and Propagation (AP), Microwaves Theory and Techniques (MTT) Societies, and of URSI Commission E.