



**Annual Meeting at the  
2010 IEEE International Symposium on EMC at Fort Lauderdale, Florida  
Wednesday, July 28, 2010**

### **Unconfirmed Minutes**

1. Opening of the meeting. Chairman Dr. William (Bill) Radasky brought the meeting to order at 12:05 PM. Chairman Radasky welcomed the attendees, reviewed the agenda and asked for suggested changes; none were offered. The following items were discussed.
2. Minutes. The Secretary reviewed the minutes of the 2009 meeting in Austin, TX. There were no corrections or comments. Chairman Radasky offered a motion that the minutes be approved as read. MSC.
3. TC-5 Membership List. All members present introduced themselves. Secretary Dr. William (Bill) Price circulated a roster (the list of the 41 attendees is attached).
4. Technical Papers. Dr. Radasky reported that for this EMC symposium one regular session was held dealing with several aspects of High Power EM, including ESD, HPM and lightning. The session was chaired by Dr. Radasky and Mr. Michael (Mike) McInerney. Seven papers were submitted for the HPEM session of which 6 were accepted and 5 presented (there was one no-show).
5. Special Session. Dr. Radasky reported that the committee sponsored a special session on "EM Information Leakage" on Tuesday. The emphasis was on non-military applications and 8 papers were accepted as part of the special session. The Session was chaired by Drs. Tominaga and Radasky and had up to 40 attendees.
6. Tutorial Sessions. Fred Heather reported about 40 attendees in Monday's tutorial session, "ESD and Lightning Testing Additions to MIL-STD-461G." Prof. Rachidi and Prof. Rubinstein will conduct a tutorial session on Friday, "Electromagnetic Field Coupling with Transmission Lines, from Classical Theory to Recent Enhancements." Both of these subjects are within the topic areas of TC-5.
7. Report from the Lightning Subcommittee. Prof. Rachidi reported that he and Prof. Rakov edited a special issue of the *IEEE Trans. EMC* on lightning last August. The editors authored a review paper followed by 13 original contributions. Prof. Rachidi also discussed the instrumentation of the Sántis tower for lightning current measurements for those in attendance at this meeting.
8. Status of the IEMI Standard Practice Activities. Dr. Radasky reported that P1642 Recommended Practice for Protecting Public Accessible Computer Systems from IEMI is near completion. A meeting was held earlier this week for review of the document and



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some editorial changes will be made. The standard will be submitted to the Standards Board this September for voting.

9. Status of the TC-5 Web Page. Mr. McInerney reviewed the current design and content of the TC-5 web page and indicated that there have been some improvements in both in reliability and content since last year.
10. Review of HPEM Activities. Prof. Rachidi and Dr. Radasky reported the following activities since the last meeting and also upcoming events:

### *Lightning (Prof. Rachidi)*

- July 2009, Montreal. 4<sup>th</sup> International Workshop on EM Radiation from Lightning to Tall Structures chaired by Prof. Rubinstein and sponsored by the International Project on EM Radiation from Lightning to Tall Structures (IPLT). The IPLT sponsors 15 active research groups.
- April 2010, Beijing. The Asia-Pacific Symposium on Electromagnetic Compatibility included a topical meeting on lightning protection with over 50 papers.
- July 2010, Ottawa. The ANTEM/AMEREM conference included a special session on lightning.

### Future lightning meetings/activities:

- Sept. 2010, Cagliari. The International Conference on Lightning Protection will include a special session chaired by Prof. Rubinstein on Lightning to Tall Structures and Wind Turbines.
- European COST P18: The Physics of Lightning Flash and Its Effects. The COST P18 action represents the efforts of 5 working groups with members from 22 countries that have met for over five years. They have conducted 30 short-term scientific missions, 1 training school, and 4 symposia. Their work is ongoing.
- A new CIGRE working group C4.407 “Lightning Current Parameters for Engineering Application,” chaired by Prof. Rakov.
- A CIGRE-CIRED joint working group C4.402 “Lightning Protection of MV and LV Lines”
- A new CIGRE working group C4.408, “Lightning Protection of LV Networks,” chaired by A. Piantani.



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### *Other HPEM Activities (Dr. Radasky)*

- Sept. 2009, Niagara Falls. There was a special 2-day symposium on HEMP with commercial sponsorship and with 900 people in attendance.
- Sept. 2009, Switzerland. HPEM workshop organized by Dr. Baum.
- Nov. 2009, Washington D.C., High Impact Low Frequency (HILF) Event Workshop sponsored by NERC dealing with HEMP, IEMI, Geomagnetic Storms and other low probability events on the bulk power system; Press release published on 2 June 2010. [www.nerc.com/files/HILF.pdf](http://www.nerc.com/files/HILF.pdf).
- March 23-24, 2010, Dallas. NERC Technical Conference on Bulk Power System Impacts of Geomagnetic Storms, High-altitude Electromagnetic Pulse and Intentional Electromagnetic Interference.
- April 2010, Beijing. Asia Pacific EMC conference, with a special session on High Power EM.
- June 9, 2010, HR 5026 dealing with HEMP, IEMI, Geomagnetic Storms and Cyber attacks on the U.S. high voltage power grid passed with a unanimous vote.
- July 2010, Ottawa. AMEREM special session on IEMI (21 papers presented).

### Future HPEM meetings/activities:

- Sept. 13-17, 2010. EMC Europe Conference (Wroclaw, Poland).
- November 10-11, 2010. HPEM Workshop in Hamburg, Germany.
- May 16-19, 2011. APEMC at Jeju Island, Korea (Special session on IEMI).
- August 13-20, 2011. URSI GA in Istanbul, Turkey (Special Session on HPEM and IEMI).

11. Discussion of a Special Issue on HEMP. The last special issue of *IEEE Trans. EMC* on HEMP was published in 1978 and included U.S. authors only. Dr. Radasky recommended a new special issue on HEMP with a focus on infrastructure and expects worldwide representation. This was discussed last year at the TC-5 meeting and the members endorsed the plan. Just before this year's TC-5 meeting, Dr. Radasky provided this recommendation to the Transactions Editor, Prof. Heyno Garbe. The Editor accepted the concept of a special issue, but requested a formal proposal from the TC-5 Chairman, which will be submitted in the coming weeks.



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12. New subcommittees for TC-5. Dr. Tominaga, NTT Japan, is working on reports and standards for security in communications. He is focusing on the roles of IEMI, HPEM and information leakage (IL). Dr. Radasky proposed forming a subcommittee on IL to attract papers and to manage the paper reviews for future symposia. There were no objections, and Dr. Hiyashi volunteered to chair the subcommittee. Dr. Frank Sabath also volunteered to chair a subcommittee on IEMI, and this was also accepted without objection.
13. Discussion concerning whether a tutorial, workshop, or special session should be organized for next year. During discussions at this meeting, Dr. Radasky noted interest in a special session on EMC and space systems for the 2011 symposium. Reinaldo Perez is the point of contact and he will organize this for 2011.

Fred Heather suggested a follow-on tutorial for MIL-STD-461 and -462 for the 2011 symposium. Prof. Heyno Garbe suggested a special session on infrastructure protection for 2012 (thereby avoiding a conflict with URSI in 2011, which is in conflict with the 2011 IEEE EMC Symposium). These will all be considered, and it is up to the points of contact to submit the proper paperwork and to keep the Chairman of TC-5 aware of the proposals, so that the proper TC-5 endorsement can be made.
14. Nomination and Election of Officers for TC-5. Dr. Radasky asked the committee for nominations for future TC-5 officers; no additional suggestions were offered beyond the current officers, who were willing to continue in office. Mr. McInerney made a motion to elect a slate of nominees as follows: Dr. William Radasky as Chairman, Mr. Michael McInerney as Vice Chairman, and Dr. William Price as Secretary. MSC.
15. Other Business. There was no further discussion.
16. Adjournment. The meeting was adjourned at 1:30 PM.



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<b>Name</b>	<b>Affiliation</b>
Mr. Steve Barr	Thales Communications, Inc.
Mr. Yariv Bar-Zeev	IAF
Mr. Stu Benner	EMConsulting, LLC
Mr. Robert Berkovits	Chair, IEEE EMC Baltimore chapter
Dr. Richard Briët	The Aerospace Corporation
Dr. Michele Caldwell	Sandia National Labs
Mr. Steve Deppen	Beaver Aerospace & Defense
Mr. David Downs	Lockheed-Martin Corp.
Mr. Jay Ely	NASA Langley
Mr. Paul Emery	Raytheon SAS
Mr. Hans V. Erichsen	Vestas Wind Systems
Prof. Heyno Garbe	Leibniz University, Hannover
Mr. William Gjertson	Boeing
Dr. Stanislaw Grzybowski	Mississippi State University
Dr. Yuichi Hayashi	Tohoku University
Mr. Fred Heather	NAVAIR
Dr. Naofumi Homma	Tohoku University
Mr. Robert Keibel	Airbus Operations
Mr. Chad Kiger	AMS Corporation
Mr. Oun Seok Kim	Korea Electrotechnology Research Institute
Mr. Michael Koch	Fachhochschule, Hannover
Mr. Roy Lawson	Avn. Eng. Dir., US Army
Mr. Gordon MacDonald	Raytheon NCS
Mr. Jonathan Mack	NASA MSFC
Mr. Mike McInerney	USACE-ERDC
Dr. Yakaaki Mizuki	Tohoku University
Prof. Petre-Marian Nicolae	University of Craiova, Romania
Dr. Reinaldo Perez	Jet Propulsion Laboratory
Prof. Farhad Rachidi	Swiss Federal Institute of Technology
Dr. Bill Radasky	Metatech Corp.
Dr. Marcos Rubinstein	Univ. of Applied Science, Switzerland
Dr. Frank Sabath	German MoD
Mr. Laurent Sauvage	TELECOM Paristech
Mr. Edward Savage	Metatech Corp.
Mr. Richard Simon	L-3 Communications



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Mr. Brian A. Smith

Mr. Hideaki Sone

Mr. Dane Thompson

Dr. Tetsuya Tominaga

Dr. Yoshitaka Toyota

Dr. Perry Wilson

Army AED

Tohoku University

Ansys (Ansoft division)

NTT Energy & Environment Lab

Okayaama University

NIST-EM Div.