



Minutes to IEEE EMC Society TC10 Signal Integrity Technical Committee Meeting

Meeting Place: Oregon Convention Center, Room C124, Portland, OR, USA
Meeting Time – 12:00PM - 2:00PM, Wednesday August 16, 2006

1 Welcome and introductions

The meeting called to order at 12.10 by Jim Nadolny, Chair. Attendees introduced themselves. The attendance sheet was passed around for signature.

2 Review of 2006 Activities

2.a. Special Sessions

- i. SS AM 3, Wednesday 8-12, SI and PDN Design for Next Gen 5-10 Gb/s systems – Fan, Knighten, Yang, Dibene

Power Integrity and Signal Integrity was a good mix and the Session was well attended (Jun Fan) Some new people has been involved in the papers process which had some timing issues in paper acceptance and review procedure. Web automation was buggy for Ruehli.

Archambeault notes the microprocessor (chip) is seldom the sole cause (radiator) of EMC emissions but often “standardized” I/O devices and interfaces are at fault as EMC effects are not factored into the design. Even fundamental electromagnetic effects that can impact SI are not well known enough to get into the specification and design phases.

He used example of Infiiniband devices where cables and standards are poorly spec'd for EMC impact. Designers believe (wrongly) that a differential signal cable pair needs no grounds .

Big question of how to impact the standards creation process and inject EMC and SI know-how? Many SI folks do not know EMC. (Ted Debene) Can we do more work-shops and education to inject our experts know-how into those folks??

Meyerhoff and Knighten say that, maybe, this group should directly approach the standards organization in the society to assure we participate and review the work for true SI and EMC know-how.

Archambeault asks if we understand what went wrong in the standards process. Is a “case study” in order ?

Carlton claims that, similarly, there was a “Wireless” SS which exposed similar standards problems.

Chaitanya Sreerama reports that there was also a 14 MHz clock which caused a lot of interference in a wireless application, which we would think was avoidable and could be addressed by standards.



It is noted that ,Final printed program book failed to have sessions titles highlighted and authors like regular sessions, [please share lessons learned with wrap-up committee meeting Thursday 4 PM] but CD record is accurate and complete.

- ii. SA PM 4 – Wednesday 1:30-5:30, Advancements in Electromagnetic Modeling for SI/PI/EMC – Ruehli, Hubing

Ruehli reports that one of the speakers cannot attend the conference for personal reasons and he will give the talk.

2.b Workshops (Debene, Drewniak)

Good but still need more Si focus and education to EMC community and general digital design communities here in EMCS and other forums. Large gap in general know-how of drivers, receivers and signal transmission physics impact and corruptions on waveshapes. Future workshop on just buffers, taken a level just above the SPICE circuits?

Noted by Jim Drewniak , Monday and Friday overall workshops include “eclectic” presentations encompassing many of the identified shortfall knowledge items as well as jitter , spice models of buffers. They are not all organized under an SI banner. Practical symposium organizational limitations in resources and timing often drive the topics selection. Perhaps the driver discussion could be fit into future workshops.

Need more clarification on what is needed. IBIS is not adequate for some advanced applications with very high frequencies and many harmonics. SPICE is more encompassing and useful for analysis but IC suppliers cannot deliver their proprietary SPICE models for IP control reasons, but may be able to deliver “intermediate detail models” (Carlton). Archambeault points out that furthermore is still needed to link signals to EMC effects. It sounds like need more tutorials on this overall subject.

2c. Paper reviews.

A very big job. Thanks to reviewers! Need to follow the format closely to keep it fast and efficient. The e-mail / web method must be bullet-proofed (Al Ruehli found defects).

34 papers reviewed resulted in ~ 4.5 SI-focused sessions out of 18 regular sessions. ~ 25 % is SI, a great contribution.

2d Overall.

SI did one big workshop MO PM WS 9 while TC4 did the other big one.

TC 10 sponsored: 33% of Special Sessions, 25 % of regular papers , 10% of workshops.

Job well done by all. Thanks!

3. Proposed 2007 symposium activities

3a Special Sessions



3a.i. SI and PI for next generation systems - chaired by Jun Fan and Jim Knighten

Looking forward to a 2nd successful year to increase the prestige and interest levels.

As timing was a problem in 2006, how do we overcome the even tighter timing for EMC2007 Hawaii which will be in July ?? Jun Fan notes competing forums as Design Con and EPPD where circuit designers do not seem to know SI and EMC. Ted Dibene notes PI (power integrity) is very new and Design Con cannot cover it well.

Meyerhoff asks if we shall target those audiences and attract them to our forum and/or send them web resources. Consider our EMCS Education Committee's mission to reach out to all. Practically we have just 2 weeks to create next year's program proposal including authors? Todd Hubing clarifies December 15 is proposals deadline.

Ross Carlton claims that, since the topic is not well known, we still need tutorials. Maybe ETAC may be a fresh source for authors. Knighten / Dibene / Fan discuss about the need to move into the Silicon level for a SS. Then we need to recruit "special people" and do it early.

3a.ii. Industry standard interfaces and shielding performance: chaired by Bergey, Archambeault.

Include the PCB as well as traditional focus on the cables. Chaitanya Sreerana says the connector industry is not getting good direction on EMC. Archambeault confirms that particularly at 3 to 6 GHz there are many problems. Measurement standards are needed to see if designs met the goals.

Organizing committee: Chaitanya Sreerana, Dana Bergey, Bruce Archambeault, Jim Nadolny.

3b. Workshops

Fundamentals of SI - chaired by Jim Drewniak and Ted Dibene

New times in 2007: Sunday and Monday as Friday will be "50th Gala" events. Since this year was well attended it should be a full day again. Bruce Archambeault: be sure to tell everyone what to do better next time (presentation flow, content, slides).

3c. Experiments

Needs improvement. Do we have actual SI experiments ??

Note the Education Committee does have a "book" of EMC experiments and much experience in finding presenters and the means to do it. Is equipment hard to find as an issue? NO, Agilent and such will plan to have loaners and demos reserved and available for the symposium. Consider using video clips and canned animations in your computer to display on the large screens being used as in the Andy Drozd software demos and many hardware demos project test equipment displays.

4. Web Page

Giulio Antonini provided a personal URL to preview pages but it should be on the official site

<http://www.ewh.ieee.org/soc/emcs/tc10/index.htm>

It will updated asap.



Shall we make a private BLOG or e-mail reflector to facilitate committee work ??

Officers

For the office of Chairman, Jim Nadolny will continue as Chair for one more year.

For the office of Vice-Chair, Antonio Orlandi will continue as Vice-Chair.

For the office of Secretary, Giulio Antonini will continue as Secretary.

End 8/16/06 14.00 PM - Jerry Meyerhoff, Chaitanya Sreerana, Giulio Antonini

Website <http://www.ewh.ieee.org/soc/emcs/tc10/index.htm>

Minutes submitted by: Giulio Antonini, Secretary, TC10 (antonini@ing.univaq.it)



Attendee List

Place: Oregon Convention Center, Room C124, Portland, OR, USA

Date: 16 August 2006

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Secretary – Giulio Antonini

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