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Welcome to the 2009 Roadmap Cycle

Welcome to the fifth newsletter of the 2009 iNEMI Roadmap cycle. This and subsequent newsletters will be completely dedicated to keeping you informed about the progress of the 2009 iNEMI Roadmap. Please pass this newsletter on to anyone within your technical network who might be interested in becoming involved in this effort.

As a reminder, and to inform new recipients, my name is Chuck Richardson (iNEMI's Director of Roadmapping), and I am responsible for staff support of the roadmap effort. Since I don't know how familiar you are with the roadmap, I would like to give you a quick overview of its make-up. The roadmap is developed by volunteers from the industry (iNEMI members and non-members) that form groups to develop chapters for five Product Emulator Groups (PEGs) and 20 Technology Working Groups (TWGs), which cover technology and business/infrastructure areas. The number of PEG and TWG Chapters is subject to change as evidenced by recent decisions deleting the Aerospace/Defense PEG and adding a new TWG to address Solid State Illumination this cycle. I will let you know of any new changes in future newsletters. The justification for removing the Aerospace/Defense PEG is that it drives technology in limited areas and that those areas are mostly classified. As far as adding the Solid State Illumination TWG, the thinking is that this is a fast growing and technically progressive area and needs to be addressed in relation to the five PEGs.

2009 iNEMI Roadmap Product Emulator Groups (PEGs):	
1. Automotive	3. Medical
2. Consumer/Portable	4. Netcom (Network, Datacom & Telecom)
	5. Office/Large Business Systems

The PEGs define OEM requirements for their respective product sectors, anticipating product technology and business-related needs over a 10-year horizon. These needs are presented in each PEG chapter, using key attribute spreadsheets and text according to templates that are furnished by the iNEMI Technical Committee. Each PEG has a Chair or Co-chairs and as many group members as needed for a broad-based view of that emulator's scope (usually 2-5 individuals). PEG Chairs are expected to attend two to three face-to-face meetings during the 2007/2008 calendar year, but most of the group's work is done by telephone and over the web.

The TWGs use the OEM requirements detailed in the five PEG chapters to prepare each of their roadmap chapters, detailing where their respective technology stands today — and expects to progress over the next 10 years — with respect to the stated needs. Other than the TWG Chairs, who are expected to attend a minimum of three meetings, no travel is required to participate in a TWG, and this activity requires only as many hours as you want to dedicate to it, depending upon how involved you wish to be.

2009 iNEMI Roadmap Technology Working Groups (TWGs):	
1. Board Assembly	11. Organic & Printed Electronics
2. Connectors	12. Packaging
3. Energy Storage and Conversion Systems	13. Passive Components
4. Environmentally Conscious Electronics	14. PLIM (Product Lifecycle Information Management)
5. Final Assembly	15. RF Components & Subsystems
6. Interconnect Substrates - Ceramic	16. Semiconductor Technology
7. Interconnect Substrates - Organic	17. Sensors
8. Mass Data Storage	18. Solid State Illumination
9. Modeling, Simulation & Design Tools	19. Test, Inspection & Measurement
10. Optoelectronics	20. Thermal Management

Recent Activity

European Kick-off Meeting (November 14). About twenty people from a good cross section of companies from all over Europe attended. There was good interaction from the participants, and the response to the speakers was excellent. iNEMI was happy to introduce the new European Manager (Grace O'Malley) to the group, and she spent much of her time meeting and greeting the attendees while asking them for their feedback on the roadmap presentations. Two topics of note that were very prominent at Productronica: 1) Significant buzz about photovoltaics with the business opportunities that are emerging from materials and equipment firms (potential TWG?) and 2) the increased importance of test, inspection, and measurement as miniaturization and increased functionality increases the complexity.

There was naturally a request for participants in all of the TWGs and PEGs in order to guarantee European perspectives in this cycle's roadmap. I expect to hear from several people regarding roadmap participation due to Grace's ongoing support and follow-up. Europeans interested in discussing roadmap participation can contact Grace at gomalley@inemi.org.

For access to the presentations, go to

http://www.inemi.org/cms/newsroom/Presentations/Productronica_2007.html

Upcoming Events

PEG Chapter T.C. Review Telecon (January TBD, 2008). A subcommittee of the iNEMI Technical Committee was scheduled to review the PEG chapter progress and offer feedback to the PEG Chairs during a telecon from 3:00 p.m. to 4:00 p.m. EST on December 17, 2007. This telecon is being rescheduled due a lack of a quorum for some time in early January – at the same

time. This will be the last opportunity for the PEGs to refine the chapter outlines and emulator spreadsheets before the kick-off presentations on February 20/21.

TWG Chapter 2007 Chapter Distribution (January 4, 2008). On or about January 4, 2008 I will be sending out the “Word” versions of the 2007 TWG Chapters as a guideline for use by the TWG Chairs for development of the 2009 chapters. For those new chapters, I will provide a similar chapter to use as a guide for formatting and layout.

TWG / PEG Chapter Chair Telecon (January 11, 2008). On or about January 11, 2008, I will be hosting a conference call with the TWGs and PEGs to discuss the arrangements at the HP kick-off meeting and to answer any questions that might arise concerning the meeting arrangements or format.

iNEMI China Office Grand Opening (January 16, 2008). For anyone unaware, iNEMI has opened a China office in Shanghai - managed by Dr. Haley Fu. Haley is expecting to create excitement in China concerning roadmap participation. A new iNEMI member (Huawei) has already supplied participants for most all the TWGs to assist in addressing the Netcom issues faced by the TWGs for 2009. TWG Chairs will have to be creative in order to take full advantage of the expertise resident in China due to the time difference. Haley can be contacted at haley.fu@inemi.com. The formal grand opening ceremony will be held on January 16, 2008.

The 2009 iNEMI Roadmap/North American Kick-Off Meeting (February 20/21, 2008). The [2009 iNEMI Roadmap North American kick-off meeting](#) will be hosted by Hewlett Packard in their Cupertino, CA facility on February 20 and 21, 2008. Please make your plans to attend as this is the first organizing and strategy meeting for the TWGs and the first opportunity for the attendees to hear directly from the PEGs as to what their chapters and emulator spreadsheets offer as new and different from 2007. A preliminary agenda follows:

Preliminary Agenda

2009 iNEMI Roadmap North American TWG Kickoff Meeting

Hewlett Packard, Building 48
19483 Pruneridge Avenue
Cupertino, CA 95014
Oak Room

Wednesday, February 20, 2008

Time	Subject	Presenter
7:30 a.m.	Continental Breakfast	
8:00 a.m.	Welcome/Overview	Chuck Richardson, iNEMI
8:15 a.m.	HP welcome	TBD
8:30–12:00	Product Emulator Group Presentations: (30 minutes each)	
8:30 a.m.	ITRS Design Driver Issues	Juan-Antonio Carballo, IBM
9:00 a.m.	Portable/Consumer Products	Susan Noe, 3M
9:30 a.m.	Office/Large Business Systems	TBD
10:00 a.m.	Automotive	Jim Spall, Delphi

10:30 a.m.	Break	
10:45 a.m.	Medical	Anthony Primavera, Boston Scientific
11:15 a.m.	Netcom Products	John Duffy, Cisco
11:45 p.m.	Summary	Chuck Richardson, iNEMI
12:00 p.m.	Lunch	
1:00 p.m.	Introduction to Breakout Sessions	Chuck Richardson, iNEMI
1:15 p.m.	Break-out Sessions (Follow TWG signs to breakout sessions)	
4:45 p.m.	Summary/Close	Chuck Richardson, Bob Pfahl
Evening:	Optional TWG Meetings for those who wish to continue working TBD	

**Thursday, February 21, 2008
Oak Room**

8:00 a.m.	Continental Breakfast	
8:30 a.m.	Introduction to Reports	Chuck Richardson, iNEMI
8:35–11:45	Technical Working Group Reports:	
	Business Processes / Technologies:	
8:35 a.m.	Product Lifecycle Information Management	Eric Simmon, NIST
	Design Technologies:	
8:45 a.m.	Environmentally Conscious Electronics	Frank Rossman, Jabil
8:55 a.m.	Modeling, Simulation & Design Tools	Yishao Lai, ASE
9:05 a.m.	Thermal Management	Carl Fisher, 3M
	Manufacturing Technologies:	
9:15 a.m.	Board Assembly	Dongkai Shangguan, Flextronics
9:25 a.m.	Test, Inspection & Measurement	Mike Reagin, Delphi
9:35 a.m.	Final Assembly	Steve Davidson, Delphi
9:45 a.m.	Break	
	Component Subsystem Technologies:	
10:00 a.m.	Passive Components	Philip Lessner, Kemet
10:10 a.m.	RF Components & Subsystems	Ken Harvey, Teradyne
10:20 a.m.	Packaging	Bill Bottoms, NanoNexus
10:30 a.m.	Semiconductor Technology	Alan Allan, Intel
10:40 a.m.	Organic Substrates	Jack Fisher, IPC
10:50 a.m.	Mass Data Storage	Tom Coughlin, Consultant
11:00 a.m.	Connectors	John MacWilliams, Bishop
11:10 a.m.	Energy Storage Systems	TBD
11:20 a.m.	Optoelectronics	Rob Suurmann, Celestica
11:30 a.m.	Sensors	TBD
11:40 a.m.	Organic and Printed Electronics	Dan Gamota, Motorola
11:50 a.m.	Ceramic Substrates	Howard Imhof, Metalor

12:00 p.m. Summary/Close
12:10 p.m. Lunch

Chuck Richardson, Bob Pfahl

Please make your travel plans for this event. For more information and to register, go to:
http://www.inemi.org/cms/calendar/2009_RM_NA_Feb_08.html

Get Involved

Work is continuing to fill a few remaining openings for both PEG and TWG leadership positions. We are presently requesting applicants for the positions of Office/Large Business PEG Chairs and several PEG Co-chairs. We also need TWG Chairs for: Energy Storage & Conversion Systems and Sensors. iNEMI welcomes all the new Chairs to the 2009 Roadmap team and I look forward to meeting all of you at HP.

If you have been thinking about serving the industry in a position of PEG or TWG Chair, please contact me, and I will work with you to decide if this is the cycle to get involved. It is not a requirement to be an iNEMI member to participate in roadmap development. In fact, the more diversified the representatives working on the roadmap, the broader the reach and the more valuable to the industry. With the wide range of technology categories, it should be easy to find one that stirs your interest and calls you to participate.

The iNEMI Roadmap has become recognized as an important tool for defining the “state of the art” in the electronics industry as well as identifying emerging and disruptive technologies. It also includes keys to developing future iNEMI projects and setting industry R&D priorities over the next 10 years.

With the “globalization” of the iNEMI Roadmap, each edition of the roadmap should become even more important as a tool for identifying technology gaps and possible solutions for an increasingly global industry. One example of this fact is the recent declaration by the EU (European Union) that in order for an entity to get funding from them they would have to show a need for the project as identified in either the iNEMI roadmap on Organic & Printed Electronics or the VDMA (OE-A) (Organic Electronics Association) roadmap. If you would like to be involved with the 2009 iNEMI Roadmap team, or be added to the mailing list of this monthly newsletter, please contact Chuck Richardson at Chuck.Richardson@inemi.org.

2009 Roadmap Schedule

2007

3Q2007	Recruit product sector champions and teams, and refine data charts Begin publication of 2009 Roadmap Newsletter Distribute 2007 PEG chapters
4Q07	Product sector champions develop emulators
September 13	Teleconference with PEG Chairs
September 25	TWG/PEG Chairs meet to discuss key attributes (at IPC Midwest; Schaumburg, IL)
October 12	Roadmap PEG kick-off with PEG/TWG/TC (at SMTAI; Orlando, FL)
November 14	Roadmap kick-off in Europe (at Productronica; Munich, Germany)
December 17	Teleconference with TC on PEG Emulator review

2008

January 4	Email Word version of 2007 TWG chapters and Executive Summary to each TWG Chair
January 11	Organizing teleconference with TWG Chairs (offer TWG meeting rooms at TWG kick-off)
February 20-21	PEG workshop/TWG kick-off (hosted by HP in Cupertino, CA) <ul style="list-style-type: none">• Product sector spreadsheets completed – preliminary PEG chapter outlines written• Cross-cut issues are initially addressed
April 3	TC/PEG face-to-face chapter review meeting at APEX, Las Vegas, NV
May 7	Telecon with TWG Chairs, preliminary PEG Chapters due to staff
May 14	Open roadmap presentation in Herndon, VA
May 15	TC/TWG/PEG cross-cut meeting, Herndon, VA
June TBD	European Roadmap Workshop at a location to be determined
June TBD	Asian Roadmap Workshop in China
July 1	TWG drafts due for TC review
August 6-7	TC face-to-face review with TWG Chairs at Agilent (Liberty Lake, Washington)
September 21	Final roadmap chapters due
September 24	iNEMI Council of Members review of key issues, IPC Midwest, Schaumburg
October 31	Edit, prepare Appendices A-D, Executive Summary
November 20	“Go to press”
December 5	Ship to members

2009

1Q2009	Make copies available to industry
2Q2009	Industry presentation at APEX