

April 2008

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This newsletter is completely dedicated to keeping you informed about the progress of the 2009 iNEMI Roadmap. Please pass it on to anyone within your technical network who might be interested in becoming involved in this effort. If this the first issue you've received and you would like to know more about the Roadmap, see About the 2009 iNEMI Roadmap at the end of the newsletter.

Recent Activity

The status review meeting for the 2009 iNEMI Roadmap cycle was held with the iNEMI Technical Committee and PEG/TWG Chairs (or their representatives) on April 4, 2008 in conjunction with APEX in Las Vegas. Most of the TWG (Technology Working Group) and PEG (Product Emulator Group) chapters were represented in person or by telephone. Each chapter representative gave the Technical Committee a short status update on his or her respective group and received offers of help when needed from Committee members. The review portion of the T.C. meeting ran from 10:00 a.m. to 1:20 p.m.

Copies of the presentations are available on the iNEMI FTP site under the PEG and TWG general directories. If you would like to see any of these presentations, please contact your chapter Chair for access information. A meeting summary was sent to the chapter Chairs and T.C. members on 4/9/08 which highlights any action items from the meeting.

Changes for the 2009 Roadmap Cycle

The product sectors covered by our PEGs and the technology/business topics covered by our TWGs change according to their relevance to industry and to our members. For the 2009 Roadmap, we have dropped the Aerospace/Defense PEG and we have added three new TWGs and renamed an existing one to better reflect its focus. New this year are chapters on Solid State Illumination, Item-Level Tag (we've decided to make it a standalone chapter rather than include it in an existing chapter), and Photovoltaics. In addition, the decision was made to change the name of the Product Lifecycle Information Management (PLIM) TWG to simply Information Management. The new TWG topics were added in response to increased industry interest in the opportunities and technology needs of these potential growth areas.

Upcoming Events

There is a TWG Chair telecon scheduled for May 7 to discuss any issues associated with the May 14 North American Workshop being held at iNEMI headquarters in Herndon, Virginia. All TWG Chairs should plan to participate and have any questions or comments ready to discuss. Chuck will be scheduling a time and sending out a meeting notice as a reminder to all.

2009 Roadmap North American Workshop May 14, 2008; Herndon, Virginia

It is not too early to begin making plans for the 2009 iNEMI Roadmap North American Workshop being held at iNEMI headquarters in Herndon, Virginia, May 14, 2008. The day will be allotted to TWG presentations and extended breaks to assure ample opportunity for discussion between attendees and presenters. We have typically invited an audience made up of invited industry representatives that are not directly involved in the roadmap development in order to get objective feedback for the TWG Chairs. The registration fee for the workshop is \$300 (waived for speakers and iNEMI members) and includes a continental breakfast, lunch and a copy of the 2009 Roadmap (a \$250.00-\$325.00 value) when it is released for sale in March of 2009. [Click here](#) for details.

Preliminary agenda

Wednesday, May 14, 2008

7:30 am	Continental Breakfast	
7:50 am	Welcome / Overview	Jim McElroy, iNEMI Chuck Richardson, iNEMI
8:20 am - 5:00 pm	Technology Working Group Reports (20 minutes each)	
	Business Processes/Technologies:	
8:20 am	Information Management	Eric Simmon, NIST
	Design Technologies:	
8:40 am	Modeling, Simulation & Design Tools	Yishao Lai, ASE
9:00 am	Thermal Management	Ravi Prasher, Intel
9:20 am	Environmentally Conscious Electronics	Bob Pfahl, iNEMI
9:40 am	Discussion / Break	
	Manufacturing Technologies:	
10:10 am	Board Assembly	Dongkai Shangguan, Flextronics
10:30 am	Test, Inspection & Measurement	Mike Reagin, Delphi
10:50 am	Final Assembly	John Allen, Celestica

Component Subsystem Technologies:

11:10 am	Packaging	Bill Bottoms, NanoNexus
11:30 am	RF Components & Subsystems	Ken Harvey, Teradyne
11:50 am	Organic Substrates	Jack Fisher, IPC/iNEMI
12:10 pm	Optoelectronics	Dick Otte, Promex
12:30 pm	Lunch / Discussion	
1:30 pm	Mass Data Storage	Roger Hoyt, Consultant
1:50 pm	Connectors	John MacWilliams, Consultant
2:10 pm	Photovoltaics	Alain Harrus, Crosslink Capital
2:30 pm	Interconnect Substrates - Ceramic	Howard Imhof, Metalor
2:50 pm	Discussion / Break	
3:20 pm	Passive Components	Philip Lessner, Kemet
3:40 pm	Item Level Tag	Jim McElroy, iNEMI
4:00 pm	Semiconductor Technology	Alan Allan, Intel
4:20 pm	Organic and Printed Electronics	Dan Gamota, Motorola
4:40 pm	Discussion / Break	
5:00 pm	Summary	Chuck Richardson, iNEMI Bob Pfahl, iNEMI
5:30 pm	Close	

International Roadmap Workshops

We have also scheduled roadmap workshops in Europe and Asia. The first is to be held in Leuven, Belgium, on June 18, 2008 and will be hosted by IMEC. The second will be held in conjunction with ICEPT in Shanghai, China on July 28. iNEMI would like to have several TWGs and PEGs present, and ask for feedback at these workshops, so that we can assure regional issues are represented in the core TWGs of the roadmap. Historically, popular chapters with international workshops have been: Board Assembly, Final Assembly, Organic Substrates, Packaging, and Environmentally Conscious Electronics. Other likely chapters for international workshops would include: Automotive, Medical, Portable, Photovoltaics, Solid State Illumination, and Ceramic Substrates. If you are willing and able to present at one of these workshops, please contact Chuck Richardson at Chuck.Richardson@inemi.org at your convenience.

Get Involved

We would like to welcome the new Photovoltaics TWG Chair Alain Harrus from Crosslink Capital.

Work is continuing to fill a few remaining openings for both PEG and TWG leadership positions. We are presently requesting applicants for a few PEG Co-chairs (Netcom, Portable and Automotive). We also need TWG Chairs for: Environmentally Conscious Electronics, Energy

Storage & Conversion Systems, and Sensors. At the T.C. review meeting we decided to drop any TWG chapters that have not identified leaders by the May 14 meeting.

If you have been thinking about serving the industry in a position of PEG or TWG Chair, please contact [Chuck Richardson](#), 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.

2009 Roadmap Schedule (Green font denotes recent change)

2008

January 4	Email Word version of 2007 TWG chapters and Executive Summary to each TWG Chair
January 9	Teleconference with TC on PEG Emulator review (Rescheduled from December 17, 2007)
January 11	Organizing teleconference with TWG Chairs
February 20-21	PEG workshop/TWG kick-off (hosted by Agilent Technologies in Santa Clara, CA) <ul style="list-style-type: none">• Product sector spreadsheets completed – preliminary PEG chapter outlines written• Cross-cut issues are initially addressed
April 4	TC/PEG/TWG 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
June 18	European Roadmap Workshop at IMEC in Leuven, Belgium
July 28	Asian Roadmap Workshop in conjunction with ICEPT Shanghai, China
July 1	TWG drafts due for TC review
August 6-7	TC face-to-face review with TWG Chairs at Tyco Electronics, Harrisburg, PA
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

About the 2009 iNEMI Roadmap

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. 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 22 Technology Working Groups (TWGs), which cover technology and business/infrastructure areas.

2009 iNEMI Roadmap Product Emulator Groups (PEGs):

1. Automotive 2. Consumer/Portable	3. Medical 4. Netcom (Network, Datacom & Telecom) 5. Office/Large Business Systems
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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 2. Connectors 3. Energy Storage and Conversion Systems 4. Environmentally Conscious Electronics 5. Final Assembly 6. Interconnect Substrates - Ceramic 7. Interconnect Substrates - Organic 8. Mass Data Storage 9. Modeling, Simulation & Design Tools 10. Optoelectronics	11. Organic & Printed Electronics 12. Packaging 13. Passive Components 14. Photovoltaics 15. Information Management 16. RF Components & Subsystems 17. RFID Item-Level Tag 18. Semiconductor Technology 19. Sensors 20. Solid State Illumination 21. Test, Inspection & Measurement 22. Thermal Management
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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 roadmap, each edition becomes 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.