

July 2008

In this Issue:

European Roadmap Workshop Deemed a Success
Asian Roadmap Workshop Being Held July 28 in Shanghai
TC Face-to-Face Review with TWG Chairs at Tyco Electronics, Harrisburg, PA
Status of Roadmap Leadership Opportunities/Updates
2009 Roadmap Schedule
About the 2009 iNEMI Roadmap

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

2009 Roadmap European Workshop June 18, 2008; Leuven, Belgium

We just completed the workshop in Europe that was hosted by IMEC. iNEMI would like to formally thank IMEC and Eric Beyne, Scientific Director – Advanced Packaging and Interconnect Center, for being such a good host and providing excellent facilities for the meeting. Workshop presentations included Medical and Portable PEGs and key TWGs (Board Assembly, Final Assembly, Organic and Ceramic Substrates, Solid State Illumination, Photovoltaics, Packaging, and Environmentally Conscious Electronics). The day was allotted to PEG/TWG presentations and extended breaks to assure ample opportunity for discussion between attendees and presenters. Most of the presenters were regional representatives of the particular PEG or TWG Chair. The meeting attracted an audience of about 26 people, made up of mainly industry representatives who are not directly involved in the roadmap development and for the purpose of getting objective feedback for the TWG Chairs. The feedback from the attendees was positive and included excellent ideas for strengthening the TWGs' chapters. The workshop was followed by a social gathering that allowed iNEMI personnel, and especially European Manager Grace O'Malley, the opportunity to meet with the attendees on a one-to-one basis. A summary from the first two workshops was distributed to all the TWG Chairs for their use in developing their chapters.

Based upon my discussions with many of the TWG Chairs the past month, they have been spending time pulling together their committees and organizing telecons and face-to-face meetings to get started on their chapters. The PEGs have been putting the final touches on their emulator spreadsheets and chapters for use by the TWG Chairs in developing their chapters. The PEG and TWG Chairs were also preparing for the European and Asian roadmap workshops and

absorbing the many comments received at the North American Workshop. More information on these workshops is included in later sections of this newsletter.

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 two existing ones to better reflect their focus. New this year are chapters on Solid State Illumination, Item-Level Tag (we've decided to make it a stand alone chapter rather than include it in an existing chapter), and Photovoltaics. In addition, the decision was made to change the names of the Product Lifecycle Information Management (PLIM) TWG to simply Information Management and the Organic and Printed Electronics TWG to Large Area Electronics. The new TWG topics were added in response to increased industry interest in the opportunities and technology needs of these potential growth areas. We are also in danger of dropping two TWGs from this cycle that have yet to identify leaders (Energy Storage and Conversion Systems and Sensors).

Upcoming Events

International Roadmap Workshop

The next workshop will be held in conjunction with ICEPT in Shanghai, China on July 28. The link for this workshop is: http://www.inemi.org/cms/calendar/2009_RM_workshop_Asia.html. iNEMI would like to have several TWGs and PEGs present, and ask for feedback at this workshop, 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. Please invite anyone from your network that might be interested in getting involved in this cycle's roadmap to attend. If you are willing and able to present at this workshop, please contact Chuck Richardson at Chuck.Richardson@inemi.org at your convenience.

ITRS (International Technology Roadmap for Semiconductors) Summer Meeting

Chuck Richardson will be representing iNEMI at the 2008 ITRS Summer Meeting in San Francisco from July 14-16 for the purpose of providing a liaison with the various ITWGs (International Technology Working Groups) within the ITRS and the iNEMI TWGs and PEGs. By attending and providing an iNEMI roadmap focal point and input to the "Assembly and Packaging" and "Test" ITWGs, we expect to further the close relationship between the two roadmapping organizations.

TC Face-to-Face Review with TWG Chairs at Tyco Electronics, Harrisburg, PA

The main item of business at the August 6 TC/TWG Chair meeting will be to review the written chapter inputs from the TWGs for the 2009 Roadmap. Each fifteen minute TWG review will be led by the TC discussion leader with assistance from the TWG leader on key issues he identifies in the chapter as well as strengths and weaknesses of the document. The current assignments are shown in the following agenda. We expect that all TWGs will come through with drafts in a time frame that allows their TC reviewer to spend a couple of weeks preparing their presentations. Meeting details and the recommended hotel follow:

Meeting Location:

Tyco Electronics
2900 Fulling Mill Road, Training Room F
Middletown, Pennsylvania 17057
717-986-3743

The nearest airport is Harrisburg International Airport (MDT). The recommended hotel for the event is:

Sheraton Harrisburg/Hershey
4650 Lindle Road
Harrisburg, Pennsylvania 17111
Phone: 717-564-5511
Fax: 717-564-2476

Shuttle service to the hotel is available from Harrisburg (MDT) airport, but not to Tyco locations. I am certain that many of us will have cars to drive people to Tyco from the hotel.

Preliminary Agenda:

(Note: All times are EDT)

TIME:	TOPIC:	DISCUSSION LEADER:
8:30 am	Breakfast	Training Room F
9:00 am	Welcome and Introduction	Bob Pfahl, iNEMI; Rob Rix, Tyco
9:30 am	Overview	Chuck Richardson, iNEMI
10:00 am	Semiconductor Technology	Bob Pfahl
10:15 am	Interconnect Substrates – Ceramic	Bill Ballard, 3M
10:30 am	Break	
10:45 am	Interconnect Substrates – Organic	Mostafa Aghazadeh, Intel
11:00 am	Environmentally Conscious Electronics	Mike Davisson, Agilent
11:15 am	Board Assembly	Bill Barthel, Plexus
11:30 am	Test, Inspection and Measurements	Michael Roesch, HP
11:45 am	Break for Lunch	
1:00 pm	Mass Data Storage	Sherwin Kahn, Alcatel-Lucent
1:15 pm	RF Components	Jie Xue, Cisco
1:30 pm	Passive Components	Sunny Liu, Huawei
1:45 pm	Modeling, Simulation, and Design Tools	Jie Xue, Cisco
2:00 pm	Optoelectronics	Peter Tomaiuolo, Celestica
2:15 pm	Information Management	Barbara Goldstein, NIST
2:30 pm	Photovoltaics	Carol Handwerker, Purdue
2:45 pm	Connectors	Rob Rix, Tyco Electronics
3:00 pm	Break	
3:15 pm	Packaging	Mario Bolanos, TI
3:30 pm	Final Assembly	Koen Gieskes, Universal
3:45 pm	Thermal Management	Jim Arnold, iNEMI
4:00 pm	Solid State Illumination	Alan Rae, NanoDynamics
4:15 pm	RFID-ILT	Jim McElroy, iNEMI
4:30 pm	Organic & Printed Electronics	Dan Gamota, Motorola
4:45 pm	Summary and Issues	Bob Pfahl, Chuck Richardson
5:00 pm	Adjourn	

We anticipate having remote call-in capabilities for those that are unable to travel and the access numbers will be sent to the attendees prior to the meeting. Please call in at least 30 minutes before your designated time – just in case we are ahead of schedule.

In the News

Web Conference: Product Lifecycle Insights

(Wednesday, June 11, 2008; 11:00 a.m. - noon EDT)

Chuck Richardson, Director of Roadmapping, represented iNEMI for the web conference, “Product Lifecycle Insights: The critical convergence of compliance, obsolescence, and reliability.” The conference was sponsored by iNEMI member IHS Inc. and EDN and featured speakers from the Aberdeen Group and Avnet Electronics Marketing.

Chuck began the conference by introducing the attendees to iNEMI and then discussed some of the challenges regarding “Information Management” issues as defined in the 2007 iNEMI Roadmap such as escalating pressures facing global manufacturing and the growing information gaps impacting business performance related to regulatory and legislative compliance, component obsolescence, and quality and reliability. The webinar was attended by over 400 individuals and was rated an overwhelming success by the sponsors. If you were not able to attend the conference, and you are interested in this subject, a video copy is available at the following link:

<http://w.on24.com/r.htm?e=110540&s=1&k=B9D59203C0E2ED6ED98C42C50C4E1EC3>

National Electronics Symposium on Small Scale Electronics

The School of Engineering at Binghamton University is co-sponsoring, with GE Corporate Research in Niskayuna NY (near Albany, NY), this event – and has for several years. The program is held at the GE Center. Typically there are about 120 to 145 attendees, mostly from industry. This program is intended to provide engineers and researchers working on new packaging developments with a set of technical updates in their field. The program will take place July 29 and 30, 2008. Chuck Richardson will be representing iNEMI and presenting a paper written by Jim McElroy and Bob Pfahl entitled “A Proactive Approach to Improving Environmental Performance.”

Get Involved

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: Energy Storage & Conversion Systems and Sensors.

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 15	TWG drafts due for TC review
July 28	Asian Roadmap Workshop in conjunction with ICEPT Shanghai, China
August 6	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	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. Photovoltaics
5. Final Assembly	15. Information Management
6. Interconnect Substrates - Ceramic	16. RF Components & Subsystems
7. Interconnect Substrates - Organic	17. RFID Item-Level Tag
8. Mass Data Storage	18. Semiconductor Technology
9. Modeling, Simulation & Design Tools	19. Sensors
10. Optoelectronics	20. Solid State Illumination
	21. Test, Inspection & Measurement
	22. Thermal Management

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.