

September 2007

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Welcome to the 2009 Roadmap Cycle

Welcome to the second 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) who form groups to develop chapters for six Product Emulator Groups (PEGs) and 19 Technology Working Groups (TWGs), which cover technology and business/infrastructure areas.

2009 iNEMI Roadmap Product Emulator Groups (PEGs):

- | | |
|----------------------|--|
| 1. Aerospace/Defense | 5. Netcom (Network, Datacom & Telecom) |
| 2. Automotive | 6. Office/Large Business Systems |
| 3. Consumer/Portable | |
| 4. Medical | |

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 (TC). 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 will be done by telephone and over the web.

The TWGs use the OEM requirements detailed in the six PEG chapters to prepare each of their roadmap chapters, detailing where their respective technology stands today — and is expected 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 | 10. Optoelectronics |
| 2. Connectors | 11. Organic & Printed Electronics |
| 3. Energy Storage and Conversion Systems | 12. Packaging |
| 4. Environmentally Conscious Electronics | 13. Passive Components |
| 5. Final Assembly | 14. PLIM (Product Lifecycle Information Management) |
| 6. Interconnect Substrates - Ceramic | 15. RF Components & Subsystems |
| 7. Interconnect Substrates - Organic | 16. Semiconductor Technology |
| 8. Mass Data Storage | 17. Sensors |
| 9. Modeling, Simulation & Design Tools | 18. Test, Inspection & Measurement |
| | 19. Thermal Management |

Recent Activity

The schedule for the 2009 Roadmap has been developed and approved by the TC approval, and is included at the end of this newsletter. We are also planning the new PEG/TWG emulator workshop and PEG kick-off meetings that will be held in October as we gear up for the 2009 Roadmap cycle.

In response to the debriefing sessions following the last cycle, we kept the schedule close to the 2007 version to reduce the impact of vacations (scheduled for the summer months) on the TWG completion schedules. In order to do that, we had to move the PEG schedule ahead as well. You will also notice that we have tried to schedule roadmap meetings in connection with other popular industry venues and meetings that may allow participants to justify their travel plans around both. The PEG Chair conference call scheduled for September 6 has been moved to September 13 at 10:00 a.m. CDT. This call is meant to answer any questions concerning either of the meetings (PEG/TWG emulator spreadsheet workshop on September 25 and the TC / PEG meeting on October 10).

The TC is also reviewing every gap identified in the 2007 iNEMI Roadmap to reach a consensus disposition for each. They will determine whether gaps should be addressed by an iNEMI project under an existing or new TIG, "outsourced" to another organization or whether no action will be taken this cycle. Since there are over 300 gaps identified, this is quite a task and it will be completed and summarized at the October 12 TC meeting. This will complete the 2007 Roadmap cycle of gap identification, review and disposition. This added level of vetting, along with the development of the iNEMI Technical Plan and R&D Priorities documents, will assure that no gap will be overlooked, allowing iNEMI and other industry organizations to focus their resources on addressing the key gaps and needs that were identified in the roadmap.

Upcoming Events

Emulator Working Meeting (September 25). As a result of the suggestions received from several PEG and TWG Chairs for a working meeting to begin updating emulator spreadsheets leading into the 2009 iNEMI Roadmap emulator kick-off with the Technical Committee on October 12, iNEMI has scheduled a working meeting on September 25 in conjunction with IPC Midwest in Schaumburg, Illinois. This meeting will be held from 9:00 a.m. to 4:00 p.m. CDT in the Renaissance Hotel & Convention Center, Room Schaumburg D. This will be a chance for PEG and TWG Chairs to discuss emulator spreadsheet updates. This meeting is optional for both PEG and TWG Committees, so please let others in your chapter groups know of the invitation and **please register at the following link by September 18 if you are planning to attend:**

http://www.inemi.org/cms/calendar/iNEMI_Key_Attributes_Workshop_Sept_07.html. I have been

informed by the IPC Midwest managers that it would be best for iNEMI meeting attendees who don't plan to attend any other IPC conference sessions (or the show) to register for the show (no charge involved) so that there will be less confusion on the part of show personnel. The above link also will take you to the preliminary agenda for this meeting. In addition, we will offer the option to call in remotely (for those who cannot make the trip). The call-in information is: 1-888-529-0349, code is 573809.

PEG Kick-Off (October 12). The Product Emulator Group kick-off meeting with the iNEMI Technical Committee will be held October 12, 8:00 a.m. to 1:00 p.m. EDT, at the Gaylord Palms Resort and Convention Center in Orlando, Florida in the Gainesville 1&2 rooms. This meeting is being held in conjunction with SMTAI, so **please make your hotel reservations as soon as possible and register for SMTAI.** Rooms are no longer available at the Gaylord Palms; we recommend to check with the Raddison. To make room reservations, go to <http://www.smta.org/smtai/accommodations.cfm> and to register use http://www.smta.org/smtai/registration_content.cfm. **There is no charge to register for the SMTAI expo (if you do so in advance), and you need to register for access to the iNEMI meeting rooms.** We have tried to schedule iNEMI meetings so that you can also attend most of the SMTAI conference sessions. There will be a dinner on the evening of October 11 in the Gaylord Hotel's Sunset Sams at 6:30 p.m. for iNEMI TC members and PEG/TWG Chairs attending the Friday meeting. **If you plan to attend any of the iNEMI functions, please fill out the registration form that is available at the following link:** http://thor.inemi.org/webdownload/calendar/SMTAI_2007/SMTAI07_registration.pdf

Roadmap Process Information Meetings. I will be holding a roadmap process informational meeting in Orlando on Tuesday, October 9, 4:00-5:00 p.m. EDT in the Osceola 1. The purpose of this meeting is to discuss the iNEMI Roadmap process and answer any questions posed by any new or existing PEG or TWG Chairs who would like to attend. Anyone interested in finding out more about serving on a PEG/TWG as a Chair or a participant is also invited to attend.

I will also be discussing the 2007 Roadmap, including roadmap highlights and how that information is used to address industry gaps, at a SMTAI Technical Conference "Special Event," which is free for all attendees. The presentation is entitled "2007 Roadmap – Process, Trends and Results." The presentation is scheduled for Wednesday, October 10, 3:30-5:00 p.m. in room Osceola 6.

The preliminary agenda for the Technical Committee/PEG/TWG emulator review is as follows:

Friday, October 12

Time (EDT)	Topic	Discussion Leader
8:00 am	Introduction and Review of Agenda	Bob Pfahl
8:10 am	2006 PEG Review Introduction	Chuck Richardson
8:20 am	Automotive PEG Review Discussion	Spall / Kuhlman
8:55 am	Office/Large Business PEG Review Discussion	Dale Becker / Aghazadeh
9:30 am	Break	
9:40 am	Aerospace/Defense PEG Review Discussion	TBD / Ballard
10:15 am	Network, Datacom, Telecom PEG Review	John Duffy / Guth
10:50 am	Medical PEG Review Discussion	Primavera / Barthel
11:25 am	Consumer PEG Review Discussion	Noe / Ciplewski
12:00 Noon	Lunch / ITRS/iNEMI Coordination	Juan-Antonio Carballo

The main item of business at the meeting will be to review the status of the PEG input for the 2009 Roadmap cycle. The format is to have a 20-minute presentation by the PEG Chair followed by a 15-minute discussion led by a TC discussion leader. The assigned TC discussion leader should review the PEG's material and presentation prior to the meeting. I will be providing presentation templates for

use by the PEG Chairs and TC members so that the presentations can be consistent. There will be a call-in number for presenters who are not able to attend in person. Juan-Antonio Carballo will again be invited to attend to discuss the status of the ITRS/iNEMI Roadmap coordination from his Design ITWG perspective.

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 PEG Chair and Aerospace/Defense PEG Chair. We also need TWG Chairs for: RF Components & Subsystems, Environmentally Conscious Electronics, Energy Storage & Conversion Systems, Sensors, and Optoelectronics. Several volunteers have come forward already and I should be able to announce their status shortly. I am happy to announce that John Duffy, Cisco has volunteered to serve as Netcom PEG Chair for this cycle. John served as Co-chair of this PEG in 2005 and so we welcome him back to this important leadership role. If you have been thinking about serving the industry in a position of 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” should become even more important as a tool for identifying technology gaps and possible solutions for an increasingly global industry. 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

- 3Q07 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 Santa Clara, CA)
- Product sector tables completed – PEG chapter drafts 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
- May 14 Open roadmap presentation in Herndon, VA
- May 15 TC/TWG/PEG cross-cut meeting, Herndon, VA
- June 12 European Roadmap Workshop at IMAPS UK MicroTech 2008, Windsor England
- 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

- 1Q09 Make copies available to industry
- 2Q09 Industry presentation at APEX