

September 2005

In This Issue:

- **Roadmap Overview**
- **Recent Activity**
- **Leadership Changes**
- **PEG Kick-off Meeting at SMTAI (Chicago)**
- **Roadmap Leadership Opportunities**
- **Roadmap Schedule**

Welcome to the second newsletter of the *2007 iNEMI Roadmap* cycle. This and subsequent newsletters will be completely dedicated to keeping you informed about the progress of the *2007 iNEMI Roadmap*. Please pass this newsletter on to anyone within your technical network who might be interested in becoming involved in this effort.

Roadmap Overview

As a reminder, and to inform new recipients, my name is Chuck Richardson. Working with Jim Arnold (Motorola), iNEMI's Director of Roadmapping, I am responsible for staff management 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. This document is made possible by volunteers from the industry (iNEMI members and non-members) that form groups and committees to develop chapters for seven Product Emulator Groups (PEGs) and 19 technology and business/infrastructure areas. Each chapter anticipates manufacturing technology needs over a 10-year horizon. Each of the PEGs 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).

2007 iNEMI Roadmap Product Emulator Groups (PEGs):

- | | |
|----------------------|--|
| 1. Aerospace/Defense | 5. Netcom (Network, Datacom & Telecom) |
| 2. Automotive | 6. Office/Large Business Systems |
| 3. Consumer/Portable | 7. System-in-Package (SiP) |
| 4. Medical | |

The PEGs will define OEM requirements for their product sectors from both a business and technology perspective. Needs are presented in each PEG chapter, using key attribute tables and text according to templates that are furnished by the iNEMI Technical Committee (TC). Each PEG chair will be expected to attend two to three face-to-face meetings during the 2006 calendar year, but most of the group's work is done by telephone and over the web.

The Technology Working Groups (TWGs) use the OEM requirements detailed in the seven PEG chapters to prepare each of their roadmap chapters, detailing where they stand — and

expect 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.

2007 iNEMI Roadmap Technology Working Groups (TWGs):

- | | |
|--|---|
| 1. Board Assembly | 10. Modeling, Simulation & Design Tools |
| 2. Connectors | 11. Optoelectronics |
| 3. Displays | 12. Packaging |
| 4. Energy Storage Systems | 13. Passive Components |
| 5. Environmentally Conscious Electronics | 14. PLIM (Product Lifecycle Information Management) |
| 6. Final Assembly | 15. RF Components & Subsystems |
| 7. Interconnect Substrates - Ceramic | 16. Semiconductor Technology |
| 8. Interconnect Substrates - Organic | 17. Sensors |
| 9. Mass Data Storage | 18. Test, Inspection & Measurement |
| | 19. Thermal Management |

Recent Activity

Work continues on preparations for our first big event of the *2007 iNEMI Roadmap* cycle - the PEG meetings at SMTA International in Chicago this September (see related item). The 2007 schedule is included at the end of this newsletter for easy printing.

The final version of the 2004 Emulator Spreadsheet was sent out to the TWG/PEG Chairs September 1st requesting suggestions for improvements - with a due date of September 9th for forwarding the suggested changes to the PEG Chair impacted. The suggestions will be summarized and supplemented by the PEG Chairs, submitted to the TC representative responsible for their PEG discussion by September 19th and presented at the Technical Committee emulator review meeting September 30th in Chicago. All TWG Chairs are invited to attend this meeting and to join in the discussions. There were also PEG telecoms held during the week of September 6th to answer any questions concerning preparations for the Chicago meetings.

Leadership Changes

iNEMI would like to thank departing PEG Chairs Michael Schabel, Lucent (NETCOM PEG Chair) and Joseph Adam, Skyworks (SiP PEG Chair) for their outstanding leadership in establishing these two new PEGs for 2004. Due to their hard work, the leaders picking up the PEGs will have a very sound base from which to build for 2007 Roadmap. Michael assures us that he will continue to contribute to the 2007 Roadmap effort from his new post in Europe. Joe will also continue to be active as he retains his Packaging TWG and new Technology Integration Group (TIG) Chairmanships.

Upcoming Events

The *2007 iNEMI Roadmap* Product Emulator Group Working Meetings and Kick-off are September 29th and 30th, at SMTAI in Chicago. On Thursday (9/29), individual PEG meetings can be held between 10:00 a.m. and 4:00 p.m. CDT in room 11 of the Donald Stephens Convention Center. Any PEG Chair who would like to reserve this room for a two-hour block should let me know as soon as possible. Jim Arnold and I will also be holding an informational meeting on Thursday (room 11) from 4:00 to 5:00 p.m. to answer any questions from PEG or TWG Chairs. All Chairs are encouraged to attend.

To date, there has been one PEG meeting scheduled — the Medical PEG will meet from 10:00 a.m. to noon, hosted by Anthony Primavera (Guidant). The following day, there will be a joint PEG / TWG Chair / Technical Committee meeting to review and discuss the seven PEG emulators. We were recently informed that Dr. Juan-Antonio Carballo, IBM (ITRS Design TWG Chair) will also be joining the meeting to present his plans for 2005/6 ITRS and iNEMI Roadmap interaction.

The preliminary agenda for the joint emulator review meeting is as follows:

Friday, September 30

TIME:	TOPIC:	DISCUSSION LEADER:
8:00 AM	Introduction and Review of Agenda:	Bob Pfahl
8:10 AM	2006 PEG Review Introduction	Jim Arnold
8:20 AM	Automotive PEG Review Discussion	Spall / Kuhlman
9:05 AM	System in Package PEG Review Discussion	TBD / Abtew
9:50 AM	Break	
10:00 AM	Office PEG Review Discussion	Pearson / Knoblen
10:45 AM	Aerospace/Defense PEG Review Discussion	Murphy / Hyland
11:30 AM	Lunch: ITRS/iNEMI coordination	Juan-Antonio Carballo
12:15 PM	Network, Datacom, Telecom PEG Review	TBD / Guth
1:00 PM	Medical PEG Review Discussion	Primavera / Barthel
1:45 PM	Consumer PEG Review Discussion	Noe/ Arnold
2:00 PM	Break	
2:10 PM	T.C. Business Meeting	Bob Pfahl / Fred Kuhlman
3:00 PM	Adjourn	

Each PEG presentation will consist of a 25-minute presentation by the PEG Chair followed by a 20-minute discussion led by the Technical Committee discussion leader.

Anyone attending either the PEG working meetings on Thursday or the joint meeting on Friday needs to register for SMTAI in order to receive a badge for admission to the building and meeting rooms. This registration is free, and allows access to the show floor as well as our meeting rooms. Of course, there will be numerous opportunities to participate in the SMTAI Conference activities as well; however you will be required to pay for conference attendance. The registration process is relatively painless and can be accomplished online at www.smta.org/smtai. All information for show registration and hotel reservations is available

on the SMTAI website. Please sign up as soon as possible as space is limited. You can download a registration form from http://www.inemi.org/cms/calendar/SMTAI_2005.html. Individuals from all TWGs are invited to attend these meetings and be involved in PEG development and improvement. Please contact Linda Jessup at iNEMI headquarters to let her know that you are planning to attend the meetings (Linda.Jessup@inemi.org or 1-703-834-0330).

I will be making a trip to Austin September 20th to meet with the ITRS staff. We will be sharing information about our respective roadmapping processes, with the goal of learning ways to improve our roadmap development efforts. I will definitely report on my trip in next month's newsletter.

Get Involved

Work is continuing to fill a few remaining openings for both PEG and TWG leadership positions. We are presently requesting applicants for Chairs/Co-Chairs of the Netcom and SiP PEGs and for TWG Chairs/Co-Chairs for the RF Components & Subsystems, Displays, and Optoelectronics Chapters. If you have been thinking about serving the industry in a position of Chapter Chair, please contact me and I will work with you to decide if this is the cycle to get involved. You are not required to be an iNEMI member to participate in roadmap development or to serve as a Chair of one of the groups. In fact, the more diversified the representatives working on the roadmap, the broader the reach and the more valuable the final product is 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 fuels development of future iNEMI projects and sets priorities for industry R&D over the next 10 years. With the "globalization" of the iNEMI roadmap, the next "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 *2007 iNEMI Roadmap* team, or be added to the mailing list of this monthly newsletter, please contact Chuck Richardson at Chuck.Richardson@inemi.org. For more detailed information about the meetings discussed above, please contact Linda Anderson-Jessup at +1 703-834-2086 or linda.jessup@inemi.org.

From the Editor: We hope that you will find this newsletter interesting and informative. If you would like to access an issue of a past roadmap newsletter or check other roadmap information please use the public iNEMI website link: <http://www.inemi.org/roadmapping/status.html>.

Please provide comments to Chuck Richardson at 1-256-880-0922 or email Chuck.Richardson@inemi.org.

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2007 iNEMI Roadmap Calendar

- 3Q2005: Select Product Sector Champions, teams and refine data charts
- 3/4Q05: Product Sector Champions Develop Emulators
 - September 6, 2005 – Teleconference with P.E. Group Chairs
 - September 30, 2005 Roadmap Kick-off with PEG/TWG/TC at SMTAI
 - November 16, 2005 European Kick-off at Productronica
 - December 2005 review meeting with TC on PEG Emulators
- 2004 chapter, format, Exec. Summary mailed to each TWG chair (Word 6.0) 1/4/2006
- Organizing Teleconference with TWG Chairs 1/11/2006: (offer APEX TWG meetings)
- February 2006 PEG Workshop/TWG Kick-off at APEX Meeting in Anaheim:
 - Product Sector Tables Complete – Chapters Written
 - Cross cut issues addressed
- April, 2006 Roadmap Workshop - Japan
- May 15, 2006 Teleconference With TWG Chairs
- May 24, 2006 – Open Roadmap Presentation in Herndon, VA
- May 25, 2006 – TC Meeting in Herndon
- May 25, 2006 – TWG/PEG Cross Cut Meeting, Herndon
- June, 2006 - Roadmap Workshop Europe
- July 1, 2006 – TWG Drafts Due for TC Review
- August 9, 2006 – TC Face-to-Face Review with TWG Chairs in Kokomo
- September, 2006 – Council Review of Key Issues and Preliminary Summary @ SMTAI, Final Roadmap Chapters Due 9/22/06
- October 31, 2006 – Edit, Prepare Appendix A-D, Executive Summary
- November 20, 2006 – Go To “Press”
- December 4, 2006 – Ship to Members
- Feb, 2007 – Industry Release at APEX