

February 2006

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Welcome to the seventh 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.

North America Kickoff Meeting

The North America kickoff meeting for the *2007 iNEMI Roadmap* meeting is scheduled for Monday, February 6 (1:00-5:00 p.m.) and Tuesday, February 7 (8:00 a.m.-4:30 p.m.) at Disney's Paradise Pier Hotel in Anaheim, California (USA). The hotel is located at 1717 South Disneyland Drive, about a 10-minute walk from the Anaheim Convention Center, and the meeting has been scheduled to coincide with APEX 2006. This meeting is open to all who wish to participate in the 2007 iNEMI Roadmap, or are interested in learning more, with the potential of participating.

NOTE: If you have not registered for the meeting, please call the iNEMI office immediately at 1-703-834-0330 and let us know that you are attending so that we will have a lunch for you on Tuesday (which is an all-day session).

The afternoon of February 6 will be used for introductory and PEG presentations, and the following day will be used for informative presentations, TWG organizing and breakout sessions, followed by short reports from the breakout groups. iNEMI will supply three projectors for breakout sessions (to the largest three groups represented) and will provide flip charts for the remaining groups. If you wish to "report out" using a computer and projector, please bring your own computer. Cross-cut matrix issues will also be discussed. I have included an updated agenda below. Hotel details and a map can be found on the iNEMI website: http://www.inemi.org/cms/calendar/APEX_2006_Roadmap_2007_Mtg.html

On Wednesday, February 8, we have scheduled a one-hour information meeting for TWG Chairs, which will be held from 11:00 a.m. to noon in the Del Mar Room of Disney's Paradise Pier Hotel. This meeting is similar to the one held at SMTAI for the PEG Chairs. It is intended to provide information about iNEMI and the roadmap process and to answer questions for TWG Chairs and those interested in potentially becoming Chairs.

2007 iNEMI Roadmap U.S. TWG Kickoff Meeting
Disney's Paradise Pier Hotel, 1717 South Disneyland Drive, Anaheim, CA
Crystal Cove Room

Agenda

Monday, February 6, 2006

Time	Subject	Presenter
1:00 p.m.	Welcome/Overview	Jim Arnold, Motorola
1:30 – 5:00	Product Emulator Group Presentations:	
1:30 p.m.	iNEMI / ITRS Design Issues	Juan-Antonio Carballo, IBM
2:00 p.m.	Portable/Consumer Products	Susan Noe, 3M
2:30 p.m.	Office/Large Business System/ Communications	Tom Pearson, Intel
3:00 p.m.	Automotive	Jim Spall, Delphi
3:30 – 3:45	Break	
3:45 p.m.	Medical	Anthony Primavera, Guidant
4:15 p.m.	Defense and Aerospace Products	Bill Murphy, Lockheed Martin
4:45 p.m.	Summary	Jim Arnold, Motorola
5:00 p.m.	Close	

Tuesday, February 7, 2006

Crystal Cove Room

Time	Subject	Presenter
7:30 a.m.	Continental Breakfast	
8:00 a.m.	Introduction to Breakout Sessions	Jim Arnold, Motorola
8:15 a.m.	Break-out Sessions	(Follow TWG signs to break-out sessions)
Noon	Lunch	
1:00-4:15p.m.	Technical Working Group Reports:	

Business Processes / Technologies:

1:00 p.m.	Product Lifecycle Information Management	Eric Simmon, NIST
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Design Technologies:

1:10 p.m.	Environmentally Conscious Electronics	Joe Johnson, Cisco
1:20 p.m.	Modeling, Simulation & Design Tools	Sanjeev Sathe, ASE
1:30 p.m.	Thermal Management	Cam Murray, 3M

Manufacturing Technologies:

1:40 p.m.	Board Assembly	Dongkai Shangguan, Flextronics
1:50 p.m.	Test, Inspection & Measurement	Mike Reagin, Delphi
2:00 p.m.	Final Assembly	Steve Davidson, Delphi
2:10 - 2:25	Break	

Component Subsystem Technologies:

2:25 p.m.	Passive Components	Phillip Lessner, Kemet
2:35 p.m.	RF Components & Subsystems	Eric Strid, Cascade Microtech
2:45 p.m.	Packaging	Joe Adam, Skyworks
2:55 p.m.	Semiconductor Technology	Alan Allan, Intel
3:05 p.m.	Organic Substrates	Jack Fisher, iNEMI/IPC
3:15 p.m.	Mass Data Storage	Tom Coughlin, Consultant
3:25 p.m.	Connectors	John MacWilliams, Bishop
3:35 p.m.	Energy Storage Systems	Dan Doughty, Sandia Labs
3:45 p.m.	Optoelectronics	Laura Turbini, CMAP
3:55 p.m.	Sensors	Tim McBride, TI
4:05 p.m.	Organic and Printed Electronics	Dan Gamota, Motorola
4:15 p.m.	Ceramic Substrates	Howard Imhof, Metalor
4:15 p.m.	Summary/Close	Jim Arnold, Motorola
4:30 p.m.	Hard Stop	

Recent Activity

PEG Update. PEGs are working toward completing their chapter drafts and presentations for the roadmap kickoff meeting on February 6th.

We have been unable to find a Netcom PEG Chair, so the plan is to roll the Netcom requirements back into the Office/Large Business Systems PEG and add a third section “Communications” - similar to what was done in 2002. This PEG will be known as the Office/Large Business Systems/Communications Product Emulator Group, and the “Communications” section will be supported by Netcom people who participated in 2004. Any Communications-specific portion of the Office and Large Business PEG Chapter will likely lag the Office and Large Business components in its completion.

TWG Update. As reported last month, Tim McBride, TI, has agreed to chair the Sensors TWG. He will continue to enjoy the support of Co-chair Mike Azarian, University of Maryland (CALCE) who did such a good job last cycle as co-chair. We would like to thank Gans Ganesan, University of Maryland, for his work as a co-chair last cycle and we wish him good luck with his new position at Intel.

Please join in welcoming all the new roadmap leaders to the *2007 iNEMI Roadmap* team and in thanking their respective companies for their support for this important project. There will likely be a few other chair announcements to share with you in the near future.

As usual, Jim Arnold and I held a pre-kickoff meeting telecom on January 23rd to make sure that everyone is informed concerning the logistics and process of the kickoff meeting. The turn-out was excellent, with most of the TWGs represented. Highlights from the meeting are as follows:

- There was a question about the PEG presentations being made available to the TWGs. These presentations will be available on the iNEMI FTP site following the Anaheim meetings.
- TWG Chairs were asked to provide a cross-cut matrix for discussion at the kickoff meeting breakout sessions on Tuesday.
- We discussed meetings logistics and the remainder of the roadmap cycle schedule.
- Joe Adam will provide the ITRS schedule so that meetings concerning the Packaging TWG may potentially be combined.
- A roll call was done to determine how many of the TWGs will be represented at the kickoff meeting — 22 out of 24 are committed to attend.
- TWG/PEG Chair email contact information was distributed to all TWG/PEG Chairs previous to the telecom.
- Jim asked the attendees to send any remaining questions to Chuck for distribution to TWG Chairs after the meeting.

We look forward to a productive set of meetings at this year's **2007 iNEMI Roadmap** kickoff meeting.

The **2007 iNEMI Roadmap** schedule has been changed to permit roadmap workshops in Japan, Europe and Shanghai, China in the Spring and Summer. The preliminary revised schedule is listed at the end of this newsletter for your information. Please note particularly that the previously scheduled Open Roadmap Presentation, held in Herndon, VA, has been moved up to May 17 from May 24. TWG Chairs and others planning to attend will need to arrange their travel plans accordingly for this important benchmark meeting.

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 electronics industry (iNEMI members and non-members) that form groups and committees to develop chapters, presently for 5 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
2. Automotive
3. Consumer / Portable
4. Medical
5. Office / Large Business Systems / Communications

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. 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 Internet.

The Technology Working Groups (TWGs) use the OEM requirements detailed in the 5 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
2. Connectors
3. Energy Storage 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 and Printed Electronics Technology (new for 2007)
12. Packaging
13. Passive Components
14. PLIM (Product Lifecycle Information Management)
15. RF Components & Subsystems
16. Semiconductor Technology
17. Sensors
18. Test, Inspection & Measurement
19. Thermal Management

Get Involved

Work is continuing to fill a few remaining openings for TWG leadership positions. We are presently requesting applicants for the position of Optoelectronics TWG Chair. If you have been thinking about serving the industry as a 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 chair 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 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.

2007 iNEMI Roadmap Calendar

February 6-7	North America Roadmap Kickoff (Paradise Pier Hotel; Anaheim, CA) <ul style="list-style-type: none">• Product sector tables complete – chapters written• Cross-cut issues addressed
February 8	TWG Informational Meeting (Paradise Pier Hotel; Anaheim, CA)
April 2006	Possible Japan Workshop
May 8, 2006	Teleconference with TWG Chairs
May 17, 2006	Open Roadmap Presentation in Herndon, VA
May 18, 2006	TC Meeting in Herndon (Roadmap)
May-June 2006	Roadmap Workshop in Europe
June 27-30, 2006	Roadmap Workshop at HDP '05, Shanghai, China
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
February 2007	Industry Release at APEX