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Welcome to the third 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 six 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 | 4. Medical |
| 2. Automotive | 5. Netcom (Network, Datacom & Telecom) |
| 3. Consumer/Portable | 6. Office/Large Business Systems |

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 web.

The Technology Working Groups (TWGs) use the OEM requirements detailed in the six 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

PEG Kick-off. A successful PEG kick-off meeting was held at SMTA International in Chicago on September 30, 2005. All but one PEG Chair attended, and several TWG Chairs were also on hand to provide input to the PEGs and Technical Committee. It was the largest and most enthusiastic PEG kick-off ever. The follow-up work from the meeting will be mainly associated with reviewing and implementing the suggestions provided by attendees for improving the PEG spreadsheets containing the key attributes for their product sectors. Another first for this meeting was a presentation from Juan-Antonio Carballo, IBM, who chairs the ITRS (International Technology Roadmap for Semiconductors) Design Group. He discussed his group's plans for aligning some of the drivers for the ITRS to better match the iNEMI PEGs, which will allow much better integration and cooperation between the two major roadmaps.

PEG Change. In other news, we have reduced the number of PEGs for the 2007 Roadmap from seven to six. The iNEMI Board of Directors decided to move discussion of SiP technology back into the Packaging TWG, as it was in 2002. SiP was identified as a key technology driver in the 2004 roadmap, and it is felt that the technology is better dealt with as a TWG component rather than a standalone PEG.

ITRS Visit. I mentioned in the last newsletter that I was planning a trip to SEMATECH (Austin, TX) to discuss the ITRS with Linda Wilson, ITRS Information Manager and Managing Editor. I completed that visit on September 20, 2005, and (as expected) it was an excellent opportunity to share lessons learned concerning all aspects of roadmapping, from internationalization issues to roadmap newsletters. Some of the key issues discussed were: how SEMATECH came to be responsible for the ITRS publication; how the ITRS manages their "working groups" and uses the Internet to foster communication between these groups worldwide; how they manage their global meetings and assure maximum communication between different regions of the world; potential areas for cooperation between iNEMI and ITRS management in areas such as co-locating global meetings and hosting a common network site for collaboration on roadmap issues common to both. We also discussed ways

that iNEMI fosters communication between all groups (especially our e-newsletter) and processes for roadmapping. We both felt that it was an excellent day of benchmarking each other's processes and tools, and we expect to continue this sharing into the future. I will keep you informed of specific areas of cooperation as they are formalized.

Upcoming Events

The **2007 iNEMI Roadmap** kick-off in Europe will be held in conjunction with Productronica (Munich, Germany) on November 16, 2005 from 1:00 until 5:00 p.m. in room A 61 of the convention center. The meeting will be followed by a social hour. The preliminary agenda and announcement have been sent out and are included at the end of this newsletter. If you plan to attend this meeting, please download a registration form from the iNEMI website at: http://thor.inemi.org/webdownload/roadmapping/2007_Roadmap/Productronica_Registration.doc.

A complete listing of all iNEMI events at Productronica is available at <http://www.inemi.org/cms/calendar/Productronica.html>. For additional information, contact Chuck Richardson, iNEMI, at +1 256-880-0922, Chuck.Richardson@inemi.org.

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 Netcom PEG Chair, and TWG 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 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

- 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

2007 iNEMI Roadmap

European Kickoff Meeting

Wednesday, November 16, 2005, 1:00 – 5:00 p.m.

Co-Sponsored by: IEEE's CPMT Society and Fraunhofer IZM

Meeting Location: Munich Messe / Productronica

Conference Room A 61

Background

Since 1994, iNEMI has been developing a biennial technical roadmap spanning a ten-year horizon. In 2004, it was decided to expand the initiative to proactively recruit global participation. This meeting will be the first regional meeting to kick off the 2007 iNEMI Roadmap cycle and is intended to expand European input.

Objectives

The purpose of this meeting is to:

- Inform attendees of the iNEMI roadmap process
- Increase European participation/leadership in the 2007 Roadmap
- Present technical presentations from European speakers based upon 2004 roadmap
- Ensure inclusion of European issues in the 2007 Roadmap

Intended Audience

- Representatives from industry, institutes and government interested in participating in the roadmap
- Electronics industry leaders looking for information about the iNEMI 2007 Roadmap process before making the commitment to participate for the entire cycle

Benefits of Participation

By participating in this meeting you will gain an understanding of the iNEMI Roadmapping process in terms of its current capabilities and impact. You will also gain the insights of past roadmap participants who will share their PEG's/TWG's results from 2004. You will have the opportunity to interact with key European regional technology and business leaders as well as iNEMI Staff and ask questions that are important to your decision making process.

Participation on the 2007 Roadmap will help you gain insight into the likely future direction of the Electronics industry by helping to identify technology and business gaps. This collaboration can influence the strategy and investments of your company as it considers its future plans for technology and supply chain initiatives.

iNEMI 2007 Roadmap Kickoff Preliminary Agenda

13:00 – 13:10	Welcome and Introduction	Jim McElroy, CEO, iNEMI
13:10 – 13:30	iNEMI Roadmapping Process	Bob Pfahl, VP, iNEMI
13:30 – 13:45	CPMT Participation in Roadmap	Rolf Aschenbrenner, Fraunhofer IZM
13:45 – 13:55	IMAPS Participation in Roadmap	Paul Collander, Poltronic
14:10 – 14:30	Automotive PEG	Galen Reeder, Delphi
14:30 – 14:50	Packaging TWG	Jurgen Wolf, Fraunhofer IZM & Joe Adam, Skyworks
14:50 – 15:05	Board Assembly TWG	Kim Hyland, Solectron
15:05 – 15:20	Break	
15:20 – 15:40	Environmentally Conscious Electronics TWG	Hansjörg Griese, Fraunhofer IZM
15:40 – 16:20	Break-outs	
	<ul style="list-style-type: none">• Identify key European TWG areas• Identify key companies for participation• Identify strategies for European recruitment	
	Automotive	Galen Reeder, Delphi
	Netcom	Paul Collander, Poltronic
16:20 – 16:45	Report back	Breakout leaders
16:45 – 17:00	Summary and Next Steps	Bob Pfahl, Paul Collander
17:00 – 18:00	Social Hour	

Registration and additional information

If you plan to attend this meeting, please download a registration form from the iNEMI website at:

http://thor.inemi.org/webdownload/roadmapping/2007_Roadmap/Productronica_Registration.doc.

For additional information, please contact Chuck Richardson, iNEMI, at +1 256-880-0922, chuck.richardson@inemi.org.