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In this Issue:

Welcome/Introduction to 2011 iNEMI Roadmap Cycle
2009 Technical Plan and Research Priorities Documents
Key Attributes Spreadsheet Workshop
PEG Kick-Off at SMTAI in San Diego
Status of Roadmap Leadership Opportunities
Preliminary 2011 Roadmap Schedule

Welcome to the 2011 Roadmap Cycle

Welcome to the first newsletter of the 2011 iNEMI Roadmap cycle. This and subsequent monthly newsletters will be dedicated to keeping you informed about the progress of the 2011 iNEMI Roadmap. Please pass this newsletter on to anyone within your technical network who might be interested in participating.

As a reminder, and to inform new recipients, my name is Chuck Richardson, iNEMI's Director of Roadmapping. I am responsible for staff support of the roadmap effort. 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), which cover product sectors, and 21 Technology Working Groups (TWGs), which cover technology and business/infrastructure areas.

2011 iNEMI Roadmap Product Emulator Groups (PEGs):

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

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 2009/2010 calendar years, but most of each group's work is 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.

2011 iNEMI Roadmap Technology Working Groups (TWGs):

1. Board Assembly	11. MEMS/Sensors
2. Electronic Connectors	12. Modeling, Simulation & Design Tools
3. Energy Storage and Conversion Systems	13. Optoelectronics
4. Environmentally Conscious Electronics	14. Packaging & Component Substrates
5. Final Assembly	15. Passive Components
6. Information Management (IM)	16. Photovoltaics
7. Interconnect PCB – Organic	17. RF Components & Subsystems
8. Interconnect Substrates – Ceramic	18. Semiconductor Technology
9. Large-Area Flexible Electronics	19. Solid State Illumination
10. Mass Data Storage	20. Test, Inspection & Measurement
	21. Thermal Management

We have made a few changes to the TWG names and responsibilities as follows:

1. The “Packaging” TWG will become “Packaging & Component Substrates.”
2. The “Sensors” TWG has been changed to “MEMS/Sensors” to reflect the growing importance of MEMS (Micro-Electro-Mechanical Systems) to the electronics industry and the new focus on MEMS in this TWG.

Recent Activity

2009 iNEMI Technical Plan and Research Priorities Scheduled for Publication

We are completing the 2009 Roadmap cycle this month with the publication of the 2009 iNEMI Technical Plan and Research Priorities documents. These documents capture the gaps identified in the roadmap and — after analyzing the nature of the gaps and categorizing them as tactical and/or strategic — the iNEMI staff, TIGs (Technology Integration Groups) and Technical Committee (TC) members, put together a five-year plan for internal iNEMI projects to address the top gaps. The 2009 Technical Plan is expected to be released in August and will be available to members on the iNEMI website.

The iNEMI Research Committee (a subcommittee of the Technical Committee) uses the strategic gaps defined in the roadmap and the iNEMI Technical Plan to develop the iNEMI Research Priorities, a document that is provided to industry, government and academia to help focus research resources on the identified gaps. This document is available [here](#).

Work Started on the 2011 Roadmap

Work has begun on the 2011 Roadmap. We have developed a schedule for TC approval, started arranging the PEG kick-off meetings in October, and are recruiting PEG and TWG leaders as needed. The preliminary schedule for this roadmap cycle is provided at the end of the newsletter for your information and easy printing. In response to the debriefing sessions following the last cycle, we kept the schedule close to the 2009 version to reduce the impact of vacations on the TWGs’ schedules for completion. You will notice that we have scheduled some roadmap meetings in connection with other popular industry venues and meetings that may allow participants to justify their travel plans around both.

Roadmap Leadership

We would like to welcome Shahrokh Shahidzadeh (Intel) as the new Consumer/Portable PEG Chair for the 2011 cycle. Shahrokh is replacing 2009 Chair Susan Noe (3M), who has agreed to continue her involvement with the TWG on development of the 2011 chapter. Shahrokh has already begun discussions with the Design TWG of the ITRS to provide functional drivers for their next roadmap.

We also welcome John McKillop (Tekton LLC), and Raffaella Borzi (IMEC), as Chair and Co-chair, respectively, for the MEMS/Sensors TWG. Special thanks to MIG (MEMS Industry Group) for their help in recruiting these two TWG leaders.

We are happy to report that Lockheed Martin has agreed to provide leadership for the Aerospace and Defense PEG this cycle – returning it as a covered product sector to the 2011 roadmap. The person(s) will be named soon.

Roadmap Coordination Meetings

In July, Chuck Richardson represented the iNEMI Roadmap at meetings held with other roadmapping organizations. He participated in a meeting with the IPC Roadmap and JNAC (JISSO North America Council) July 7 to foster coordination between the two roadmaps and JISSO activities.

Chuck was also involved in a series of iNEMI/ITRS (International Technology Roadmap for Semiconductors) roadmap collaboration meetings held at Semicon West. Discussions at these meetings focused on alignment of the two roadmaps for the 2010/2011 cycles. Chuck represented iNEMI in the Assembly & Packaging ITRS TWG (ITWG) working meetings July 12-15. Bill Bottoms (NanoNexus) and Bill Chen (ASE) have agreed to chair the iNEMI Packaging and Components Substrates TWG again for this cycle. As a result of discussions at this meeting, the Wireless and Assembly & Packaging ITWGs have agreed to collaborate in developing the MEMS Roadmap for the 2011 iNEMI chapter.

Upcoming Events

Emulator Working Meeting (September 23, online)

Several PEG and TWG Chairs suggested we hold a working meeting to begin updating emulator spreadsheets leading into the 2011 iNEMI Roadmap emulator kick-off with the Technical Committee on October 9. We have, therefore, planned an online working meeting on September 23, from 9:00 a.m. to 4:00 p.m. CDT. This will be a chance for PEG and TWG Chairs to discuss emulator spreadsheet updates. **This work will be especially important to the new MEMS TWG as they require MEMS related key attributes from each of the PEGs for this cycle. This meeting is optional for both PEG and TWG Committees, so please let others in your chapter groups know of the invitation. A formal invitation will be sent to all TWG and PEG Chairs approximately two weeks prior to the date.**

2009 Roadmap Overview/2011 Roadmap Preview Presentation (October 6, at SMTAI, San Diego)

Chuck Richardson will be presenting a free, one hour 2009 Roadmap highlights overview along with a 2011 Roadmap preview on Tuesday, October 6 at SMTAI. The presentation will be held in the Royal Palms 5 meeting room from 10:00 am to 11:00 am PDT.

Roadmap Process Information Meeting (October 6, at SMTAI, San Diego)

Chuck Richardson will be holding a roadmap process informational meeting on Tuesday, October 6, 4:00-5:00 p.m. PDT in the Crescent meeting room. This meeting will answer any questions our new or existing PEG or TWG Chairs may have. It is also a good opportunity for anyone who is interested in serving on a PEG/TWG as a Chair or a participant to find out more about the roadmap development process.

PEG Kick-Off (October 9, at SMTAI, San Diego)

The Product Emulator Group kick-off meeting with the iNEMI Technical Committee will be held October 9, 8:00 a.m. to 1:00 p.m. PDT in San Diego. This meeting is being held at the convention center in conjunction with SMTAI, so **please make your hotel reservations as soon as possible and register for SMTAI at the following links:**

<http://www.smta.org/smtai/accommodations.cfm> and

http://www.smta.org/smtai/registration_content.cfm.

We have tried to schedule iNEMI meetings so that you can also attend most of the SMTAI conference sessions. There will be a get-together on the evening of October 8 for iNEMI TC members and PEG/TWG Chairs. The preliminary agenda for the Technical Committee/PEG/TWG emulator review on Friday, October 9, is as follows:

Time (PDT)	Topic	Discussion Leader
8:00 am	Introduction and Review of Agenda	Bob Pfahl
8:10 am	2011 PEG Review Introduction	Chuck Richardson
8:20 am	Automotive PEG Review Discussion	Spall / Bender
8:55 am	Office/Large Business PEG Review Discussion	Lober / Aghazadeh
9:30 am	Break	
9:40 am	Network, Datacom, Telecom PEG Review	Duffy / Xue
10:15 am	Medical PEG Review Discussion	Primavera / Barthel
10:50 am	Consumer/Portable PEG Review Discussion	Shahidzadeh / Roesch
11:25 am	Aerospace & Defense	TBD / Gieskes
12:00 am	ITRS/iNEMI Coordination	Juan-Antonio Carballo
12:30 pm	Lunch	

The main item of business at the meeting will be to review the status of the PEG input for the 2011 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. Chuck will be providing presentation templates for use by the PEG Chairs and TC members so that the presentations can be consistent. There will likely be a call-in number for presenters who are not able to attend in person. Juan-Antonio Carballo (IBM) will again be invited to attend to discuss the status of the ITRS/iNEMI Roadmap coordination from his Design ITWG perspective.

Get Involved

We are continuing to recruit for leadership openings. We are presently requesting applicants for Chair of the Energy Storage & Conversion Systems TWG and co-chairs for several others. If you have been thinking about serving the industry as a roadmap PEG or TWG Chair, please contact Chuck Richardson and he will work with you to decide if this is the cycle to get involved. ***iNEMI membership is not required 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” of the roadmap 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 2011 iNEMI Roadmap team, or be added to the mailing list of this monthly newsletter, please contact Chuck Richardson at Chuck.Richardson@inemi.org.

2011 Proposed Roadmap Schedule

2009

3Q2009	Recruit product sector champions and teams, and refine data charts Begin publication of 2011 Roadmap Newsletter Distribute 2009 PEG chapters
4Q09	Product sector champions develop emulators
September 9	Teleconference with PEG Chairs
September 23	TWG/PEG Chairs meet to discuss key attributes (WebEx)
October 6	2009 Roadmap Overview/2011 Roadmap Preview Presentation (at SMTAI, San Diego, CA)
October 6	Roadmap Process Informational Meeting (San Diego, CA)
October 9	Roadmap PEG kick-off with PEG/TWG/TC (San Diego, CA)
December 17	Teleconference with TC on PEG Emulator review

2010

January 4	Email Word version of 2009 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 23-24	PEG workshop/TWG kick-off (hosted by TBD in CA) <ul style="list-style-type: none">• Product sector tables completed – PEG chapter drafts written• Cross-cut issues are initially addressed
April 9	TC/PEG face-to-face chapter review meeting at APEX
May 6	Telecon with TWG Chairs
May TBD	Open Roadmap Workshop in US
June TBD	Open Roadmap Workshops in Asia and Europe
July 1	TWG drafts due for TC review
August 4	TC face-to-face review with TWG Chairs at TBD
September 22	Final roadmap chapters due
October TBD	iNEMI Council of Members review of key issues and preliminary (at SMTAI)
October 31	Edit, prepare Appendices A-D, Executive Summary
November 20	“Go to press”
December 5	Ship to members

2011

1Q2011

2Q2011

Make copies available to industry

Industry presentation at APEX