

North America Physical Interfaces & Carriers Committee Meeting Summary and Minutes

North America Standards Fall 2013 Meetings
Wednesday, 30 October 2013, 9:00 AM – 12:00 PM PST
Intel Headquarters in Santa Clara, California

Next Committee Meeting

The next meeting of the North America Physical Interfaces & Carriers Committee is tentatively scheduled for Wednesday, April 02, 2014 at 9:00 AM -- 12:00 Noon (PST) at Intel Headquarters in Santa Clara, California and/or SEMI Headquarters in San Jose, California in conjunction with the North America Standards Spring 2014 Meetings.

Times and dates are subject to change without notice.

For additional meeting details, registration, travel information, and the latest schedule, please visit:

<http://www.semi.org/node/47781>

Table 1 Meeting Attendees

Co-Chairs: Matt Fuller (Entegris) / Mutaz Haddadin (Intel)

SEMI Staff: Michael Tran

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Acteon Corporation	Komatsu	Shoji	Shimizu Consulting	Shimizu	Yasuhiro
Entegris	Fuller	Matt	Shin-Etsu Polymer	Kashimoto	Akira
Intel Corporation	Quinn	Tom	Sumitomo Metal Industries	Makai	Tetsuya
KLA-Tencor	Crockett	Alan	SEMI N.A.	Tran	Michael

**Italics indicates virtual participants*

Table 2 Leadership Changes

There were no leadership changes.

Table 3 Ballot Results

Passed ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

Failed ballots and line items were returned to the originating task forces for re-work and re-balloting.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5628	Line Item Revisions to SEMI E158-0912, Mechanical Specification for Fab Wafer Carrier Used to Transport and Store 450 mm Wafers (450 FOUP) and Kinematic Coupling and SEMI E159-0312, Mechanical Specification for Multi Application Carrier (MAC) Used to Transport and Ship 450 mm Wafers	
Line Item 1	Correct the Formula of Paragraph A3-1.6 in Appendix 3 (Method for Measuring Carrier Center of Gravity) of SEMI E158-0912 (450 FOUP) and SEMI E159-0912 (MAC)	Passed as balloted. Superclean
Line Item 2	Correction of Table 1 in SEMI E158-0912 (450 FOUP)	Passed as balloted. Superclean

Table 4 Authorized Activities

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
5676	SNARF	450 mm IPIC TF	Line Item Revisions to SEMI E83-0413, Specification for PGV Mechanical Docking Flange

Note: SNARFs and TFOFs are available for review on the SEMI Web site at:
<http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

Table 5 Authorized Ballots

#	When	SC/TF/WG	Details
5676	Cycle 1-2014	450 mm IPIC TF	Line Item Revisions to SEMI E83-0413, Specification for PGV Mechanical Docking Flange

Table 6 New Action Items

Item #	Assigned to	Details
2013Oct#01	Michael Tran	Check with Larry Hartsough whether to reapprove or leave SEMI E72 (300 mm Equipment footprint, Height, and Weight) or alone as is.
2013Oct#02	Michael Tran	Forward the new consolidated Global PIC charter to the PIC Global Coordinating Subcommittee for review and approval.

Table 7 Previous Meeting Actions Items

Item #	Assigned to	Details	Status
2013Jul#01	Stefan Radloff/Shoji Komatsu	Draft changes to the Related Information of SEMI E83 (Person Guided Vehicle)	CLOSED.
2013Jul#02	Alan Crockett	Follow up with the Facilities and Gases committee regarding the transfer of ownership of SEMI E72 (300 mm Equipment footprint, Height, and Weight)	CLOSED.
2013Apr#02	Larry Hartsough and Shoji Komatsu	Work together on merging and aligning the previously approved PIC charters from Japan and North America.	CLOSED.

1 Welcome, Reminders, and Introductions

1.1 Matt Fuller (Entegris) called the meeting to order. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: 01, SEMI Standards Required Meeting Elements

2 Review of Previous Meeting Minutes

2.1 The committee reviewed the minutes of the previous meeting.

Motion: To approve the previous meeting minutes as written.

By / 2nd: Tom Quinn (Intel) / Akira Kashimoto (Shin-Etsu Polymer)

Discussion: None.

Vote: 3-0 in favor. Motion passed.

Attachment: 02, N.A. PIC Meeting Minutes (West 2013)

3 Liaison Reports

3.1 Europe Equipment Automation Committee

3.1.1 There was no report received.

3.2 Japan Physical Interfaces & Carriers Committee

3.2.1 Michael Tran (SEMI N.A.) reported for the Japan Physical Interfaces & Carriers Committee. The key items were as follows:

- Leadership Changes
 - Kenji Yamagata (DAIFUKU) is the new co-chair in addition to Tsuyoshi Nagashima (Miraial) and Tsutomu Okabe (TDK)
- Meeting information for the committee
 - The last meeting was on September 04, 2013 at SEMI Japan in Tokyo, Japan
 - The next meeting is scheduled for December 06, 2013 in conjunction with SEMICON Japan in Chiba, Japan
- Japan Physical Interfaces & Carriers Task Force reports
 - 450 mm IPIC Task Force
 - The TF worked with G450C is correct the dimensions z45” and “z26” of Table 1 in SEMI E158 (MAC) and the moments calculations of Appendix 3 in SEMI E158 and SEMI E159 (FOUP)
 - International Process Module Physical Interface (IPPI) TF
 - The TF is working on Document 5626, *Revision to SEMI E154 (450 mm Loadport) and SEMI E166 (450 mm Cluster Module Interface)* for Cycle 6 or 7 to add the EFEM Pocket Volume
 - 450 mm AMHS TF
 - Drafting Doc. 5524, Revision to SEMI E156-0710, Mechanical Specification for 450 mm AMHS Stocker to Transport Interface
 - Gathering enough information to draft Doc. 5632, New Standard: Specification for Signal Tower for 450mm AMHS
- SEMI Japan contact: Hirofumi Kanno (hkanno@semi.org)

Attachment: 03, Japan Physical Interfaces & Carriers Report (Fall 2013)

3.3 SEMI N.A. Staff Report

1.1.1 Michael Tran (SEMI N.A.) gave the SEMI N.A. Staff Report. The key items were as follows:

- SEMI Major Events in 2013
 - Completed:
 - SEMICON Europa in conjunction with Plastic Electronics Exhibition 2013
 - October 8-10, 2013 in Dresden, Germany

- Strategic Materials Conference
 - October 16-17, 2013 in Santa Clara, California
- PV Taiwan 2013
 - October 30-November 1, 2013 in Taipei
- SEMICON Japan
 - December 4-6, 2013 in Chiba
- SEMI Major Events in 2014
- European 3D TSV Summit
 - January 21-22, 2014 in Grenoble, France
- SEMICON Korea / LED Korea
 - February 12-14, 2014 in Seoul
- SEMICON China
 - March 18-20, 2014 in Shanghai
- SEMICON Singapore
 - April 23-25, 2014 in Marina Bay Sands
- SEMICON West
 - July 8-10, 2014 in San Francisco, California
- SEMI Standards Publications
 - Standards published from July 2013 to September 2013:
 - New Standards: 5
 - Revised Standards: 19
 - Reapproved Standards: 9
 - Withdrawn Standards: 0
 - There are a total of 892 SEMI Standards in portfolio and that includes 98 Inactive standards
- New Cycle 8 Voting Period (tentative)
 - Cycle 8, 2013
 - Ballot Submission Date: Nov 15, 2013
 - Voting Period Starts: Nov 29, 2013
 - Voting Period Ends: Dec 31, 2013
- Upcoming North America Standards Meetings in 2014
 - NA Liquid Chemicals Fall 2013 Meetings
 - November 5, 2013, SEMI HQ in San Jose
 - NA Compounds Semiconductor Materials Committee Fall 2013 Meeting
 - November 15, 2013 - Teleconference & Web Meeting Only
 - NA Standards Spring 2014 Meetings
 - March 31 – April 3, 2014 at SEMI HQ in San Jose, California
- Standards Usage Interview

- Looking for details on how standards are actually used:
 - Development/Engineering
 - Procurement
 - Manufacturing
- Interview should take less than 30 minutes – contact James Amano (jamano@semi.org)
- Official SEMI Standards Groups
 - LinkedIn
 - <http://www.linkedin.com/groups/Official-SEMI-Standards-Group-1774298/about>
 - Twitter
 - @SEMI_standard
- SEMI N.A. Standards staff contact: Michael Tran, mtran@semi.org

Attachment: 04, SEMI Standards Staff Report (Fall 2013)

4 Ballot Review

NOTE 1: Committee adjudication on the ballots are detailed in the Audits & Reviews (A&R) Subcommittee Forms for procedural review. These A&R forms are available as attachments to these minutes. The attachment number for each ballot document is provided under each ballot review section below.

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
5628	Line Item Revisions to SEMI E158-0912, Mechanical Specification for Fab Wafer Carrier Used to Transport and Store 450 mm Wafers (450 FOUP) and Kinematic Coupling and SEMI E159-0312, Mechanical Specification for Multi Application Carrier (MAC) Used to Transport and Ship 450 mm Wafers	
Line Item 1	Correct the Formula of Paragraph A3-1.6 in Appendix 3 (Method for Measuring Carrier Center of Gravity) of SEMI E158-0912 (450 FOUP) and SEMI E159-0912 (MAC)	Passed as Balloted. Superclean
Line Item 2	Correction of Table 1 in SEMI E158-0912 (450 FOUP)	Passed as Balloted. Superclean

Motion: Line item 1 of Document #5628 passed committee review as balloted and will be forwarded to the A&R for procedural review.

By / 2nd: Tom Quinn (Intel) / Alan Crockett (KLA-Tencor)

Discussion: None.

Vote: 4-0 in favor. Motion passed.

Motion: Line item 2 of Document #5628 passed committee review as balloted and will be forwarded to the A&R for procedural review.

By / 2nd: Tom Quinn (Intel) / Alan Crockett (KLA-Tencor)

Discussion: None.

Vote: 4-0 in favor. Motion passed.

Attachment: 05, Procedural Review A&R Form for Document #5628

5 Subcommittee & Task Force Reports

5.1 450 mm International Physical Interfaces & Carriers (IPIC) Task Force

5.1.1 Shoji Komatsu (Acteon Corporation) reported for the International 450 mm Physical Interfaces & Carriers Task Force. The TF reviewed Document 5628 (see §4 of these minutes) which was superclean so there was no need for discussion.

5.1.2 The TF reviewed the related information of SEMI E83 (PGV Docking Flange). SEMI E83 states that the docking flange should sustain docking impact for the lifetime if the flange without any performance degradation. Under the assumption that the fully weighted PGV is 90kg (200 lb.) and the PGV moving at 0.3 m/s (1ft/sec). The current PGV utilized at G450C are 90kg without a carrier and fully weighted carrier is between 20kg and 25kg. The TF propose that the related information in SEMI E83 be updated with the assumptions that the fully weighted PGV be less than 120kg.

5.1.3 The TF found a mistake in SEMI E154 (450 mm Load Port) with the dimension “z105” for the fork lift clearance under the loadport. The table shows 863 mm, but the loadport drawing shows 880 mm. The TF will correct SEMI E154 as another line item in Document 5626, *Line Item Revisions to SEMI E154-0713, Mechanical Interface Specification for 450 mm Load Port AND to SEMI E166-0513, Specification for 450 mm Cluster Module Interface: Mechanical Interface and Transport Standard*.

5.1.4 The TF plans to ballot Document 5626 to include the EFEM Robot Pocket Volume Definition to SEMI E154 and SEMI E166 for Cycle 1, 2014.

Attachment: 06, International 450mm Physical Interfaces & Carriers Task Force Report (Fall 2013)

5.2 International and N.A. 450 mm Shipping Box Task Force

5.2.1 Tom Quinn (Intel) reported for the International and N.A. 450 mm Shipping Box Task Force. Of note:

- The TF discussed Doc. #5069, Specification for 450 mm Wafer Shipping System
 - The TF reviewed the next draft ballot (5069A) and focused on the latest items proposed as responses to the various negatives and comments for the previous ballot #5069.
 - Doc. 5069A will be balloted in Cycle 1 or 2, 2014

Attachment: 07, International and N.A. 450mm Shipping Box Task Force Report (Fall 2013)

5.3 International Process Module Physical Interface (IPPI) Task Force

5.3.1 There was no report given.

5.4 International Reticle SMIF Pods and Load Ports Interoperability Task Force

5.4.1 There was no report given.

5.5 Global PIC Maintenance Task Force

5.5.1 There was no report given. The committee reviewed the consolidated PIC global charter by the TF leaders Larry Hartsough and Shoji Komatsu. See §6.2 of these minutes for details.

5.5.2 Alan Crockett updated the committee on the status of SEMI E72 (300 mm Equipment footprint, Height, and Weight). See §6.1 of these minutes for details.

5.6 EUV Reticle Handling Task Force

5.6.1 There was no report given.

5.7 N.A. 450 mm Automated Test Die Prep Task Force

5.7.1 There was no report given.

6 Old Business

6.1 Update on SEMI E72

6.1.1 Alan Crockett (KLA-Tencor) reported on the status of SEMI E72, *Specification and Guide for 300 mm Equipment Footprint, Height, and Weight*. Of note:

6.1.2 The Facilities and Gases committee is interested in taking over SEMI E72. They plan to update the document using Building Information Modeling (BIM) which takes about two years. Future plans are to incorporate contents from SEMI E6 (Semiconductor Equipment Installation), SEMI E51 (Typical Facilities Services and Termination Matrix) and SEMI E72 into a single document.

6.1.3 The committee is fine with reapproving SEMI E72 or to leave it alone, but would like an opinion from Larry Hartsough first.

Action Item: 2013Oct#01, Michael Tran to check with Larry Hartsough whether to reapprove or leave SEMI E72 alone as is.

6.2 Update of the Physical Interfaces and Carriers Committee Charter

6.2.1 Michael Tran (SEMI N.A.) reported on the status of the new consolidated global PIC committee charter between Japan and North America. The committee reviewed charter and found no problems with it. The committee asked to forward the charter to the Physical Interface & Carriers Global Coordinating Subcommittee (GCS) for approval.

Action Item: 2013Oct#02, Michael Tran to forward the new consolidated Global PIC charter to the PIC Global Coordinating Subcommittee for review and approval.

Attachment: 08, Consolidated Global PIC Charter

6.3 Updates for Documents Due for Five Year Reviews

#	Details	Status
SEMI E152-0709	Mechanical Specification of EUV Pod for 150 mm EUVL Reticles	Pending Publication.
SEMI E111-1106	Mechanical Specification for a 150 mm Reticle SMIF Pod (RSP150) Used to Transport and Store a 6 Inch Reticle	Pending Publication.
SEMI E112-1106	Mechanical Specification for a 150 mm Multiple Reticle SMIF Pod (MRSP150) Used to Transport and Store Multiple 6 Inch Reticles	Pending Publication.
SEMI E72-0600	Specification and Guide for 300 mm Equipment Footprint, Height, and Weight	See §6.1 of these minutes for update
SEMI E84-1109	Specification for Enhanced Carrier Handoff Parallel I/O Interface	Not due until 2014
SEMI E92-0302E (Reapproved 0709)	Specification for 300 mm Light Weight and Compact Box Opener/Loader to Tool-Interoperability Standard (Bolts/Light)	Not due until 2014
SEMI E110-1102 (Reapproved 0709)	Guideline for Indicator Placement Zone and Switch Placement Volume of Load Port Operation Interface for 300 mm Load Ports	Not due until 2014

7 New Business

7.1 New SNARFs

7.1.1 The following SNARFs were submitted for the committee's approval:

#	Type	SC/TF/WG	Details
5676	SNARF	450 mm IPIC TF	Line Item Revisions to SEMI E83-0413, Specification for PGV Mechanical Docking Flange

Motion: To approve SNARF #5676

By / 2nd: Shoji Komatsu (Acteon Corporation) / Alan Crockett (KLA-Tencor)

Discussion: None

Vote: 4-0 in favor. Motion passed.

7.2 New Ballot Submission

7.2.1 The following documents were submitted for letter ballot to the committee for approval:

#	When	SC/TF/WG	Details
5676	Cycle 1-2014	450 mm IPIC TF	Line Item Revisions to SEMI E83-0413, Specification for PGV Mechanical Docking Flange

Motion: To approve letter ballot of document 5676 for Cycle 1-2014.

By / 2nd: Shoji Komatsu (Acteon Corporation) / Alan Crockett (KLA-Tencor)

Discussion: None

Vote: 4-0 in favor. Motion passed.

8 Action Item Review

8.1 Open Action Items

8.1.1 Michael Tran (SEMI N.A.) reviewed the open action items. These can be found in the Open Action Items table at the beginning of these minutes.

8.2 New Action Items

8.2.1 Michael Tran (SEMI N.A.) reviewed the new action items. These can be found in the New Action Items table at the beginning of these minutes.

9 Next Meeting and Adjournment

9.1 The next N.A. Physical Interfaces & Carriers standards meetings are tentatively scheduled for March 31, 2014 to April 2, 2014 at Intel Headquarters in Santa Clara, CA and/or SEMI Headquarters in San Jose, CA in conjunction with the N.A. Standards Spring 2014 meetings. Exact meeting dates and details will be announced when finalized and available at <http://www.semi.org/node/47781>

Tentative Schedule:

*Monday, March 31**

· Int'l Reticle SMIF Pods and Loadports Interoperability TF (10:00 AM – 12:00 PM Noon)

· Int'l 450 mm Shipping Box TF (1:00 PM – 4:00 PM)

*Tuesday, April 1**

- EUV Reticle Handling TF (10:00 AM – 12:00 PM Noon)
- Int'l Process Module Physical Interface TF (1:00 PM – 3:00 PM)
- Int'l PIC TF (3:00 PM – 5:00 PM)

*Wednesday, April 2**

- Physical Interfaces & Carriers Committee (9:00 AM – 12:00 PM Noon)

*All times are in PST. Times and dates are subject to change without notice.

9.2 Having no further business, a motion was made to adjourn the N.A. Physical Interfaces & Carriers committee meeting in conjunction with the N.A. Standards Fall 2013 Meetings at Intel Headquarters in Santa Clara, California.

Motion: To adjourn the committee meeting.
By / 2nd: Shoji Komatsu (Acteon Corporation) / Alan Crockett (KLA-Tencor)
Discussion: None.
Vote: Unanimous in favor. Motion passed.

Respectfully submitted by:

Michael Tran
 Senior Standards Engineer
 SEMI North America
 Phone: 1-408-943-7019
 Email: mtran@semi.org

Minutes approved by:

Matt Fuller (Entegris), Co-chair	December 16, 2013
Mutaz Haddadin (Intel), Co-chair	

Table 8 Index of Available Attachments ^{#1}

#	Title	#	Title
01	SEMI Standards Required Meeting Elements	05	Procedural Review A&R Form for Document #5628
02	N.A. PIC Meeting Minutes (West 2013)	06	International 450mm Physical Interfaces & Carriers Task Force Report (Fall 2013)
03	Japan Physical Interfaces & Carriers Report (Fall 2013)	07	International and N.A. 450mm Shipping Box Task Force Report (Fall 2013)
04	SEMI Standards Staff Report (Fall 2013)	08	Consolidated Global PIC Charter

^{#1} Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact Michael Tran at the contact information above.