

North America Physical Interfaces & Carriers (PI&C) Technical Committee Chapter Meeting Summary and Minutes

North America Standards Meetings at SEMICON West 2014
Wednesday, 09 July 2014, 9:00 AM – 12:00 PM PDT
San Francisco Marriott Marquis Hotel in San Francisco, California

Next N.A. Physical Interfaces & Carriers TC Chapter Meeting

The next N.A. Physical Interfaces & Carriers TC Chapter meeting is tentatively scheduled for November 5, 2014 at Intel Headquarters in Santa Clara, California in conjunction with the N.A. Standards Fall 2014 meetings. See §9 of these minutes for tentative times. Exact meeting date and details will be announced when finalized and available at <http://www.semi.org/en/node/50511>

Table 1 Meeting Attendees

Co-Chairs: Matt Fuller (Entegris) / Stefan Radloff (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	KLA-Tencor	Crockett	Alan
Brooks Automation	Babbs	Daniel	Lam Research	Gould	Richard
Brooks Automation	Carlson	Bob	Miraial	Nagashima	Tsuyoshi
Daifuku	Yamagata	Kenji	Muratec	Yamamoto	Makoto
Dainichi Shoji	Koseki	Tomohiro	Muratec	Mitsuya	Tokumoto
Dainichi Shoji	Ohyama	Kouji	Sinfonia Technology	Otani	Mikio
Entegris	Fuller	Matt	SUMCO	Nakai	Tetsuya
G450C / Intel	Alaestante	Angelo	Tokyo Electron	Mashiro	Supika
GLOBALFOUNDRIES	Rothe	Jan	U.A. Associates	Hartsough	Larry
Intel	Haddadin	Mutaz			
Intel	Quinn	Tom	SEMI Japan	Tejima	Naoko
Intel	Radloff	Stefan	SEMI N.A.	Tran	Michael

**Italics indicates virtual participants*

Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
EUV Reticle Handling TF	David Halbmaier (Entegris) - no longer at his company	
International 450 mm Shipping Box TF	Yasuhiro Shimizu (consultant) - <i>stepped down as TF co-leader</i>	Shoji Komatsu (Acteon Corporation) - <i>pending further approval by the PI&C Global Coordinating Subcommittee</i>

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>TC Chapter Action</i>
5711	Reapproval of SEMI E72-0600 (Reapproved 0305), Specification and Guide for 300 mm Equipment Footprint, Height, and Weight	Failed TC Chapter review and returned to the TF for rework.

Table 4 Authorized Activities

#	When	SC/TF/WG	Details
5759	SNARF	450 mm IPIC TF	Line item revision to SEMI E83-0714, Specification for PGV Mechanical Docking Flange
5758	SNARF	450 mm IPIC TF	Revision to SEMI AUX023-0614, Overview Guide to SEMI Standards for 450 mm Wafers

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
5759	Cycle 5 or 6, 2014	450 mm IPIC TF	Line item revision to SEMI E83-0714, Specification for PGV Mechanical Docking Flange

Table 6 New Action Items

Item #	Assigned to	Details
2014Jul#01	Michael Tran	To send Stefan Radloff the revised AUX023-0614 for review.
2014Jul#02	Alan Crockett	To submit a TFOF for a SEMI E72 Revision TF and a SNARF to revise SEMI E72.
2014Jul#03	Alan Crockett	To talk to Chris Sanders (DPS Engineering) to join the proposed SEMI E72 Revision TF.
2014Jul#04	Michael Tran	To follow up with the Europe PI&C TC Chapter and Jan Rothe (GLOBALFOUNDRIES) for the five year review status of SEMI E48.
2014Jul#05	Jan Rothe	To draft a SNARF to revise SEMI E84 for error handling and follow up with the Japan PI&C TC chapter meeting.

Table 7 Previous Meeting Actions Items

Item #	Assigned to	Details	Status
2014Apr#01	Michael Tran	Email a notice to Shoji Komatsu that SEMI E72 will be letter balloted as a reapproval ballot in Cycle 3 or 4, 2014.	CLOSED.
2014Apr#02	Michael Tran	Send Chris Sanders SEMI E6 and SEMI E72 for 5 year reviews.	CLOSED.
2014Apr#03	Larry Hartsough	Larry check with Shoji Komatsu regarding SEMI E92 and SEMI E110 due for 5 year review since they are owned by Japan.	CLOSED.
2014Apr#04	Michael Tran	Email Larry Hartsough the list of documents due for 5 year reviews.	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 TC Chapter reviewed the minutes of the previous meeting. Tetsuya Nakai's name and company were misspelled. The previous meeting minutes from the N.A. Standards Spring 2014 Meetings will be amended to correct the misspelling.

Motion: To approve the previous meeting minutes as amended.

By / 2nd: Alan Crockett (KLA-Tencor) / Larry Hartsough (U.A. Associates)

Discussion: None.

Vote: 13-0 in favor. Motion passed.

Attachment: 02, N.A. PIC TC Chapter Meeting Minutes (Amended - Spring 2014)

3 Liaison Reports

3.1 *Europe Equipment Automation (PI&C) TC Chapter*

3.1.1 Michael Tran (SEMI N.A.) reported for the Europe TC chapter. The key items were as follows:

- Europe Equipment Automation (PI&C) TC Chapter Co-chairs:
 - Alfred Honold (InReCon)
 - Lothar Pfitzner (Fraunhofer IISB)
 - Frank Petzold (Trustec)
- Meeting information
 - Last Meeting: Oct 9, 2013 – SEMICON Europa 2013 in Dresden, Germany
 - Next Meeting: Oct 8, 2014 – SEMICON Europa 2014 in Grenoble, France
- Revision of SEMI E48 (Specification for SMIF Indexer Volume Requirement) TF
 - The TF discussed
 - Creating a SNARF for the E48 revision
 - Plans to name a TF leader soon
 - The SEMI E48 revision is to be submitted for balloting in Cycle 7 or 8, 2014
- SEMI Europe contact: Andrea Busch (abusch@semi.org)

Discussion: None.

Attachment: 03, Europe Equipment Automation (PI&C) TC Chapter Report (West 2014)

3.2 *Japan Physical Interfaces & Carriers TC Chapter*

3.2.1 Tsuyoshi Nagashima (Miraial) reported for the Japan Physical Interfaces & Carriers TC Chapter. The key items were as follows:

- Japan Physical Interfaces & Carriers TC Chapter Co-chairs
 - Tsuyoshi Nagashima (Miraial)
 - Tsutomu Okabe (TDK)
 - Kenji Yamagata (DAIFUKU)
- Meeting information

- Last meeting
 - Japan Spring 2014 Meetings – April 18, 2014 at SEMI Japan in Tokyo
- Next meeting
 - Japan Fall 2014 Meetings – September 12, 2014 at SEMI Japan in Tokyo
- Ballot Review
 - Doc. 5626, Revision 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 for addition of EFEM Pocket”*
 - Passed TC Chapter review with editorial changes.
- Japan Physical Interfaces & Carriers Task Force reports
 - 450 mm AMHS Task Force
 - Doc. 5524, Revision to SEMI E156-0710, *Mechanical Specification for 450 mm AMHS Stocker to Transport Interface, with title change to Mechanical Interface Specification for 450 mm AMHS Stocker to Transport Equipment*
 - The revised SNARF for Doc. 5524 was approved by the PI&C Global Coordinating Subcommittee.
 - Doc. 5632, New Standard: *“Specification for Signal Tower for 450mm AMHS”*
 - The activity is suspended until further notice.
 - Fiducial Mark Interoperability Task Force
 - Originating Global Technical Committee:
 - Traceability / Silicon Wafer / Physical Interfaces & Carriers /Assembly & Packaging / Information & Control
 - Last meeting was held on April 15, 2013 with 20 attendees
 - Discussed Draft document #5604, *Line Item Revision to SEMI M1-0114, Specification for Polished Single Crystal Silicon Wafer and SEMI M20-0110, Practice for Establishing a Wafer Coordinate System (Re: Addition of Notchless 450 mm Wafers)*
 - The feedback from the last meeting was passed on to the International Polished Wafer TF.
 - Next meeting: TBD
 - International 450 mm Physical Interfaces & Carriers Task Force / International Process Module Physical Interface (IPPI) TF
 - Document 5626, *Revision to SEMI E154 (450 mm Loadport) and SEMI E166 (450 mm Cluster Module Interface)*
 - Was reviewed at the Japan PI&C TC Chapter meeting on April 18, 2014 and passed with editorial changes.
- International Reticle SMIF Pod and LP Interoperability TF

- The TF discussed the possibility of adding purge locations to the SMIF documents as stated in the TF charter.
 - Survey was sent out to the industry and the TF is awaiting responses.
- SEMI Japan contact: Chie Yanagisawa (cyanagisawa@semi.org)

Discussion: None.

Attachment: 04, Japan Physical Interfaces & Carriers TC Chapter Report (West 2014)

3.3 North America Standards Staff Report

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

- Upcoming SEMI Global Events in 2014
 - SEMICON Taiwan
 - September 3-5, 2014 in Taipei
 - Strategic Materials Conference
 - September 30 – October 1, 2014 in Santa Clara, California
 - SEMICON Europa Plastic Electronics
 - October 7-9, 2014 in Grenoble, France
 - SEMICON Japan
 - December 3-5, 2014 in Tokyo
- Standards Workshop at SEMICON West 2014
 - Wafer Geometry Control for Advanced Semiconductor Manufacturing
 - Important developments and future needs in wafer geometry for advanced semiconductor manufacturing.
 - Presenters from IBM, Intel as well as key equipment companies.
 - Proposals discussed during this workshop will be considered for standardization by the Advanced Wafer Geometry TF under the Silicon Wafer Committee.
- Standards Update at SEMICON West 2014
 - Semiconductor Technology Symposium (STS) Session
 - Metrics Standards Activities Update
 - Topic: Challenges, Innovations and Drivers in Metrology
 - 3DS-IC Standards Activities Update
 - Topic: Embracing what's NEXT – Devices & Systems for Big Data, Cloud and IoT
 - TechXPOT Session
 - Facilities & Gases Standards Activities Update
 - Topic: Subcomponent Supply Chain Challenges for 10 nm and Beyond
 - Compound Semiconductor Materials Standards Activities Update
 - Topic: Disruptive Compound Semiconductor Technologies

- SEMI standards Publications Stats
 - April 2014 – June 2014
 - New Standards: 6
 - Revised Standards: 20
 - Reapproved Standards: 4
 - Withdrawn Standards: 0
 - Total SEMI Standards in portfolio: 909
 - Includes 106 Inactive Standards
- Upcoming NA Standards Meetings
 - NA Standards Fall 2014 Meetings
 - November 3-6, 2014 in SEMI HQ in San Jose, California
 - NA Standards Spring 2015 Meetings
 - (Tentative) March 30 – April 2, 2015 SEMI HQ in San Jose, California
 - NA Standards Meetings at SEMICON West 2015
 - (Tentative) July 13-16, 2015 in San Francisco, California
- SEMI NA Standards staff contact: Michael Tran, mtran@semi.org

Discussion: None.

Attachment: 05, N.A. Standards Staff Report (West 2014)

4 Ballot Review

NOTE 1: TC Chapter 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 action below.

<i>Document #</i>	<i>Document Title</i>	<i>TC Chapter Action</i>
5711	Reapproval of SEMI E72-0600 (Reapproved 0305), Specification and Guide for 300 mm Equipment Footprint, Height, and Weight	Failed TC Chapter review and returned to the TF for rework.

Motion: Document 5711 failed TC Chapter review as balloted and will be returned to the TF for rework.

By / 2nd: Larry Hartsough (U.A. Associates) / Alan Crockett (KLA-Tencor)

Discussion: None.

Vote: 13-0 in favor. Motion passed.

Attachment: 06, Ballot Review Summary for Document #5711

5 Subcommittee & Task Force Reports

5.1 *Joint International 450 mm Physical Interfaces & Carriers Task Force (450 mm IPIC TF) / International Process Module Physical Interface Task Force (IPPI TF)*

5.1.1 The TF reviewed G450C Interoperability Issues with SEMI E154 (450 mm Load Port), SEMI E158 (450 mm FOUP) and SEMI E159 (MAC):

- Issue: SEMI E154/FIMA Measurements
 - TF response: See § 7.14 of SEMI E154
- Issue: E154, E158, E159 Correlated Reference Planes $y_{104} = 321.25$ (nominal) with $+10/-5$ mm adjustability. G450C propose tolerance changes to ± 5 mm.
 - TF response: No change was necessary
- Issue: Clamping vs. Door Closure
 - TF Response: Need more data to make a decision
- Issue: Interoperability issues Observed
 - TF Response: Need more data to make a decision
- Issue: Purge interface (Port Volume)
 - There is no clear volume defined in SEMI E159 and no clear “seal” requirements defined
 - TF response: The TF agrees and G450C is currently working with carrier suppliers to help define the specifications

5.1.2 Interoperability Test Group

5.1.2.1 The Interoperability Test Group is a group dedicated to developing 450 mm industry standards in Japan. Its mission is to provide test reports to the related industry standard committees and/or task forces for the standardization. The Group will find out if there are standard specification issues; not clear, misleading expressions and/or impossible to manufacture. Find out if there need special note or cautions to meet with the industry expectations other than the above. Find out if there are needed additional requirements to the current PI&C standards.

5.1.2.2 Its members are voluntary companies and do not belong to any standards developing organization. Currently, the Group is comprised of companies from Japan, but any company in the world is free to join. Please contact Shoji Komatsu (shoji_komatsu@acteon.co.jp) for more information.

5.1.2.3 The Group as of April 2014 has reported on some 450 mm PI&C related issues from companies. Of note:

- Some carriers have difficulties for purging due to back side lifts by gas pressure.
- Wafers in different carriers cannot be picked up at the same loadport at several locations.
- Some MAC door with full wafers cannot be closed by load ports.
- Some carriers do not slide onto KC pins smoothly.

5.1.2.4 The Group has determined the causes of these issues are:

- The carrier's center of gravities is out of specification than what is listed in the SEMI standard and are shifted to front door side.
- Some carrier dimensions are out of specifications with what is listed in the SEMI Standards.
- Some MAC door closing forces seem to be higher than what is in the SEMI Standards.
- KC Grooves of some carriers are not slippery enough sliding onto KC pins.

5.1.3 Revision to AUX023-0614, *Overview Guide to SEMI Standards for 450 mm Wafers*

5.1.3.1 The Chapter reviewed AUX023-0614 and offered feedback for the reference made to a future document for Signal Tower. A Signal Tower standard is useful for safety reasons because there are different set of signals being used right now by customers, fabs, and equipment suppliers. A good starting point would be asking for feedback from the end users, but none has been received so far. The Chapter suggested removing the Signal Tower reference until an actual Signal Tower document was published. SNARF #5759 to revise AUX023-0614 was submitted and approved by the Chapter. See §7.2 of these minutes for more details.

5.2 Revision to SEMI E83-0814 Discussion

5.2.1 The TF submitted Document 5759 in Cycle 6 to revise SEMI E83-0814. See §7.3 and 7.4 of these minutes for details. Document 5759 will add updated information from SEMI G95-0314 (450 mm Load Port for Tape Frame Cassettes) to SEMI E83-0814.

Action Item: 2014Jul#01, Michael Tran to send Stefan Radloff the revised AUX023-0614 for review.

Attachment: 07, Joint 450 mm IPIC TF and IPPI TF Report (West 2014)

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

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

5.3.1.1 Yasuhiro Shimizu (Consultant) is retiring and stepping down as the co-leader of Japan and International Shipping Box TF. Tsuyoshi Nagashima (Miraial) will be the new TF leader of the Japan Shipping Box TF and Shoji Komatsu (Acteon Corporation) will be the new co-leader of the International 450 mm Shipping Box TF pending further approval by the PI&C Global Coordinating Subcommittee.

5.3.1.2 The TF reviewed the SNARF to revise SEMI M80 (450 mm Shipping Box). The TF revised the SNARF to address the negative feedback received from Document 5069A (450 mm Wafer Shipping System).

- Proposed SEMI M80 changes:

- Appendix 4 - Recommendation from TF members is that Front Opening Shipping Box Reuse info needs to be in the Related Information section (rather than in an Appendix) and all “shall” wording to be changed to “should.”
- The reasoning is that it will be a useful communication tool to suppliers/customers for best practices, but including as “requirements” won’t necessarily control the results.
- Recommendation is to forward the current draft to TF members for specific wording proposals.
- A second recommendation was to include further background regarding wafer visibility in the Related Information section.
- The TF will complete the revisions to SEMI M80 first, then work on finalizing Document 5069B for letter balloting.

Attachment: 08, International and N.A. 450mm Shipping Box Task Force Report (West 2014)

5.4 Global PIC Maintenance Task Force

5.4.1 Larry Hartsough (U.A. Associates), Alan Crockett (KLA-Tencor) and Stefan Radloff (Intel) reported for the TF. The TF discussed Document 5711, *Reapproval of SEMI E72-0600 (Reapproved 0305), Specification and Guide for 300 mm Equipment Footprint, Height, and Weight*. The document was failed by the Chapter because a large number of negatives were received and there were content in the document that needed to be updated and clarified. See §4 of these minutes for more details.

5.4.2 Stefan said the next revision of SEMI E72 will just be a minor clean up with clarifications, editorial changes to match the latest SEMI Standards *Style Manual* and removing 300 mm from the title. There are no change to any of the values and requirements. While the tools are going to get bigger in the future, but companies still have existing facilities so there are no plans to do a major revision of SEMI E72 now.

5.4.3 Larry and Alan proposed forming another TF dedicated to revising SEMI E72 as it would be better than leaving it all to the Global PIC Maintenance TF which has other documents to review. Alan will be the TF co-leader of the proposed TF and he will speak to Chris Sanders (DPS Engineering) which has interest in helping revising SEMI E72 in the past to be a TF co-leader. Alan will submit and new TFOF to form the SEMI E72 Revision TF and a SNARF to revise SEMI E72.

Action Item: 2014Jul#02, Alan Crockett to submit a TFOF for a SEMI E72 Revision TF and a SNARF to revise SEMI E72.

Action Item: 2014Jul#03, Alan Crockett to talk to Chris Sanders (DPS Engineering) to join the proposed SEMI E72 Revision TF.

Attachment: 09, Global PIC Maintenance TF Report (West 2014)

5.5 International Reticle SMIF Pods and Load Ports Interoperability Task Force

5.5.1 Jan Rothe (GLOBALFOUNDRIES) reported for the TF. The TF send out an online survey on Purge Ports June 25, but the responses have been very low. The TF will attempt to get more responses by drafting another version in Microsoft Word format to have respondents complete and return to the TF by email. The survey deadline will be extended to August 15.

Attachment: 10, Reticle SMIF Pods LP Interoperability TF Report (West 2014)

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 Stefan Radloff (Intel) reported for the N.A. 450 mm Automated Test Die Prep Task Force. Stefan said most of the tape frame activities have been in Japan in the Assembly & Packaging committee. There have not been updates from Japan since March and Document 5636 (Revision of SEMI G92-0412, *Specification for Tape Frame Cassette for 450mm Wafer*) will be published soon.

6 Old Business

6.1 Update on SEMI E72 (300 mm Equipment Footprint, Height, and Weight)

6.1.1 See § 5.3, *Global PIC Maintenance Task Force* of these minutes.

6.2 Updates for Documents Due for Five Year Reviews

#	Details	Status
SEMI E84-1109	Specification for Enhanced Carrier Handoff Parallel I/O Interface	Jan Rothe (GLOBALFOUNDRIES) to review. See §7.1 of these minutes.
SEMI E92-0302E (Reapproved 0709)	Specification for 300 mm Light Weight and Compact Box Opener/Loader to Tool-Interoperability Standard (Bolts/Light)	Japan PI&C TC Chapter to review.
SEMI E110-1102 (Reapproved 0709)	Guideline for Indicator Placement Zone and Switch Placement Volume of Load Port Operation Interface for 300 mm Load Ports	Japan PI&C TC Chapter to review.
SEMI E22-0697 (Reapproved 0309)	Cluster Tool Module Interface: Transport Module End Effector Exclusion Volume Standard	Larry Hartsough (U.A. Associates) to review.
SEMI E21-94 (Reapproved 0309)	Cluster Tool Module Interface: Mechanical Interface and Wafer Transport Standard	Larry Hartsough (U.A. Associates) to review.

#	Details	Status
SEMI E48-1101 (Reapproved 1107)	Specification for SMIF Indexer Volume Requirement	The document originated in Europe. Follow up with the Europe PI&C TC Chapter and Jan Rothe.
SEMI E72-0600 (Reapproved 0305)	Specification and Guide for 300 mm Equipment Footprint, Height, and Weight	See §5.3 of these minutes.

Action Item: 2014Jul#04, Michael Tran to follow up with the Europe PI&C TC Chapter and Jan Rothe (GLOBALFOUNDRIES) for the five year review status of SEMI E48.

7 New Business

7.1 SEMI E84 (Enhanced Carrier Handoff Parallel I/O Interface) Error Handling Update

7.1.1 Jan Rothe (GLOBALFOUNDRIES) gave the SEMI E84 Error Handling Update. The problem is if an AMHS drops all signals, the equipment does not know if vehicle/hoisting mechanism is potentially still in overlap zone and an error occurs. The robot and/or equipment could be damaged. Jan propose to update the Related Information of SEMI E84 to better document the error and how to recover from it. He said the activity could take place in the Global PIC Maintenance TF or he could revive the SEMI E84 Revision TF.

7.1.2 Shoji and Kenji suggested Jan to draft a SNARF to revise SEMI E84 for the error handling and they will discuss whether an International SEMI E84 TF should be formed or if the activity should be in the Global PIC Maintenance TF at the Japan PI&C TC Chapter meeting on September 12.

Action Item: 2014Jul#05, Jan Rothe to draft a SNARF to revise SEMI E84 for error handling and follow up with the Japan PI&C TC chapter meeting.

Attachment: 11, SEMI E84 Error Handling Update Report (West 2014)

7.2 Leadership Changes

7.2.1 The N.A. PI&C TC Chapter reported David Halbmaier is no longer at his company Entegris and per the SEMI Regulations, his standards membership was terminated along with his TF leadership position of the EUV Reticle Handling TF. Yasuhiro Shimizu (Consultant) has stepped down as the co-leader of the Japan and International 450 mm Shipping Box TF. Tsuyoshi Nagashima (Miraial) will be the new TF leader of the Japan Shipping Box TF and Shoji Komatsu (Acteon Corporation) will be the new co-leader of the International 450 mm Shipping Box TF pending further approval by the PI&C Global Coordinating Subcommittee.

Group	Previous Leader	New Leader
EUV Reticle Handling TF	David Halbmaier (Entegris) - <i>no longer at his company</i>	
International 450 mm Shipping Box TF	Yasuhiro Shimizu (consultant) - <i>stepped down as TF co-leader</i>	Shoji Komatsu (Acteon Corporation) - <i>pending further approval by the PI&C Global Coordinating Subcommittee</i>
Japan 450 mm Shipping box TF	Yasuhiro Shimizu (Consultant) - <i>stepped down as TF co-leader</i>	Tsuyoshi Nagashima (Miraial)

7.3 New SNARF

7.3.1 The following SNARF was submitted for the TC Chapter's approval:

#	Type	SC/TF/WG	Details
5759	SNARF	450 mm IPIC TF	Line item revisions to SEMI E83-0714, Specification for PGV Mechanical Docking Flange

#	Type	SC/TF/WG	Details
5758	SNARF	450 mm IPIC TF	Revision to SEMI AUX023-0614, Overview Guide to SEMI Standards for 450 mm Wafers

Note: SNARFs and TFOFs are available for review on the SEMI Web site at:

<http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

Motion: To approve SNARF #5759
By / 2nd: Stefan Radloff (Intel) / Shoji Komatsu (Acteon Corporation)
Discussion: None
Vote: 12-0 in favor. Motion passed.

Motion: To approve SNARF #5758
By / 2nd: Shoji Komatsu (Acteon Corporation) / Larry Hartsough (U.A. Associates)
Discussion: None
Vote: 14-0 in favor. Motion passed.

7.4 New Ballot Submission

7.4.1 The following documents were submitted for letter ballot to the TC Chapter for approval:

#	When	SC/TF/WG	Details
5759	Cycle 5 or 6-2014	450 mm IPIC TF	Line item revisions to SEMI E83-0714, Specification for PGV Mechanical Docking Flange

Motion: To approve Document #5759 for letter ballot in Cycle 5 or 6, 2014.
By / 2nd: Stefan Radloff (Intel) / Shoji Komatsu (Acteon Corporation)
Discussion: None
Vote: 12-0 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 November 3-5, 2014 at Intel Headquarters in Santa Clara, California in conjunction with the NA Standards Fall 2014 meetings.

Tentative Schedule:

Monday, November 3*

- EUV Reticle Handling TF (TBD)
- Int'l Reticle SMIF Pods and Loadports Interoperability TF (TBD)

Tuesday, November 4*

- Joint Int'l 450 mm PIC TF / Int'l Process Module Physical Interface TF (10:00 AM – 12:00 PM)
- PIC Global Maintenance TF (1:00 PM – 3:00 PM)
- Int'l 450 mm Shipping Box TF (3:00 PM – 5:00 PM)

Wednesday, November 5*

- N.A. Physical Interfaces & Carriers TC Chapter (9:00 AM – 12:00 PM Noon)

*All times are Pacific Time. Times and dates are subject to change without notice.

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

<http://www.semi.org/en/node/50511>

9.2 Having no further business, the N.A. Physical Interfaces & Carriers TC Chapter meeting at SEMICON West 2014 was adjourned at the San Francisco Marriott Marquis Hotel in San Francisco, California.

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	September 9, 2014
Stefan Radloff (Intel), Co-chair	

Table 8 Index of Available Attachments #1

#	Title	#	Title
01	SEMI Standards Required Meeting Elements	07	Joint 450 mm IPIC TF and IPPI TF Report (West 2014)
02	N.A. PIC TC Chapter Meeting Minutes (Amended - Spring 2014)	08	International and N.A. 450mm Shipping Box Task Force Report (West 2014)
03	Europe Equipment Automation (PI&C) TC Chapter Report (West 2014)	09	Global PIC Maintenance TF Report (West 2014)
04	Japan Physical Interfaces & Carriers TC Chapter Report (West 2014)	10	Reticle SMIF Pods LP Interoperability TF Report (West 2014)
05	N.A. Standards Staff Report (West 2014)	11	SEMI E84 Error Handling Update Report (West 2014)
06	Ballot Review Summary for Document #5711		

#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.