Physical Interfaces & Carriers North America TC Chapter

Meeting Summary and Minutes

NA Standards Spring Meetings 2023

Wednesday, April 5, 10:00 – 12:00 Noon Pacific

SEMI Global Headquarters, Milpitas, California, and via Official Virtual TC Chapter Meeting (OVTCCM)

TC Chapter Announcements

Next TC Chapter Meeting

SEMICON West 2023

Wednesday, July 12, 2023, 10:00 – 12:00 Noon Pacific

Moscone Center, San Francisco, California/USA

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Matt Fuller (Entegris), Melvin Jung (Intel)
SEMI Staff: Laura Nguyen

Company	*Last*	*First*	*Company*	*Last*	*First*
Acteon NEXT Corporation	*Komatsu*	*Shoji*	*Lam Research*	*Gould*	*Richard*
Brooks Automation	*Babbs*	*Daniel*	*Nordson SONOSCAN*	*Martell*	*Steve*
Entegris	*Fuller*	*Matthew*	*LK Semiconductor Consulting Services*	*Kwakman*	*Laurens*
JEOL Ltd.	Asayama	Kyoichiro	Tokyo Electron Limited	Mashiro	Supika
Intel	*Jung*	*Melvin*			
Intel	*Radloff*	*Stefan*	SEMI	Nguyen	Laura

Table 2 Leadership Changes

None

Table 3 Committee Structure Changes

None

Table 4 Ballot Results

None

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

#2 **Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.

Table 5 Activities Approved by the GCS between meetings of the TC Chapter

None

Table 6 Authorized Activities

Listing of all revised or new SNARF(s) approved by the Originating TC Chapter.

None

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

Table 7 Authorized Ballots

None

Table 8 SNARF(s) Granted a One-Year Extension

#	*TF*	*Title*	*Expiration Date*
6592	Electron Microscopy Workflow TF	New Standard: Specification for Container for Transport and Storage of Transmission Electron Microscope (TEM) Lamella Carriers within Electron Microscopy Workflows	Spring 2024

Table 9 SNARF(s) Abolished

None

Table 10 Standard(s) to receive Inactive Status

None

Table 11 New Action Items

Item #	*Assigned to*	*Details*
None		

Table 12 Previous Meeting Action Items

Item #	*Assigned to*	*Details*
2017April#04	Laura Nguyen	To identify which documents under the global task force, belong to which committees. Ongoing. Unsure how this should be done.
2022Mar#01	Larry Hartsough	Larry to check Five-Year docs for “must”, “shall”, and other PM related items. Ongoing.
2022Mar#02	Laura Nguyen	Laura to check internally to share top formatting examples to TF leaders. Ongoing.
2022Mar#03	Stefan Radloff	Prepare another SNARF for LoadPort, possibly by West. Ongoing.
2022July#01	Larry Hartsough	Provide tutorial for Inactive Standards. Ongoing.
2022Nov#01	Larry Hartsough	Put together a slide on how to add other things to consider in the future (such as, how to resolve different types of conflict; ex: SEMI E131 and E15.1 conflict) Ongoing.

1 Welcome, Reminders, and Introductions

Matt Fuller (Entegris) called the meeting to order at 10:03. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: SEMI Standards Required Meetings Elements (File name: Required Element Nov 2020 Rev1)

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion:	To accept the previous meeting minutes as written.
By / 2nd:	By: Supika Mashiro / Tokyo Electron Ltd. Second: laurens kwakman / LK Semiconductors Consulting Services
Discussion:	None.
Vote:	5-0 in favor. Motion passed.

Attachment: [2022Fall] PIC NA TC Chapter Meeting Minutes FINAL

3 Liaison Reports

3.1 *Physical Interfaces & Carriers Japan TC Chapter*

Laura Nguyen (SEMI HQ) reported for the Physical Interfaces & Carriers Japan TC Chapter. Of note:

Meeting Information

- Last meeting
  - Friday, September 2,2022 at the SEMI Standards Japan Fall Meetings (Official Virtual TC Chapter Meeting/ SEMI Japan Office (Hybrid)
- Next Meeting:
  - Thursday, December 15, 2022, in conjunction with SEMICON Japan 2022 (Tokyo Big Sight, Tokyo/ OVTCCM (Hybrid)

Organization Chart (*See attachment)*

Ballot Results

Doc#	Document Title	TC Chapter Action
6898	Revision to SEMI E181, - SPECIFICATION FOR PANEL FOUP FOR PANEL LEVEL PACKAGING	**Passed,** as balloted
6899	Revision to SEMI E181.1, - Specification for Panel FOUP for 510 to 515 mm Panel Size and 12 Slots	**Passed,** as balloted
6900	Revision to SEMI E181.2, - Specification for Panel FOUP for 510 to 515 mm Panel Size and 6 Slots	**Passed,** as balloted
6901	Revision to SEMI E181.3, - Specification for Panel FOUP for 600 to 600 mm Panel Size and 12 Slots	**Passed,** as balloted
6902	Revision to SEMI E181.4, - Specification for Panel FOUP for 600 to 600 mm Panel Size and 6 Slots	**Passed,** as balloted

Task Force Highlights

- Panel Level Packaging(PLP) Panel FOUP TF

【FOUP】

- Waiting for the publication of line-item Ballot 6750, 6751 and 6752
- The FOUP standard required many modifications due to the indication of KLA-Eric.
- (#6898,6899,6900,6901,6902) submitted to Cycle4 2022 with no objections and no comments. Passed as ballot at the JA PIC TC Meeting.
  - SEMI E181 - 0321 —Specification for Panel FOUP for Panel Level Packaging
  - SEMI E181.1 - 0321 —Specification for Panel FOUP for 510 to 515 mm Panel Size and 12 Slots
  - SEMI E181.2 - 0321 —Specification for Panel FOUP for 510 to 515 mm Panel Size and 6 Slots
  - SEMI E181.3 - 0321 —Specification for Panel FOUP for 600 to 600 mm Panel Size and 12 Slots
  - SEMI E181.4 - 0321 —Specification for Panel FOUP for 600 to 600 mm Panel Size and 6 Slots

【Loadport】

- The Panel FOUP Loadport standard, including two subordinate standards, was published in June,2021.
  - SEMI E182 -0621 — Specification for Panel FOUP Loadport for Panel Level Packaging

  - SEMI E182.1-0621 — Specification for Panel FOUP Loadport for 510 to 515 mm Panel Size
  - SEMIE182.2-0621 — Specification for Panel FOUP Loadport for 600 to 600 mm Panel Size

Five-Year Review

Designation#	Standard Title	Action By	Assigned to
SEMI E84-1109 (Reapproved 1217)	Specification for Enhanced Carrier Handoff Parallel I/O Interface	2023/12/29	**Global PIC Maintenance TF**

Staff Contact: Mami Nakajo (mnakajo@semi.org)

Attachment: JA_PIC_Liaison_20220920_v1.1

3.2 *SEMI Staff Report*

Laura Nguyen (SEMI) gave the SEMI Staff Report. Of note:

SEMI Global 2022 & 2023 Calendar of Events

- [2022] SEMICON Europa (Nov 15-17; Munich, Germany), SEMICON Japan (December 15-17; Tokyo)
- [2023] SEMICON Korea (Feb 1-3; Seoul, Korea), SEMICON China (Mar 22-24; Shanghai, China)

Upcoming NA Meetings

- NA Standards Spring Meetings
  - April 3-6, 2023, at SEMI HQ, Milpitas, California/USA

Critical Dates for SEMI Standards Ballots

- Cycle 8-2022: Ballot Submission Due: Oct 4/Voting Period: Oct 18 – Nov 17
- Cycle 9-2022: Ballot Submission Due: Nov 15/Voting Period: Nov 29 – Dec 29

2023 Cycle dates can be found here: http://www.semi.org/en/Standards/Ballots

Standards Publications Report

Cycle	*New*	*Revised*	*Reapproved*	*Withdrawn*
July 2022	0	3	0	0
August 2022	0	5	0	2
September 2022	2	3	6	1
October 2022	3	8	0	0

Total in portfolio – 1,069 (includes 320 Inactive Standards)

New Standards

Cycle	*Designation*	*Title*	*Committee*	*Region*
September 2022	SEMI F120	Test Method for the Electrochemical Critical Pitting Voltage Testing of Stainless Steel Used in Corrosive Gas Systems	Gases	NA
September 2022	SEMI E120.2	Specification for Protocol Buffers for Common Equipment Model (CEM)	Information & Control	NA
October 2022	SEMI E125.2	Specification for Protocol Buffers for Equipment Self Description (EqSD)	Information & Control	NA
October 2022	SEMI E134.2	Specification for Protocol Buffers of Data Collection Management	Information & Control	NA
October 2022	SEMI E142.4	Specification for SECS II Protocol for Substrate Mapping Using Item Transfer	Information & Control	NA

Publications Backlog

Processing Queue: 37 YTD Published: 93

- 5/5/2022 A&R cycle: 8 - New Standards: 11
- 6/30/2022 A&R cycle: 11 - Revisions: 43
- 8/18/2022 A&R cycle: 9 - Reapprovals: 36
- 10/12/2022 A&R cycle: 9 - Withdrawals: 3

Contributing Factors

- Increased A&R cycles have resulted in a constant rate of documents for processing.
- Ballots are becoming more complex and require more time to process.
- As the Regulations, Procedure Manual, and Style Manual are updated, there is the potential for delays in processing documents (e.g., ensuring documents comply).

NEW! SEMI Corporate PPT Template

- SEMI launched a new corporate PPT template earlier this year
    - Standards is among the first to use the new template ⭐
- We encourage TFs to begin transitioning over to the new template
    - Please reach out to your Staff contact for assistance
    - Templates will be sent out by Staff and can be found on the SEMI Web site www.semi.org/standards (under Tools for Developing Standards)

Five-Year Review

Designation #	Standard Title	Action By	Original TF assigned to:
SEMI E117s-0117	Specification for Reticle Load Port	January 2022	Global PIC Maintenance Task Force (NA)
SEMI E19-0417	Specification for Standard Mechanical Interface (SMIF)	April 2022	Global PIC Maintenance Task Force (NA)
SEMI E19.4-0417	Specification for 200 mm Standard Mechanical Interface (SMIF)	April 2022	Global PIC Maintenance Task Force (NA)
SEMI E112-1017	Specification for a 150 mm Multiple Reticle SMIF Pod (MRSP150) Used to Transport and Store Multiple 6 Inch Reticles	October 2022	Global PIC Maintenance Task Force (NA)
SEMI E111-1017	Specification for a 150 mm Reticle SMIF Pod (RSP150) Used to Transport and Store a 6 Inch Reticle	October 2022	Global PIC Maintenance Task Force (NA)

Attachment: Staff Report Nov 2022 v6_PIC

4 Ballot Review

Listing of documents authorized by the Originating TC Chapter for Letter Ballot.

None

5 Subcommittee and Task Force Reports

5.1 *Electron Microscopy Workflow Task Force*

Laurens Kwakman (LN Semiconductor Consulting) reported for this Task Force. Of note *{See attachment for images}*:

Agenda

- Activity update since July 13, 2022, PIC meeting
    - Actions following withdrawal of Thermo Fisher Scientific as active participant in EM Workflow TF
    - Proposal for continued TF activities in 2023

  - Revision of time planning
- Motion to approve: Organizational changes
- SEMI Standards Excellence Award

Activity Update

- Following TFS announcements in the PIC TC meeting of July 13, 2022:
  - With the suspension of active TFS engagements in the EM Workflow Taskforce, all further activities have temporarily been discontinued to review this unexpected and new situation and its impact on the continuity of our Taskforce.
  - After the summer holiday period, Hitachi, JEOL, Peter Wagner and Laurens Kwakman have reviewed the new situation without the key contributor that Thermo Fisher Scientific has been over the past years.
  - It was concluded that continuing the Standardization activities remains in the interest of the industry as a whole and that customers (microscopy workflow end-users) as well as microscopy suppliers will benefit from it.
- different scenarios for the new organization of the Taskforce activities were discussed, and agreement was reached on the following:
  - continuation of the Taskforce activity under the North American PIC TC organization.
  - Peter Wagner and Laurens Kwakman will continue to contribute as before as independent consultants, kindly supported by JEOL and Hitachi.
  - Peter Wagner will remain responsible for the editing of the Standards documents for LCC and LC shipping containers.
  - Laurens Kwakman will remain the acting Taskforce leader and become technical advisor to the microscopy suppliers.
  - Kyoichiro Asayama from JEOL kindly volunteers to become co-leader of the NA Taskforce – to be approved by the PIC TC.
  - Tsuyoshi Onishi and Kyoichiro Asayama from Hitachi and JEOL will continue to lead and drive the Japanese liaison TF activities with their local partners.
- Preliminary, revised time planning for LCC and LC shipping box SNARFs:
  - Below revised planning still needs to be discussed and approved by the Taskforce members
  - TF activities have been on hold since April 2022 and will restart in January 2023
  - TF activities have taken longer due to different design changes (LC marking related) and time needed to ***experimentally*** verify and validate design choices for LCC.
- Motion:

Motion:	Appoint Kyoichiro Asayama from JEOL as co-taskforce leader next to current TF leader Laurens Kwakman
By / 2nd:	By: Shoji Komatsu / Acteon NEXT LLC Second: Laurens Kwakman / LK Semiconductors Consulting Services
Discussion:	None.
Vote:	8-0 in favor. Motion passed.

Next Steps

- All Taskforce members have been informed about the new organization and the proposed restart of the TF activities:
  - all active TF members from across the entire value chain have reacted positively and confirmed their continued active support to our Taskforce mission!
- a next TF meeting will be organized early December 2022 to restart the activities that, unfortunately, have been on hold in the past 7 months…

Recognition & Awards

- The relevance of our Taskforce activities was also confirmed by the SEMI International Standards Excellence Award 2022 that honored the leadership team Richard Young (TFS), Tsuyoshi Onishi (Hitachi), Kyoichiro Asayama (JEOL), Laurens Kwakman and Peter Wagner (consultants)

Attachment: SEMI PIC MEETING 04042023

5.2 *Global PIC Maintenance Task Force (did not meet)*

5.3 *Packaging Tape Frame Handling Task Force (met March 29, 2023)*

Stefan Radloff (Intel) reported for this Task Force. Of note: *{See attachment for images}*

- TF meeting ~monthly starting early 2022 – we are making slow progress…
- Goal: standardize similar carriers that are currently on the market
- Scope:
    - FFF (Film Frame FOUP) – 10mm pitch, 13 capacity FOUP for film frames (ring frames, frame carriers)
    - FFF load port / BOLTS interface
    - updates / clarification to G74
- Initial ballot H1'23

Attachment: SEMI Film-Frame Handling TF Standardization - 11_22 update

5.4 *SEMI E72 Revision Task Force (did not meet)*

Supika Mashiro (TEL) reported for this Task Force. Of note:

The SEMI E72 survey is currently open and will resume meetings after the survey closes.

6 Old Business

None

7 New Business

None.

8 Action Item Review

8.1 New Action Items are noted in Table 11. Previous action items are noted in Table 12 in 'red' and for recent updates in 'blue'. There is no further business.

9 Next Meeting and Adjournment

9.1 The next meeting is tentatively scheduled for the week of July 10-13, in conjunction with SEMICON West 2023. Please check www.semi.org/standards for updates.

Tentative Schedule:

Tuesday, July 11

- 10:00-15:00 with lunch break (*tentative*)
    - *(Requests a 4 hour block)* Packaging Tape Frame Handling TF
- 15:00-16:00, EM Workflow TF

- 16:00-17:00, SEMI E72 Revision TF

Wednesday, July 12

- 09:00-10:00, Global PIC Maintenance TF
- 10:00-12:00 Noon, PIC NA TC Chapter Meeting

Adjournment: 11:03.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

Phone: +1.408.943.7019

Email: lnguyen@semi.org

Minutes tentatively approved by:

Matthew Fuller (Entegris), Co-chair	<Date approved>
Melvin Jung (Intel), Co-chair	<Date approved>

Minutes officially approved by: **PIC NA OVTCCM on XXX.**

Table 13 Index of Available Attachments[#1]

Title	*Title*
Required Element Nov 2020 Rev1	Staff Report March 2023 v3_PIC
[2022Fall] PIC NA TC Chapter Meeting Minutes FINAL	SEMI PIC MEETING 04042023
JA_PIC_Liaison_20230328_r1_ACT_distr	

#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 Laura Nguyen at the contact information above.