Physical Interfaces & Carriers North America TC Chapter

Meeting Summary and Minutes

SEMICON West Standards Meetings 2025

Wednesday, October 8, 09:00 – 12:00 Noon Mountain

Phoenix Convention Center, Phoenix, Arizona/USA, and via Official Virtual TC Chapter Meeting (OVTCCM)

TC Chapter Announcements

Next TC Chapter Meeting

NA Winter Meetings 2026

February TBD

Virtual

Table 1 Meeting Attendees

Italics indicate virtual participants

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

Company	*Last*	*First*	*Company*	*Last*	*First*
Acteon NEXT LLC	*Komatsu*	*Shoji*	*Intel*	*Raman*	*Kartik*
Brooks Automation	*Babbs*	*Daniel*	Intel	Rudolph	John
Daewon	*Sanders*	*Trevor*	Intel	Slinker	Danniel
Eagle Industry	*Sado*	*Daisuke*	JEOL Ltd.	Asayama	Kyoichiro
Entegris	Fuller	Matthew	JEOL Ltd.	Yamazaki	Kazuya
Entegris	Smith	Mark	*Lam Research*	*Gould*	*Richard*
Entegris	Wang	Huaping	*LK Semiconductor Consulting Services*	*Kwakman*	*Laurens*
Hitachi-High Tech	Onishi	Tsuyoshi	Tokyo Electron Limited	Mashiro	Supika
Intel	Jung	Melvin	*UA Associates*	*Hartsough*	*Larry*
Intel	Moroz	Haidyn	SEMI	Hirabara	Takeaki
Intel	Radloff	Stefan	SEMI	Nguyen	Laura

Table 2 Leadership Changes

None

Table 3 Committee Structure Changes

None

Table 4 Ballot Results

Document #	*Document Title*	*TC Chapter Action*
6592	New Standard: Specification for Container for Transport and Storage of Transmission Electron Microscope (TEM) Lamella Carriers within Electron Microscopy Workflows	**Passed**, as balloted.

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

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

Table 5 Ratification Ballot Results

None

NOTE 1: **Passed** Ratification ballots will be submitted to SEMI publication for final processing.

NOTE 2: **Failed** Ratification ballots were returned to the originating task forces for re-work and re-balloting or abandoning.

Table 6 Activities Approved by the GCS between meetings of the TC Chapter

None

Table 7 SNARF(s) Granted a One-Year Extension

None

Table 8 Authorized Ballots

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

#	*When*	*TF*	*Details*
7194	Cycle 9-2025	Film Frame FOUP (FFF) TF	New Standard: Specification for 300 mm Film Frame FOUP Load Port

Table 9 SNARF(s) Granted a One-Year Extension

None

Table 10 SNARF(s) Canceled

None

Table 11 Standard(s) to receive Inactive Status

None

NOTE 1: *Inactive, adj.* — Status of a Standard or Safety Guideline that is not currently supported by the GTC. [*Regulations* ¶ 4.2.19]

Table 12 New Action Items

None

Table 13 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.
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 09:02. 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

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: Melvin Jung / Intel Corporation Second: Haidyn Moroz / Intel Corporation
Discussion:	None.
Vote:	9-0 in favor. Motion passed.

Attachment: [2025Summer] PIC NA TC Chapter Meeting Minutes

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 26, 2025
  - Official Virtual TC Chapter Meeting / SEMI Japan Office (Hybrid)
- Next Meeting:
  - Thursday, December 18, 2025
  - Official Virtual TC Chapter Meeting / Meeting / TFT Building, conjunction with SEMICON Japan 2025 (Hybrid)

Leadership Changes: None

Committee Structure Changes: New Task Force formed

- 310 mm Square Panel FOUP Task Force

Organization Chart (*refer to attachment)*

Ballot Results

Document #	*Document Title*	*TC Chapter Action*
7373	Line Item Revision to SEMI E182-0424 - Specification for Panel FOUP Loadport for Panel Level Packaging	**Failed**
7374	Revision to add a new Subordinate Standard: *Specification for Panel FOUP Load Port With Ground Based Delivery Exclusion Volume* to: SEMI E182-0424, *Specification For Panel FOUP Loadport for Panel Level Packaging*	**Passed**

Activities Approved via GCS between Meetings

Doc #	*Type*	*SC/TF/WG*	*Title / Details*
7373	SNARF	Panel Level Packaging (PLP) Panel FOUP TF	Line Item Revision to SEMI E182-0424 - Specification for Panel FOUP Loadport for Panel Level Packaging
7374	SNARF	Panel Level Packaging (PLP) Panel FOUP TF	Revision to add a new Subordinate Standard: SPECIFICATION FOR PANEL FOUP LOAD PORT WITH GROUND BASED DELIVERY

Doc #	*Type*	*SC/TF/WG*	*Title / Details*
			EXCLUSION VOLUME to SEMI E182-0424 SPECIFICATION FOR PANEL FOUP LOADPORT FOR PANEL LEVEL PACKAGING
7375	SNARF	Next Gen Assembly / Test Material Handling TF	New Preliminary Standard: Specification for Large Tray Stack FOUP (LTSF)
7373	Ballot Cycle 6, 2025	Panel Level Packaging (PLP) Panel FOUP TF	Line Item Revision to SEMI E182-0424 - Specification for Panel FOUP Loadport for Panel Level Packaging
7374	Ballot Cycle 6, 2025	Panel Level Packaging (PLP) Panel FOUP TF	Revision to add a new Subordinate Standard: SPECIFICATION FOR PANEL FOUP LOAD PORT WITH GROUND BASED DELIVERY EXCLUSION VOLUME to SEMI E182-0424 SPECIFICATION FOR PANEL FOUP LOADPORT FOR PANEL LEVEL PACKAGING

Authorized Activities

#	*Type*	*SC/TF/WG*	*Details*
	SNARF	Panel Level Packaging (PLP) Panel FOUP TF	Line item revision to SEMI E181.1 — Specification for Panel FOUP for 510 to 515 mm Panel Size and 12 Slots, SEMI E181.2 — Specification for Panel FOUP for 510 to 515 mm Panel Size and 6 Slots, SEMI E181.3 — Specification for Panel FOUP for 600 to 600 mm Panel Size and 12 Slots and SEMI E181.4 — Specification for Panel FOUP for 600 to 600 mm Panel Size and 6 Slots
	SNARF	310mm Square Panel FOUP TF	New Standard: Specification for 310mm Square Panel FOUP

Other Activities Outside the Letter Ballot Process

#	*Type*	*SC/TF/WG*	*Details*
7375	Preliminary Standard	Next Gen Assembly / Test Material Handling TF	New Preliminary Standard: Specification for Large Tray Stack FOUP (LTSF) : Passed → Proceed with the GCS approval

Authorized Ballots

#	*When*	*SC/TF/WG*	*Details*
7373A	Cycle 9, 2025	Panel Level Packaging Panel FOUP TF	Line Item Revision to SEMI E182-0424 - Specification for Panel FOUP Loadport for Panel Level Packaging
	Cycle 9, 2025	Panel Level Packaging Panel FOUP TF	Line item revision to SEMI E181.1 — Specification for Panel FOUP for 510 to 515 mm Panel Size and 12 Slots, SEMI E181.2 — Specification for Panel FOUP for 510 to 515 mm Panel Size and 6 Slots, SEMI E181.3 — Specification for Panel FOUP for 600 to 600 mm Panel Size and 12 Slots and SEMI E181.4 — Specification for Panel FOUP for 600 to 600 mm Panel Size and 6 Slots

Open SNARFs

Doc #	*TF*	*Document Title/Details*	*Expiration Date*
7332	Next Gen Assembly / Test Material Handling Task Force	New Standard: Specification for Next Gen Assembly / Test Carrier	February 2028

SNARF(s) Cancelled

#	*TF*	*Title*
7172	Next Gen Assembly / Test Material Handling TF	New Standard: Specification for Next Gen Assembly / Test Carrier
7333	Panel Level Packaging (PLP) Panel FOUP TF	Revision to add a new Subordinate Standard, SPECIFICATION FOR PANEL FOUP LOADPORT GROUND BASED VEHICLE DELIVERY EXCLUSION VOLUME to SEMI E182 SPECIFICATION FOR PANEL FOUP LOADPORT FOR PANEL LEVEL PACKAGING

Five-Year Review: *None*

Task Force Highlights

Global PIC Standards Maintenance Task Force

- No activity

Japan Electron Microscopy Workflow liaison TF

- Next Meeting: October 7 (SEMICON West)
- The Draft document of Lamella Carrier Container (Doc.6592) submitted in ballot Cycle 7th .
- This ballot closed on September 13th.
    - Voting Interest 79
    - Voting return 51 (voter turnout : 65%)
    - Accept 37 (1 comment)
    - Abstain 14
    - Negative 0

    Ballot Passed !
- We move to develop next Draft Document “Lamella Carrier Shipping Box”.
- Prototyping Plan for Resin LCC
    - Activities to Date (Hitachi & JEOL)
        - Two precision resin mold manufacturers in Japan were visited and investigated,and a manufacturer in Kyoto was selected (Miyoko Tech Co.).
        - Requests can be made for the creation of drawings (CAD models), and orders can be placed for compilation work, including ID writing..
        - Conductive resin materials were discussed, samples were reviewed, and several options were shortlisted (final decision pending).
        - The LC adsorption mechanism option within the LCC will not be included.

          The lid will be fixed with magnets.
    - Future Plans
        - October : Request the creation of drawings after completing the standard documents.

          → Prototype the resin LCC.
        - The prototyping costs will be shared equally between Hitachi and JEOL.

Joint Report of Panel Level Packaging(PLP) Panel FOUP TF and Next Gen Assembly / Test Material Handling TF

- Doc.7373(NGAT-TF)
    - Line-Item Revision to SEMI E182-0424 - Specification for Panel FOUP Loadport for Panel Level Packaging

    ➔7373 will be reworked and Request TC approval the ballot submission for cycle 9 as Doc.7373A.
- Doc.7374(Panel FOUP TF)

- Revision to add a new Subordinate Standard: SPECIFICATION FOR PANEL FOUP LOAD PORT WITH GROUND BASED DELIVERY EXCLUSION VOLUME to SEMI E182-0424 SPECIFICATION FOR PANEL FOUP LOADPORT FOR PANEL LEVEL PACKAGING

➔Request TC approval at JA-PIC.

- Doc.7375(Panel FOUP TF)
  - New Standard: Preliminary Specification for Large Tray Stack FOUP (LTSF)

➔Request TC approval at JA-PIC with three amendments.

- Doc.7ABC(Panel FOUP TF)
  - Line-Item Revision to SEMI E181.1 — Specification for Panel FOUP for 510 to 515 mm Panel Size and 12 Slots, SEMI E181.2 — Specification for Panel FOUP for 510 to 515 mm Panel Size and 6 Slots, SEMI E181.3 — Specification for Panel FOUP for 600 to 600 mm Panel Size and 12 Slots and SEMI E181.4 — Specification for Panel FOUP for 600 to 600 mm Panel Size and 6 Slots

➔Request JA-PIC TC to approve the SNARF and ballot submission for cycle 9.

Staff Contact: Takeaki Hirabara at thirabara@semi.org

Attachment: JA_PIC_Liaison_Oct2025_rev1

3.2 *SEMI Staff Report*

SEMI Global 2025 & 2026 Calendar of Events

- SEMCON West (Oct 7-9; Phoenix, Arizona)
- SEMICON Europa (Nov 18-21; Munich, Germany)
- SEMICON Japan (December 17-19; Tokyo, Japan)
- SEMICON Korea (Feb 11-13; Seoul, Korea)
- SEMICON China (March 25-27; Shanghai, China)
- SEMICON Southeast Asia (May 5-7, 2026; Kuala Lumpur, Malaysia)

SEMICON West 2025-2030

2025—October 7-9 | Phoenix Convention Center | Phoenix, AZ
2026—October 13-15 | Moscone Center | San Francisco, CA
2027—October 12-14 | Phoenix Convention Center | Phoenix, AZ
2028—October 10-12 | Moscone Center | San Francisco, CA
2029—October 9-11 | Phoenix Convention Center | Phoenix, AZ
2030—October 29-31 | Moscone Center | San Francisco, CA

Global Standards Summit (GSS) 2025 @ SEMICON West

- Date/Time: Tuesday, October 7 | 1:30 PM to 5:30 PM | North Building, 200 Level, Room 229A
- Theme: Future Standards for Connected & Sustainable Semiconductor Manufacturing
- Session Description: The Global Standards Summit is a strategic forum dedicated to identifying standards-critical areas and advancing an industry-wide standardization roadmap for the next 3- and 7-year horizons. Building on the momentum of the inaugural Summit—which spotlighted essential topics such as environmental sustainability—this year's gathering continues that dialogue while expanding focus to include emerging challenges like supply chain traceability.
- With increasing fragmentation across the global microelectronics supply chain driven by geopolitical and other disruptive forces, the need for unified standards is more critical than ever. This Summit provides a timely opportunity to convene, collaborate, and identify the standards that will address these challenges and foster greater industry alignment. We encourage you to join, engage, and help shape the future of standards.
- https://www.semiconwest.org/programs/global-standards-summit

Workshops @ SEMICON West 2025

- SEMI Liquid Chemicals Analytical Workshop
  - Description: Focusing on recent advances in analytical methodology and instrumentation
  - Wednesday, October 8, 09:00-11:30 (North Bldg | Room 229B)
- Enhancing Voltage Sag Immunity: SEMI F47 Standard Updates & Insights
  - Description: Delivering practical recommendations to enhance the SEMI F47 standard and increase tool resilience in future designs, with a focus on power quality conditions, equipment susceptibility, testing approaches, and mitigation strategies.
  - Wednesday, October 8, 14:30-16:30 (North Bldg | Room 229B)
- Semiconductor Device Manufacturing in a Cleanroom (Best Practices to Improve Product Reliability and Yield) [SEMIU]
  - Description: Provides the fundamentals and thought processes to improve your production reliability & yield.
  - Thursday, October 9, 8:00 AM - 4:00 PM (North Bldg | 200 Level)

Upcoming NA Meetings 2025 (Proposed)

- NA Standards Winter Meetings: Feb 23-26, 2026 (tentative), at SEMI HQ, Milpitas, California/USA
- NA Spring Meetings (in conjunction with ASMC): May 11-14, 2026, Hilton Albany, New York
  - *{refer to attachment for additional information on ASMC}*
- SEMICON West Meeting: Oct 12-15, 2026, at Moscone Center, San Francisco, CA/USA

2025 Critical Dates for SEMI Standards Ballots

- Cycle 8-2025: Ballot Submission Due: Sept 3/Voting Period: Sept 24 – Oct 24
- Cycle 9-2025: Ballot Submission Due: Oct 14/Voting Period: Oct 29 – Nov 28

2026 Critical Dates for SEMI Standards Ballots *(Tentative)*

- Cycle 1-2026: Ballot Submission Due: Dec 16/Voting Period: Jan 7 – Feb 6
- Cycle 2-2026: Ballot Submission Due: Jan 23/Voting Period: Feb 11 – Mar 13
- Cycle 3-2026: Ballot Submission Due: Mar 5/Voting Period: Mar 18 – Apr 17
- Cycle 4-2026: Ballot Submission Due: Mar 30/Voting Period: Apr 14 – May 14
- Cycle 5-2026: Ballot Submission Due: May 8/Voting Period: May 27 – June 26

https://www.semi.org/en/collaborate/standards/ballots

Standards Publications Report

Cycle	*New*	*Revised*	*Reapproved*	*Withdrawn*
May 2025	0	5	4	0
June 2025	1	0	0	0
July 2025	1	4	0	0
August 2025	0	1	0	0
September 2025	4	1	3	0

Total in portfolio – 1,107 (includes 373 Inactive Standards)

New Standards

Cycle	*Designation*	*Title*	*Committee*	*Region*
June 2025	SEMI M94	Specification for Silicon Carbide Engineered Substrates	Compound Semiconductor Materials	EU
July 2025	SEMI E194	Guide to Using a Liquid Particle Counter to Assess Particulate Surface Contamination on Critical Chamber Components and Coupons	Metrics	NA

September 2025	SEMI E195	Test Method Using Adhesive Replacement Substrates to Assess Particulate Surface Contamination on Critical Chamber Components	Metrics	NA
September 2025	SEMI E196	Guide for Equipment Edge Data Governance	Information & Control	TW
September 2025	SEMI M95	Test Method for Net Carrier Density and Resistivity of Silicon Epitaxial Layer by Capacitance-Voltage Measurements with an Evaporated Metal Schottky Diode	Silicon Wafer	JP
September 2025	SEMI T26	Specification for Electronic Supply Chain Traceability Using Distributed Ledger Technology	Traceability	NA

Educational Courses under Development

{EDA} Everything You Need to Know about the SEMI Equipment Data Acquisition (EDA) Standards Suite

- Objective: Introduce EDA standards, best practices for implementation, and addresses concerns about adoption through example use cases
- Course Date: November 20, 2025, in conjunction with SEMICON Europa
- Status: Confirmed, under development

{Subfab} Intro to Sub-fab Course

- Objective: Gain a comprehensive understanding of SubFAB operations, including system components, facility layouts, environmental and sustainability considerations, organizational structure, safety and maintenance best practices, and incident-response preparedness within the semiconductor manufacturing ecosystem.
- Course Date: Early 2026 (2 sessions, EU & Asia friendly)
- Status: Under development

Other courses being considered: SECS/GEM, Seals, Cybersecurity

Interested in shaping future educational courses with us? Please reach out to SEMI staff.

Regulations & Procedure Manual

Regulations (Feb 20, 2024): https://www.semi.org/sites/semi.org/files/2024-02/Standards%20Regulations%20February%2020%202024.pdf

Procedure Manual (July 7, 2025)

- https://www.semi.org/sites/semi.org/files/2025-07/Procedure%20Manual%20July%2007%2C%202025%20v1.pdf
- Noticeable updates:
  - Major revision to multiple Standards
    - New SNARF Form (July 2025)
  - Ballot checklist requirement for Revision to Primary Standard

Five-Year Review

- None

Staff Contact: Laura Nguyen, Lnguyen@semi.org

Attachment: Staff_HQ Report Oct 2025 v4_distr

4 Ballot Review

NOTE 3: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment number for each balloted document is provided under each ballot review section below.

4.1 Document 6592 — New Standard: Specification for Container for Transport and Storage of Transmission Electron Microscope (TEM) Lamella Carriers within Electron Microscopy Workflows

- The ballot passed TC Chapter review as balloted. Refer to the attachment for ballot adjudication.

Attachment: 6592_ProceduralReview

5 Subcommittee and Task Force Reports

5.1 *Electron Microscopy Workflow Task Force*

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

Activity Update

- Since June 2025, the Taskforce has continued to advance the LCC specifications through focus team and taskforce meetings and has submitted a finalized version of the LCC Standard for review in Ballot cycle #7
    - In June a final critical review was done at TF-level and P. Wagner issued a final document 6592 V2.2 for a last approval cycle and a vote for submission in the TF meeting on July 8, 2025.
    - Doc 6592 V2.3 was submitted for Ballot cycle #7 on July 21. The document passed the review with no negatives and only one minor comment.
- Progress made in July - October 2025 period.
    - After the Document submission in July and a short summer break, TF activities were restarted on August 26 with a renewed focus on the LC Shipping container Standardization:
    - The LCSC will be a simplified version of the LCC with a 4x higher LC capacity and –at least initially- based on manual operation (operator assisted lid opening and LCSC placement on LC transfer system).
    - The Standard will define a minimum set of specifications, needed to guarantee inter-operability between the different systems in an automated TEM workflow.
    - A high level definition of the LCSC has been elaborated and is currently under review at TF level.
    - The initial choice is to use a lid that will be opened vertically (manually): simpler and more cost-effective, but experimental tests are needed to check the reliability of these preferred design choices!
- LCC specifications have been discussed. *'phase of high-level design choices…" {refer to attachment for images}*

LCC Standard in Ballot cycle #7

- The ballot review cycle was closed on September 12, 2025: Doc 6592 PASSED the review
- For today' PIC TC meeting, the Taskforce Response to Larry Hartsough comment is:
- "The TF will continue with testing of LCC prototypes and based on experimental findings the current LCC Standard will be modified to adapt to new findings and insights. These modifications may include also simplifications in ordering information!
- Potential simplifications include:
    - No need for vacuum manifold
    - Plastic i.o. metal LCC as preferred choice with mechanical lid locking (no magnets)
    - Industry turns to use of half-moon LCs and abandons the 3mm grid LCs"

Summary and Planning 2025 activities

- Aiming at a LCC Standards document ready for Ballot before end Q1 2026
- *We have completed the Standardization activity for the LCC, Doc 6592*
- The Japanese microscopy suppliers will conduct LCC / LCSC prototype testing:
    - Design and manufacturing of LCC / LCSC prototypes — Q3-Q4, 2025
    - Start prototype testing of LCC and LCSC and translate learning into SEMI Standard revisions – if and where needed. — Q1 2026

- Continue work on Standard for LC shipping box Q4 2025 – Q1 2026
  LC shipping container SNARF and Doc 6832
  - First draft Doc 6832 available from P. Wagner based on Q3 reviews October 28, 2025
  - Work-out all technical details and define LCSC specifications in details Q4 2025 – Q1 2026
- LCSC Standard Doc 6832 ready for ballot Before March 31, 2026

Attachment: SEMI EM TF -PIC Update 8 October 2025

5.2 *"6x12" Reticle Carrier & Load Port Task Force*

Daniel Babbs (Brooks Automation) verbally reported for this Task Force on behalf of Huaping Wang (Entegris). Of note:

Subteam & Document Development Update

- About 6 weeks ago, consensus was reached on key features for new standards.
- Two subteams formed: Pod-focused team, Load port-focused team
- Approach: Documents modeled after existing FOUP/load port standards (similar format to 450mm standards).
- Merging older standards: E19.4, and reticle standards (E100, E117)
  - Have to recreate figures (source docs unavailable)
  - Reviewed initial figures (E15 equivalents) 3 weeks ago; feedback incorporated.
- Recent review: SMIF interface details adjusted for 12-inch reticle orientation.
- Next steps: Finalize text sections, references, and dimension updates.
- Proposed overall FOUP size and hold-down positions
- Latching/unlatching and registration pins remain unchanged (same as 6x6 interface).
- Meetings
  - Subteams: Frequent meetings + email exchanges.
  - Main task force: Every 4 weeks; next meeting Nov 3.
- Pending Item: ASML owes feedback on reticle specification; not critical now but must be finalized later.

5.3 *SEMI E72 Revision Task Force*

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

TF roster and meeting attendance *{refer to attachment}*

Activities from NA Fall Standards meeting and today

- The TF has continued on disposition of Negatives/Comments received on the ballot (Doc.#7195) and reflected to the CoC Table.
  - Most of Negatives and Comments have been resolved.
- TF has been working on Document #7298. It aims to address different type of Fab by separating specs for older/newer Fabs.
  - New Table 2 was proposed. → Detailed justification is requested by intel participant.
  - New restricted volumes in front of equipment have been agreed in principle, need more work for figure and explanatory text including terminology

Next Actions

- Plan of TF meetings
- Bi-weekly meeting 16:00-17:00 Wednesday (PT) is planed until we finish with dispositioning Negatives / Comments and become ready for sending Document #7298 as a Letter Ballot.
- Next meeting is planned on October 15

Attachment: E72Revision TF Report to NAPIC TC_20251008

5.4 *Film Frame FOUP Task Force*

Stefan Radloff (Intel) reported for this Task Force verbally. Of note:

- E193 FFF passed / published. No current plans / requests to update.
- Doc 7194, FFF Loadport ready to ballot: Motion to ballot for cycle 9
- Based on 10/7 TF feedback, doc updated to removed C2 dimension – overlaps (and conflicts by 1mm) D1 dimension
- Open: Would like to review / adjudicate at Semicon Japan 12/25. Update TF TFOF to make this TF a "global" TF?
- TF discussion: not possible for this cycle - requires a TFOF update that must be approved by both TCs (at in person mtg) + GCS approval. Timing does not allow this. Will plan adjudicate at a virtual meeting.
- Motion to authorize ballot:

Motion:	Authorize the Document for Letter Ballot 7194, New Standard: Specification for 300 mm Film Frame FOUP Load Port, in Cycle 9, 2025.
By / 2nd:	By: Stefan Radloff / Intel Second: Shoji Komatsu / Acteon NEXT LLC
Discussion:	None
Vote:	8-0 in favor. Motion passed.

Attachment: FFf NGAT Semicon West 2025 TF update

5.5 *JA Next Gen Assembly / Test Material Handling Task Force*

Stefan Radloff (Intel) reported for this Task Force. Of note:

- E182 ballot failed for procedural issues (background statement did not contain the correct information)
  - Approval from Japan PIC to reballot for cycle 9
  - E182.3 ballot with technical details passed!
- Large Tray Stack FOUP (LTSF) provisional standard passed by Japan PIC committee
  - Includes multiple dimensional options that will be tested / evaluated at Intel + SATAS consortia
- Ongoing
  - "Load port" interface for tray stacks for large (JEDEC Bx) trays
  - Next Gen Handoff – E84 over TCP/IP

Attachment: FFf NGAT Semicon West 2025 TF update

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

Larry Hartsought (UA Associates) reported for this Task Force verbally. Of note:

- Since there is no Five-Year review, there is no report.

5.7 *Integrated Workflows in Failure Analysis TF (have not met)*

There is no report at this time.

6 Old Business

No old business.

7 New Business

7.1 *Communication Gap on New Tray Size Standard*

Trevor Sanders (Daewon) brought this topic up to the Committee. Of note:

- A new generic tray size proposal was approved by SEMI Taiwan (3D IC committee), but other committees were unaware.
- Concern: Lack of communication between committees (PIC, 3D IC, etc.).
- Action:
    - SEMI will coordinate a joint update meeting with PIC and 3D IC committees.
    - Task force members requested access to the ballot draft for review.

7.2 *Topics brought up at the NARSC meeting*

Matt Fuller (Entegris) brought this topic up to the Committee. Of note:

Five-Year Review

- Liquid Chemicals proposed to do away with the Five-Year Review or change the cadence.
    - Takes up a lot of volunteer hours to revise a document purely on procedural manual updates.

"Inactive" Standards Terminology Discussion

- Issue: The term "Inactive" on SEMI standards creates confusion; users assume the document is irrelevant.
- Discussion Points:
    - Alternative terms suggested: "Stabilized" (used by ISO), "Mature", or similar.
    - Changing terminology requires formal proposal and review by SEMI Regulations (Regs).
    - Publications team faces challenges updating thousands of documents retroactively.
- Consensus:
    - Open discussion for better wording to maintain relevance and clarity.
    - Concerns about the term 'inactive' for standards, as it implies irrelevance.
    - Proposal to use 'stabilized' instead of 'inactive,' similar to ISO terminology.
    - Challenges in updating terminology across all existing documents.

8 Action Item Review

8.1 No New Action Items. 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 An off cadence OVTCCM is tentatively scheduled for December 2025 TBD, Pacific Time, to review the ballot out of the Film Frame FOUP TF. Any summary updates to TFs may also be presented at this meeting.

9.2 The next meeting is tentatively scheduled for the week of February 9-12, 2026, and will be held fully virtual. Please check the SEMI Standards website for updates: https://www.semi.org/en/products-services/standards

Adjournment: 11:12.

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	December 11, 2025
Melvin Jung (Intel), Co-chair	December 11, 2025

Minutes officially approved by: **PIC NA OVTCCM on December 11, 2025.**

Table 14 Index of Available Attachments[#1]

Title	*Title*
Required Meeting Elements March 2024	6592_ProceduralReview
[2025Summer] PIC NA TC Chapter Meeting Minutes	SEMI EM TF -PIC Update 8 October 2025
JA_PIC_Liaison_Oct2025_rev1	E72Revision TF Report to NAPIC TC_20251008
Staff_HQ Report Oct 2025 v4_distr	FFf NGAT Semicon West 2025 TF update

#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.