



## Physical Interfaces & Carriers North America TC Chapter

### Meeting Summary and Minutes

SEMICON West Hybrid Standards Meetings 2022

Wednesday, July 13, 10:00 – 12:00 Noon Pacific

Moscone Center, San Francisco, California, and via Official Virtual TC Chapter Meeting (OVTCCM)

#### TC Chapter Announcements

*Next TC Chapter Meeting*

NA Standards Fall Meetings 2022

Wednesday, November 9, 10:00 – 12:00 Noon Pacific

SEMI Global Headquarters, Milpitas, California/USA

#### Table 1 Meeting Attendees

*Italics indicate virtual participants*

**Co-Chairs:** Matt Fuller (Entegris), Melvin Jung (Intel)

**SEMI Staff:** Laura Nguyen

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Acteon NEXT Corporation	Komatsu	Shoji	<i>Self</i>	<i>Wagner</i>	<i>Peter</i>
<i>Brooks Automation</i>	<i>Babbs</i>	<i>Daniel</i>	Sinfonia Technology	Atsushi	Suzuki
Entegris	Fuller	Matthew	Sinfonia Technology	Nakamura	Hiroaki
<i>Intel</i>	<i>Jung</i>	<i>Melvin</i>	Tokyo Electron Limited	Mashiro	Supika
<i>Intel</i>	<i>Radloff</i>	<i>Stefan</i>	<i>Thermo Fisher Scientific</i>	<i>Young</i>	<i>Richard</i>
NAURA	Cao	Clark	UA Associates	Hartsough	Larry
<i>Nordson SONOSCAN</i>	<i>Martell</i>	<i>Steve</i>			
<i>Self</i>	<i>Kwakman</i>	<i>Laurens</i>	SEMI	Nguyen	Laura

#### Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leader</i>
Electron Microscopy Workflow Task Force	Richard Young (Thermo Fisher Scientific) <i>[Stepped down]</i> Laurens Kwakman (Self)	Laurens Kwakman (Self)

#### Table 3 Committee Structure Changes

None

#### Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
6918	Line-Item Revision to SEMI E63-0616, Specification for 300 mm Box Opener/Loader to Tool Standard (BOLTS-M) Interface	
L1	Replace “must” and “are to” with “shall” where needed in Section 5.	<b>Passed</b>



<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
L2	Divide paragraphs in Section 5 such that each paragraph contains only one Requirement.	<b>Passed</b> , with editorial changes.
L3	Properly express negative Requirements in Section 5.	<b>Passed</b>

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 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**

None

**Table 9 SNARF(s) Abolished**

None

**Table 10 Standard(s) to receive Inactive Status**

None

**Table 11 New Action Items**

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2022July#01	Larry Hartsough	Provide tutorial for Inactive Standards.

**Table 12 Previous Meeting Action Items**

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2022Mar#01	Larry Hartsough	Larry to check Five-Year docs for “must”, “shall”, and other PM related items. <b>Ongoing.</b>
2022Mar#02	Laura Nguyen	Laura to check internally to share top formatting examples to TF leaders. <b>Ongoing.</b>
2022Mar#03	Stefan Radloff	Prepare another SNARF for LoadPort, possibly by West. <b>Ongoing.</b>
2017April#04	Laura Nguyen	To identify which documents under the global task force, belong to which committees. <b>Ongoing. Unsure how this should be done.</b>

**1 Welcome, Reminders, and Introductions**

Matt Fuller (Entegris) called the meeting to order at 10:05. 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 / 2<sup>nd</sup>:** By: Shoji Komatsu / Acteon NEXT LLC  
Second: Steve Martell / Nordson SONOSCAN
- Discussion:** None.
- Vote:** 8-0 in favor. Motion passed.

**Attachment:** [2022Spring] 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
  - May 27,2022 (Official Virtual TC Chapter Meeting/ SEMI Japan Office (Hybrid))
- Next Meeting:
  - September 2, 2022 (Official Virtual TC Chapter Meeting/ SEMI Japan Office (Hybrid))

Organization Chart (See attachment)

#### Ballot Results

### Ballot Results



Doc #	Document Title	TC Chapter Action
6895	Line Item Revision to SEMI E185 -1221, Specification for 300 mm Tape Frame FOUN	
LI-1	Make a change in section 5.2.20 as indicated	<b>Passed</b> as ballot
6897	Revision to SEMI E92 -0302E, Specification for 300 mm Light Weight and Compact Box Opener/Loader To Tool - Interoperability Standard (Bolts/Light)	<b>Passed</b> with Technical Changes. Ratification will be issued.

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.



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#### Authorized Activities

Doc #	Type	SC/TF/CFG	Document Title/Details
TBD	SNARF	Panel Level Packaging Panel FOUN Task Force	Revision of SEMI E182-0621 - Specification for Panel FOUN Loadport for Panel Level Packaging

### Authorized Ballots

Doc #	When	TF	Document Title/Details
TBD	Cycle06/07-2022	Panel Level Packaging Panel FOUN Task Force	Revision of SEMI E182-0621 - Specification for Panel FOUN Loadport for Panel Level Packaging

### 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

### Task Force Highlights

- Panel Level Packaging(PLP) Panel FOUN TF  
【FOUP】
- Waiting for the publication of line-item Ballot 6750, 6751 and 6752
- The FOUN standard required many modifications due to the indication of KLA-Eric.
- (#6898,6899,6900,6901,6902) submitted to Cycle4 2022(Now voting)
- SEMI E181 - 0321 —Specification for Panel FOUN for Panel Level Packaging
- SEMI E181.1 - 0321 —Specification for Panel FOUN for 510 to 515 mm Panel Size and 12 Slots
- SEMI E181.2 - 0321 —Specification for Panel FOUN for 510 to 515 mm Panel Size and 6 Slots
- SEMI E181.3 - 0321 —Specification for Panel FOUN for 600 to 600 mm Panel Size and 12 Slots
- SEMI E181.4 - 0321 —Specification for Panel FOUN for 600 to 600 mm Panel Size and 6 Slots

#### 【Loadport】

- The Panel FOUN Loadport standard, including two subordinate standards, was published in June,2021.
- SEMI E182 -0621 — Specification for Panel FOUN Loadport for Panel Level Packaging
- SEMI E182.1-0621 — Specification for Panel FOUN Loadport for 510 to 515 mm Panel Size
- SEMIE182.2-0621 — Specification for Panel FOUN Loadport for 600 to 600 mm Panel Size

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

**Attachment:** JA\_PIC\_Liaison\_20220613\_v1.0

### 3.2 SEMI Staff Report

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

#### SEMI Global 2022 Calendar of Events

- SEMICON West (July 12-14; San Francisco, CA/USA)
- SMEICON Taiwan (Sept 14-16; Taipei, Taiwan)
- SEMICON Europa (Nov 15-17; Munich, Germany)
- SEMICON Japan (December 15-17; Tokyo, Japan)

#### Upcoming NA Meetings

- NA Standards Fall Meetings
  - November 7-10, 2022 (Tentative) at SEMI HQ, Milpitas, California/USA



Critical Dates for SEMI Standards Ballots

- Cycle 6-2022: Ballot Submission Due: July 26/Voting Period: Aug 9 – Sept 8
- Cycle 7-2022: Ballot Submission Due: Aug 30/Voting Period: Sept 13 – Oct 13
- 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

Critical Dates: <http://www.semi.org/en/Standards/Ballots>

Standards Publications Report

<i>Cycle</i>	<i>New</i>	<i>Revised</i>	<i>Reapproved</i>	<i>Withdrawn</i>
March 2022	0	1	8	0
April 2022	2	7	3	0
May 2022	0	1	1	0
June 2022	2	8	6	0

Total in portfolio – 1,064 (includes 320 Inactive Standards)

New Standards

<i>Cycle</i>	<i>Designation</i>	<i>Title</i>	<i>Committee</i>	<i>Region</i>
April 2022	SEMI E132.2	Specification for 300 mm Tape Frame FOUP Load Port	Information & Control	NA
April 2022	SEMI MS14	Guide for Critical Parameters of Gas Sensors	MEMS/NEMS	NA
June 2022	SEMI C104	Guide for Reporting Performance Parameters of the Polymer Windows for Chemical Mechanical Planarization (CMP) Pads Used in Semiconductor Manufacturing	Liquid Chemicals	NA
June 2022	SEMI M91	Test Method for Determination of Threading Screw Dislocation Density in 4H-SiC by X-Ray Topography	Compound Semiconductor Materials	EU

Inactive Standards

<i>Committee</i>	<i>Number of Inactive Standards</i>
Assembly & Packaging	78
Automated Test Equipment	2
Compound Semiconductor Materials	4
Environmental Health & Safety	8
Facilities	14
FPD – Equipment	5
FPD – Factory Automation	14
FPD – Materials & Components	18
Gases	18
Information & Control	38
Liquid Chemicals	29
MEMS	4
Metrics	12
Micropatterning	30
Photovoltaic	3



Physical Interfaces & Carriers	27
Silicon Wafer	12
Traceability	8

Five-Year Review

Designation #	Standard Title	Action By	Original TF assigned to:
SEMI E117-0117	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 July 2022 v7\_PIC

**4 Ballot Review**

NOTE 1: 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 # 6918, Line-Item Revision to SEMI E63-0616, Specification for 300 mm Box Opener/Loader to Tool Standard (BOLTS-M) Interface

4.1.1 Line Item #1, Replace “must” and “are to” with “shall” where needed in Section 5.

- The ballot passed TC Chapter review as balloted. See attachment for ballot adjudication.

4.1.2 Line Item #2, Divide paragraphs in Section 5 such that each paragraph contains only one Requirement.

- The ballot passed TC Chapter review with editorial changes. See attachment for ballot adjudication.

4.1.3 Line Item #3, Properly express negative Requirements in Section 5.

- The ballot passed TC Chapter review as balloted. See attachment for ballot adjudication.

**Attachment:** 6918\_ProceduralReview

**5 Subcommittee and Task Force Reports**

5.1 *Electron Microscopy Workflow Task Force*

Richard Young (Thermo Fisher Scientific) reported for this Task Force. Of note *{See attachment for images}*:

Agenda

- Activity update since March 30, 2022, PIC meeting
  - SEMI E177 (LC Standard) related activities
  - Phase 2, Doc. 6592 (LCC Standard), Doc. 6832 (Shipping Container) related activities
- Key announcement!



- Thermo Fisher has made the decision to stop leading the EM Workflow Task Force and to suspend direct involvement in the creation of a SEMI Standard for the LCC / shipping container.
- As a result, Richard Young will be stepping down as Task Force Leader.
- Purpose of this presentation is to summarize the status of Task Force

#### Activity Update

- SEMI E177 (LC Standard) related activities: *{See attachment for images}*
  - One practical limitation has been identified with the 3mm grid LCs:
  - When a laser marked LC is coated with a thin carbon foil, the ID mark read-out quality is low due to optical disturbances induced by the presence of the foil
  - ID marks at the bottom side of the LC are judged non-practical (too complex!) and therefore, alternative solutions have been researched, proposed and tested
- Activity Summary
  - Japanese TF liaison (JEOL/Hitachi/KEYENCE) with Protochips in the USA.
    - Previously proposed new workflow: half-strip carbon film to expose ID mark
      - After second round of testing there remained concerns about ID reading quality due to etch pits, and about overall manufacturability of the new process
      - → Alternative needed (or more work on reliability/manufacturability of the process)
    - New proposal – use through-holes for ID mark of carbon-foil coated LCs
      - Allows high-contrast ID reading using back lighting (see March presentation)
      - **It was agreed to abandon the half-strip carbon film method (reported in March)**
      - **Consensus that ID readout from front for both 3mm grid LC and half-moon LC**
      - **TF determined that no update to E177 Standard is required**

#### Status Summary

- Document archive
  - TF meetings and documents archived on Connect @ SEMI
  - Reference: [Electron Microscopy Workflow Task Force - North America - SEMI](#)
- SEMI E177 (LC Standard)
  - No update to Standard required at this time
- Doc. 6592 (LCC Standard)
  - Draft document (v0.3) reviewed within TF and archived (Connect @ SEMI – January 2022 folder)
  - Further design ideas discussed within Focus Teams and Task Force – summarized in Task Force meeting presentations
- Doc. 6832 (Shipping Container)
  - Initial discussions complete (during 2021) – similarities/differences to LCC identified (summarized in Task Force meeting presentations)
- Personally, I have very much valued the cooperative approach between the different groups in the Task Force, and I have really appreciated the support from SEMI (especially Laura) and from fellow TF members - in

particular, Loek Kwakman, Peter Wagner, Onishi-san and Asayama-san, plus Troy Morrison for kicking off the TF initially.

## Challenges and Achievements SEMI Standards Task Force

Source: SEMICON Europa, November 16, 2021 Young and Kwakman

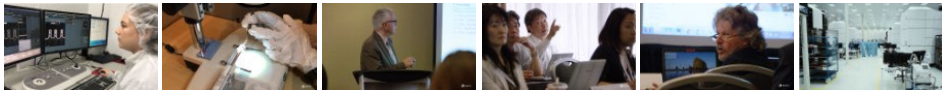
### Challenges and Achievements SEMI Standards Task Force

#### Challenges

- **“Coopetition”**: how to establish cooperation between competing TEM suppliers , JEOL, Hitachi, Thermo Fisher,... and between customers
- **Standardization takes time**: Collecting all inputs from the different stakeholders and getting consensus and alignment on requirements and specifications may take one year or more...
- **Exchange** between TEM end -users and TEM suppliers: IC manufacturers are reluctant to disclose details about their internal working methods in “Public”

#### Achievements

- Meeting in a neutral SEMI HQ setting helps to foster personal contacts. **Building mutual trust over the last 3 years** was key to get the technical discussions going in the focus teams!
- Many taskforce members have actively contributed with presentations and discussions but also with **active experiments** to test concepts. Information exchange can be well controlled in the SEMI Standards environment
- IC manufacturers did provide relevant inputs via an **anonymous** Customer survey prepared by the Taskforce but **executed through SEMI Headquarter** in Q4 2020. **SEMI hosted surveys are effective!**



 **STANDARDS**

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**Attachment:** SEMI EM TF - PIC Update 13 July 2022

### 5.2 Global PIC Maintenance Task Force

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

#### TF Status

- JA Leader: Shoji Komatsu – Acteon NEXT
- NA Leader: Larry Hartsough – UA Associates
- Current NA activity on 5-year review
  - E63 (BOLTS-M): Line Item Ballot for Adjudication
  - E72 (Equipment Footprint, Hgt & Wgt): SNARF for Major Revision Ballot & TFOF formed at NA Spring Meetings 2022.
- Current JA activity on 5-year review
  - E92 (Bolts/Light): Doc. 6897, passed, awaiting Ratification Ballot
  - E84 (Carrier Handoff Parallel I/O Interface): Reapproval Ballot will be held at JA-PIC in September
- Results for Current NA Letter Ballots
  - Document 6918
    - LI 1 Result: Super Clean
    - LI 2 Result: 1 Accept Comments \_Daifuku - Suzuki, Tomoko
      - The word 'mate' in Section 5.1 may need to be replaced with a non-biased term. (Speaking of biased terms, 'see' in Figure 1 may need to be replaced to 'refer to').
      - Recommendation: two editorial changes (see next slide)
    - LI 3 Result: Super Clean
- Proposed Editorial Changes to SEMI E63
  - #1 First sentence in Section 5.1  
FROM



- 5.1 Datum Planes — The physical alignment mechanism for the box consists of features (not specified in this Standard) on the box that mate with three or six pins underneath as defined in SEMI E57.

TO

- 5.1 Datum Planes — The physical alignment mechanism for the box consists of features (not specified in this Standard) on the box that kinematically couples with three or six pins underneath as defined in SEMI E57.

- #2 900 (mm) dimension label in Figure 1

FROM

- (900 mm, see SEMI E15.1)

TO

- (900 mm, per SEMI E15.1)

- Standards for Next 5-Year Review

- SEMI E19 Specification for Standard Mechanical Interface (SMIF) [1991]
- SEMI E19.1 Specification for 100 mm (4 in.) Port for Standard Mechanical Interface (SMIF) [1991]
- SEMI E19.2 Specification for 125 mm (5 in.) Port for Standard Mechanical Interface (SMIF) [1991]
- SEMI E19.3 Specification for 150 mm (6 in.) Port for Standard Mechanical Interface (SMIF) [1991]
- SEMI E19.4 Specification for 200 mm Standard Mechanical Interface (SMIF) [1992]
- SEMI E111 Specification for a 150 mm Reticle SMIF Pod (RSP150) Used to Transport and Store a 6 Inch Reticles [2001]
- SEMI E112 Specification for a 150 mm Multiple Reticle SMIF Pod (MRSP150) Used to Transport and Store Multiple 6 Inch Reticles [2001]
- SEMI E117 Specification for Reticle Load Port [2002]

[date originally published]

**Attachment:** PIC SMTF Report July 2022\_ACT

### 5.3 Packaging Tape Frame Handling Task Force...

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

Help Needed: Name?

- FFF – Film Frame FOUN
- ➔ FFF – Film Frame FOUN

Carrier / Load Port Key Attributes

- Carrier
  - Enclosed
  - 10mm pitch / 13 frame capacity
  - carrier ID zone (RFID and/or BCR)
  - wafer handing internal pickup zones
  - Aligns with 300mm FOUN standards where possible
    - bottom features: KC pins, carrier sensing, hold down, conveyor rail
    - auto handling flange



- FIMS interface – adjust Z key / reg pin position only
- “reuse” datum planes: HDP, BDP, FDP
- info pads?
- purge port location(s)
- Load Port
  - Aligns with 300mm LP standards where possible
    - BOLTS compliant
    - 505mm BDP-BDP pitch
    - Match E15.1 D dim 250 +0/-10 → same “reach” from LFP = reuse PGV/AGV
      - revisit / review fork lift / conveyor rail zones
    - “reuse” datum planes: HDP, BDP, FDP
- Other items?

#### Development Process / Next Steps

- Align on key attributes
- Begin draft of carrier standard – volunteers??
- Proposed updates to G74 tape frame – Japan 3d packaging committee
  - need to align with Packaging Committee
  - better specify bar code type and location
  - specify film edge exclusion zone and centricity
- Monthly meetings – align on date / time?
  - end of the month CA 6pm / Japan 10am / China/TW 9am

**Attachment:** 2022-07-12 SEMI Film-Frame Handling TF Standardization Workbook\_v05

#### 5.4 SEMI E72 Revision Task Force

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

TF Members {See Attachment}

Previous Status {See Attachment for SNARF file}

- SNARF for E72 Revision had gone through TC Member Review prior to TC Chapter approval at PIC NA Chapter meeting in March 2022.
- The PIC Maintenance TF concluded that the new activity defined in the SNARF should be conducted under a TF dedicated to E72 revision
- Hence, TFOF of the E72Revision TF was submitted and approved at PIC NA Chapter meeting in March 2022.

#### Tasks and Schedule

- To conduct a survey to get prevalent range of value for each dimension. (average, mean, sigma, etc.)
  - Recipients: IDMs, Equipment suppliers (incl. EFEM LPT System suppliers), AMHS
  - Questionnaire drafting: Supika to draft and share with TF in next meeting

- When: September 1month
- Draft : To be started after survey result becomes available.
  - To separate sections belonging to Guide Subtype content of E72 from Specification parts
  - To produce alternative set of standardized dimensions that would accommodate tall 3D layout, or other out of range Fab situation, of production equipment in recently built 300 mm Fabs
  - To clarify the meaning of conventional dimensions (current E72) and alternatives
- TF meeting 8/9 16:00 PDT
- Fall meeting TF: Supika to coordinate with Stefan and Alpay

**Attachment:** E72Revision TF Report\_20220713

## 6 Old Business...

None

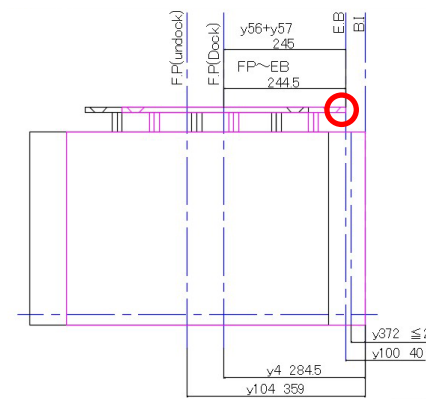
## 7 New Business

### 7.1 ESG-J Carrier Study Group Report

Shoji Komatsu (Acteon NEXT) addressed the Committee on the below:

### Concerns about automation flanges

❖ For 510x515 Panel FOUN, there is a concern about clearance such as finger pinch



#### Concerns

The y372 of the SEMI E182 is <28.9mm, and if the minimum value is 0mm, the automation flange may interfere with the EB. In addition, there are concerns about finger pinching.

#### Discussion

- How to set y372 depends on the LP design concept (ex. No interference if y372 = 25mm butt may be difficult to design).
- Reshaping the automation flange may be too late.

#### Solutions

1. Add countermeasures such as side cover + area sensor to appendix.
2. Limit the range of the y372 specification.
3. Change the shape of the automation flange.

#### Request to Panel FOUN TF

Requests TF to consider countermeasures for the above concern

2

Equipment Suppliers Group – Japan AMHS SG

The PIC NA TC Chapter responded:

**Attachment:** 20220713\_ESG-J Carrier\_SG AMHS\_SG Report

### 7.2 SEMI E131 (For IMM manufacturers) and for E15.1 (300mm Tool load port) conflict

## 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 November 7-10, in conjunction with SEMI Standards NA Fall Meetings 2022. Schedule details TBD. Please check [www.semi.org/standards](http://www.semi.org/standards) for updates.

### Tentative Schedule:

Tuesday, November 8

- 13:00-16:00, Packaging Tape Frame Handling TF
- 16:00-17:00, SEMI E72 Revision TF

Wednesday, November 9

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

Adjournment: 11:30.

Respectfully submitted by:

Laura Nguyen

Sr. Coordinator, International Standards

SEMI Global Headquarters

Phone: +1.408.943.7019

Email: [lnguyen@semi.org](mailto: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<sup>#1</sup>**

<i>Title</i>	<i>Title</i>
Required Element Nov 2020 Rev1	PIC SMTF Report July 2022_ACT
[2022Spring] PIC NA TC Chapter Meeting Minutes FINAL	2022-07-12 SEMI Film-Frame Handling TF Standardization Workbook_v05
JA_PIC_Liaison_20220613_v1.0	E72Revision TF Report_20220713
Staff Report July 2022 v7_PIC	E63 Editorial changes in response to Doc 6918 Comments
6918_ProceduralReview	20220713_ESG-J Carrier_SG AMHS_SG Report
SEMI EM TF - PIC Update 13 July 2022	

<sup>#1</sup> 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](http://www.semi.org). For additional information or to obtain individual attachments, please contact Laura Nguyen at the contact information above.