



North America 3DS-IC (Three-dimensional Stacked Integrated Circuits) Standards Committee Meeting Summary and Minutes



NA Standards Spring 2015 Meetings
31 March, 15:00 – 17:00 Pacific Time
SEMI Headquarters in San Jose, California

Committee Announcements

Next Committee Meeting
SEMICON West 2015 Meetings
July 14, 2015
San Francisco Marriott Marquis Hotel in San Francisco, California

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Sesh Ramaswami (Applied Materials), Richard Allen (NIST), Chris Moore (BayTech-Resor)

SEMI Staff: Paul Trio

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
<i>Applied Materials</i>	<i>Ramaswami</i>	<i>Sesh</i>	IPC	Solberg	Vern
Asahi Glass	Takahashi	Mark	NIST	Allen	Richard
BayTech-Resor	Baylies	Win	Sonoscan	Martell	Steve
BW & Associates	Wu	Bevan	SuperSight	Perroots	Len
Corning	Schmidt	Ilona	SEMI	Trio	Paul

Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
None		

Table 3 Ballot Results

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

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

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
None		

Table 4 Authorized Activities

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
5713	Updated SNARF	Bonded Wafer Stacks TF	New Standard: Specification for Glass Interposer Base Material without or with Through-Glass or Blind Via Openings <i>From: New Standard: Specification of Glass Interposers</i>



Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
			<p>Updated Rationale: In the past, interposers were made from silicon. Glass can be used as an alternative material with its specific physical and thermal properties. However, no specification or description of requirements for such glass interposers exists. This document will include specifications for procuring glass base material intended for use as an interposer. The glass base material may be in the form of a wafer or a panel. This document will also include specifications for procuring glass base material with TGV or Blind Via openings.</p> <p>Updated Scope: This specification describes dimensional and thermal characteristics of glass with openings and glass for interposers. This specification applies to glass substrates in shape of a wafer (round) or a panel (square or rectangular). The glass and its openings are intended to be further processed with metal fillings in order to be used as glass interposers. The glass substrate will be permanently integrated in a stack. Methods of measurements suitable for determining the characteristics in the specification are indicated.</p> <p><i>To be submitted for GCS approval after two-week global 3DS-IC technical committee review and comment.</i></p>

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
5823	Cycle 4 or 5, 2015	Bonded Wafer Stacks TF	Revision to SEMI 3D2, Specification for Glass Carrier Wafers for 3DS-IC Applications

Table 6 New Action Items

Item #	Assigned to	Details
2015Mar #01	Rich Allen/Ilona Schmidt	Send latest ballot 5823 draft to the attendees for review
2015Mar #02	Paul Trio	Send Steve Martell a copy of the Document 5766 Publication Proof when it becomes available
2015Mar #03	Paul Trio	Provide 3DS-IC committee feedback on 3D Packaging survey to Jasbir/Chris at IPC.

Table 7 Previous Meeting Actions Items

Item #	Assigned to	Details
2014Nov #04	Paul Trio, Kris Shen	Work with sputter targets proposers to identify appropriate standards developing organization (SDO) to carry out the activity
2014Jul #01	Rich Allen, Paul Trio	Discuss how best to structure 5173F document (e.g., adding a note) since it will require M1 to implement.
2014Jul #03	Paul Trio	Arrange for access to SEMI HB1 for Victor Vartanian (SEMATECH)

1 Welcome, Reminders, and Introductions

Rich Allen, committee co-chair, called the meeting to order at 1:00 PM. After welcoming all attendees, the SEMI meeting reminders on membership requirements, antitrust, patentable technology, and meeting guidelines were presented and explained. Finally, the agenda was reviewed.

Attachment: 01, SEMI Standards Required Meeting Elements



2 Review of Previous Meeting Minutes

The committee reviewed the minutes of the previous meeting held November 4 in conjunction with the NA Standards Fall 2014 meetings.

Motion: Accept the minutes of the previous meeting as written.

By / 2nd: Steve Martell (Sonoscan) / Bevan Wu (BW & Associates)

Discussion: None

Vote: 5-0 in favor. Motion passed.

Attachment: 02, NA 3DS-IC Fall 2014 meeting (November 4) minutes

3 SEMI Staff Report

Paul Trio (SEMI) gave the SEMI Staff Report. The key items were as follows:

- 2015 Global Calendar of Events
 - SEMICON Southeast Asia (April 22-24, Penang, Malaysia)
 - Advanced Semiconductor Manufacturing Conference [ASMC] (May 3-6, Saratoga Springs, New York)
 - Intersolar Europe (June 10-12, Munich Germany)
 - SEMICON Russia (June 17-18, Moscow)
 - SEMICON West (July 14-16, San Francisco, California)
 - SEMICON Taiwan (September 2-4, Taipei)
 - European MEMS Summit (September 17-18, Milan, Italy)
 - Strategic Materials Conference [SMC] (September 22-23, Mountain View, California)
 - SEMICON Europa (October 6-8, Dresden, Germany)
 - SEMICON Japan (December 16-18, Tokyo)
- NA Standards Spring 2015 Meetings (March 29 to April 2)
 - Committees meeting at SEMI Headquarters (San Jose)
 - 3DS-IC | EHS | Facilities & Gases | HB-LED | Information & Control | Liquid Chemicals | MEMS/NEMS | Metrics | PV Materials
 - SEMI thanks Intel (Santa Clara) for hosting the Physical Interfaces & Carriers (PIC) committee and task force meetings.
 - SEMI thanks KLA-Tencor (Milpitas) for hosting the Silicon Wafer committee and task force meetings.
- Upcoming North America Meetings (2015)
 - 2015:
 - NA Compound Semiconductor Materials TC Chapter Meeting (May 20 in conjunction with CS MANTECH, Scottsdale, Arizona)
 - NA Standards Meetings at SEMICON West 2015 (July 13-16, San Francisco, California)
 - NA Standards Fall 2015 Meetings (November 2-5, San Jose, California)
 - 2016:
 - NA Standards Spring 2016 Meetings (April 4-7, San Jose, California)



- Technical Ballot Critical Dates for NA Standards meetings at SEMICON West 2015
 - Cycle 4: due April 10 / Voting Period: April 21 – May 21
 - Cycle 5: due May 8 / Voting Period: May 22 – June 22

- Standards Publications Report

Cycle	New	Revised	Reapproved	Withdrawn
November 2014	1	4	1	0
December 2014	3	4	3	0
January 2015	5	2	0	1
February 2015	3	7	3	0

- Total in portfolio – 928 (includes 110 Inactive Standards)

- New Requirements/Process Reminders for TC Chapter Meetings

- Standards Document Development Project Period
 - Project period shall not exceed 3 years (Regs 8.3.2)
 - SNARF approval to TC Chapter approval
 - If document development activity is found to be continuing, but cannot be completed within the project period, TC Chapter may grant one-year extension at a time, as many times as necessary.
- SNARF Review Period
 - A submitted SNARF for a new, or for a major revision to an existing, Standard or Safety Guideline is made available to all members of a TC Chapter’s parent global technical committee for two weeks for their review and comment. (Regs 8.2.1)
 - If the SNARF is submitted at a TC Chapter meeting, the committee can review and approve, but the SNARF will need to be distributed for two weeks and then approved via GCS.
- New SNARF & TFOF forms *{embedded in Staff Report, see Attachment 03 of these minutes}*
- Procedures for Correcting Nonconforming Titles of Published Standards Document (PM Appendix 4)
 - Some Standards qualify for a special procedure where a line item change can be used to correct the titles. Otherwise, the corrective action will likely require a major revision.
- Table of Content (TOC)
 - No section of a Standard or Safety Guideline may contain a list of section numbers and titles (e.g., similar to a Table of Contents).
 - Table of content can be approved editorially during Reapproval
- Assignment of Draft Document Numbers
 - Upon successful publication of a Document, or termination of work on it by the TF, Standards staff retires the Document number and its associated SNARF, and they are not to be used for further Document development activity.
 - For a Document with Line Item(s) that passed while others failed, the same SNARF may be used to rebalot only those failed Line Item(s).
 - A new SNARF is required to introduce new Line Item(s).

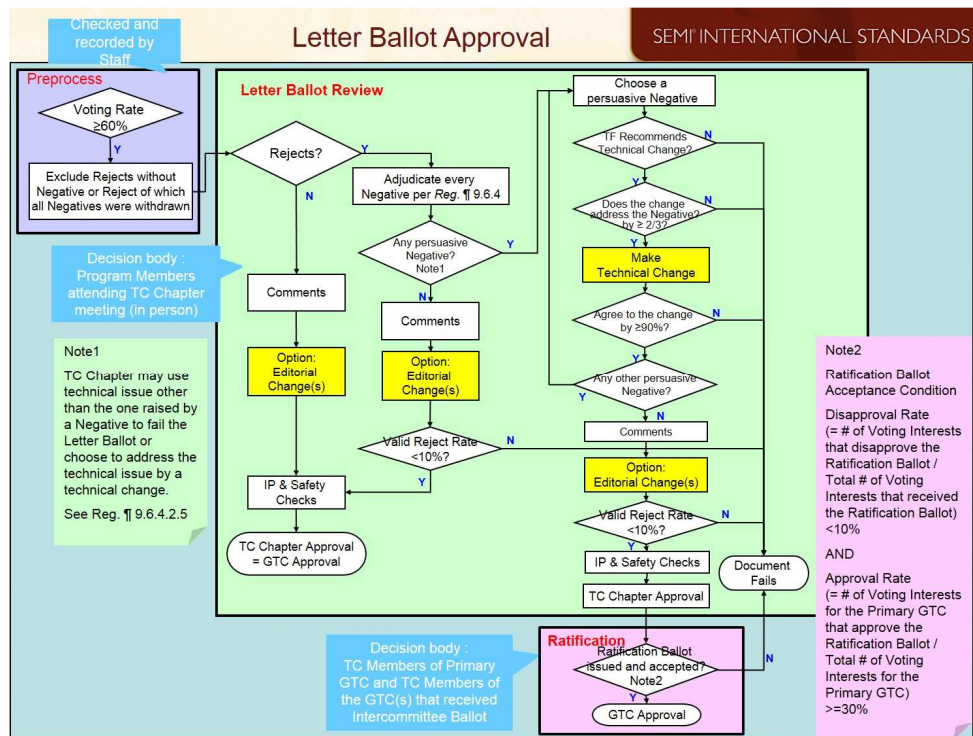


- SNARF
 - SNARFs may be submitted and approved for new, revised, reapproved, or reinstated Documents that have been approved by the TC Chapter, but not yet published (i.e., no new Publication Date Code exists yet). (PM NOTE 8)
- Minority Report (MR)
 - The motion passes if a simple majority of the total GCS voting membership (i.e., not just those who return votes) approve the motion (Regs 9.9)
- Latest Approvals/Next Revisions
 - Follow-up revisions of Regulations and Procedure Manual were published on 27 March, 2015 for use in NA Spring Standard meetings.
- Regulations/PM Ballot Revisions

<i>Group #</i>	<i>Title</i>	<i>Regs</i>	<i>PM</i>
1	Clarification on Standards Document Development Project Period	Y	Y
2	GCS Voting Period for Minority Reports	Y	Y
3	Improvement on Minority Report Handling for Shorter Time to Publication	Y	Y
4	TC Membership Requirement	Y	N
5	Ballot Adjudication Process Improvement	Y	Y
6	Revision to Procedural Review	Y	Y
7	Clarification of TC Chapter Review and Adjudication Term	Y	Y
8	Clarification of Procedure Guide to Procedure Manual	Y	Y
9	Miscellaneous Changes of Regulations	Y	N
10	Add New Requirements Related to Notices	N	Y
11	Add New Guidance Related to Note	N	Y
12	Clarification on SNARF and TFOF submitter	N	Y
13	Clarification on SNARF approval procedures for New Standards/Safety Guidelines and major revision of existing Standards/Safety Guidelines	N	Y
14	Update Appendix 4 Related to Correction of Nonconforming Titles	N	Y
15	Clarifications of Procedures Related to Table of Contents	N	Y
16	Clarifications on Use of Shall, Must, and Should	N	Y
17	Miscellaneous Changes to Procedure Manual	N	Y

Indicates follow-up from Oct-Nov 2014 Regs ballot

- Ballot Adjudication Process Improvement (Group 5)
 - Problem
 - Publications of Documents can be delayed by the need to go through another cycle of Letter Ballot issuance and adjudication at a TC Chapter meeting to make any technical change.
 - Proposed Solution
 - Allow TC Chapter to make technical changes on balloted Standard Document during its adjudication under certain conditions. Conduct a Ratification Ballot in order to ensure global consensus on supporting the technical changes made by the TC Chapter.
 - NOTE: This Group was originally proposed as Group 10 in the previous Regulations Ballot to ISC and failed.
 - Taking suggestion of ISC at its SEMICON Japan 2014 meeting in December, the scope of the Ratification Ballot is now limited to technical changes made by TC Chapter during adjudication of a Letter Ballot.



- GCS Voting Period for Minority Report (Group 2)
 - Problem
 - Voting period for Minority Report is too short to solicit sufficient votes from GCS voting members.
 - Proposed Solution
 - To let GCS member have 2 weeks voting period, which is same length as the Minority Report submission window.
 - NOTE: This problem was raised by the NARSC at its Fall 2014 meeting at which the ISC Ballot on Regulations change was discussed. Following-up on this problem by additional changes in the Regulations was suggested by the Regulations SC Chair at the time.
- Improvement on Minority Report Handling for Shorter Time to Publication (Group 3)
 - Problem
 - Despite the rare occurrence of MR submission, every Document approved by the TC Chapter has to wait at least a month before it qualifies for A&R procedural review, which in turn results in a longer time to publish.
 - Proposed Solution
 - Expedite the process by allowing A&R procedural review to be commenced as soon as record of ballot review made available.
 - If an MR is submitted on a Document, Publication will be on hold until responsible parties reach conclusion on the MR. If the Document is returned to the TF for rework based on consideration of the MR, A&R approval is nullified.
 - NOTE: This problem was raised by JARSC at its SEMICON Japan 2014 meeting. ISC members expressed their support on improvement toward faster publication.

Attachment: 03, SEMI Standards Staff Report



4 Taiwan 3DS-IC Committee

Paul Trio (SEMI) provided an update on Taiwan 3DS-IC activities.

- Ballot Review
 - Doc #5485, New Standard: Guide for Incoming/Outgoing Quality Control and Testing Flow for 3DS-IC Products
 - Developed by the Testing TF
 - Balloted for the Cycle 7, 2014 voting period.
 - Adjudicated on January 15, 2015 and passed.
 - Submitted to ISC Audits & Reviews SC for procedural review.
 - Doc #5688, New Standard: Guide For Overlay Performance Assessment For 3DS-IC Process
 - Developed by the Middle-End Process TF
 - Balloted for the Cycle 7, 2014 voting period.
 - Adjudicated on January 15, 2015 and passed.
 - Submitted to ISC Audits & Reviews SC for procedural review.
- Continuing to recruit new TC/TF members in Taiwan
- Exploring collaboration opportunity with NA 3DS-IC committee to evaluate and continue some prior work done by the disbanded Thin Wafer TF
- Next meeting: April 15 at SEMI Taiwan office.
- SEMI Staff:
 - Andy Tuan | atuan@semi.org

Attachment: 04, Taiwan 3DS-IC Report

5 Japan Packaging Committee

Paul Trio provided the Japan 3D-IC liaison report under the JA Packaging Committee. The key items were as follows:

- Next meeting: May 11 during the Japan Spring 2015 Meetings (SEMI Japan office, Tokyo)
- Leadership and Structure Change
 - Thin Die Bending Strength Measurement Method TF
 - TF was discharged.
 - The co-leaders – Haruo Shimamoto (AIST), Morihiro Kada (AIST), and Shoji Yasunaga (Rohm) – stepped down.
 - Thin Chip Handling TF
 - The co-leader, Kazuhiko Nakamura (Consultant), stepped down and Haruo Shimamoto (AIST) is newly appointed as the co-leader.
 - Hideki Suzuki (Shin-Etsu Polymer) remained.
- Thin Chip (Die) Bending Strength Measurement Method Task Force
 - Doc.#5691, New Standard: “Test Method for Measurement of Chip (Die) Strength by Mean of Cantilever Bending”
 - Published as SEMI G96-0914.
 - TC Chapter decided to discharge Thin Chip (Die) Bending Strength Measurement Method Task Force at Japan Winter 2015 Meetings on Jan. 20.



- Thin Chip Handling Task Force
 - Two SNARFs were endorsed at Japan Winter 2015 Meetings on Jan. 20 and were approved officially by GCS later.
 - Doc. 5835: New Standard, “Specification for adhesive Tray Used for 3D-IC Manufacturing and Shipping”
 - Doc. 5836: New Standard, “Adhesive Strength Test Method for Adhesive Tray Used for 3D-IC Manufacturing and Shipping”
- 3D-IC Study Group
 - Study Group meeting is being held actively

<i>Meeting #</i>	<i>Date</i>	<i># Attendees</i>
Workshop	Aug. 29, 2012	20
Kick-off	Oct. 5, 2012	20
2nd	Nov. 7, 2012	14
3rd	Dec. 6, 2012	31
4th	Feb. 1, 2013	17
5th	Mar. 7, 2013	28
6th	Mar. 26, 2013	21
7th	Apr. 26, 2013	16
8th	May. 17, 2013	18
9th	Jun. 27, 2013	17
10th	Jul.19, 2013	16

<i>Meeting #</i>	<i>Date</i>	<i># Attendees</i>
11th	Sep. 19, 2013	13
12th	Oct. 22, 2013	24
13th	Nov. 28, 2013	22
14th	Dec. 5, 2013	22
15th	Dec. 19, 2013	15
16th	Jan. 13, 2014	18
17th	Mar. 11, 2014	21
18 th	May 8, 2014	21
19th	Jul. 14, 2014	25
20th	Sep. 29, 2014	18

- Working for setting up “Tape Adhesive Strength Measurement TF”. TFOF will be submitted to GCS or the next committee meeting to be held on May 11, 2015.
- Global Meeting was held on December 3 in conjunction with SEMICON Japan 2014 at Tokyo Big Sight.
 - The Technical Sharing Session was held and 4 speakers presented the Inspection/ Measurement technology for 3D-IC/ TSV products. These presentation cover the four different metrologies of ...
 - 1) X-ray Metrology for TSV & Wafer Bumps,
 - 2) Raman Spectroscopy technique for TSV stress distribution,
 - 3) Quantitative Nanomechanical Test in SEM for bending test,
 - 4) New Testing Method of bare die/stacked die with Smart Die Carrier and Compact Test Cell
- Preparing for setting up Japan TC Chapter of 3DS-IC Global Technical Committee
- SEMI Staff:
 - Naoko Tejima | ntejima@semi.org

Attachment: 05, Japan 3D-IC Report

6 Ballot Review

There were no ballots adjudicated at this meeting.



7 Task Force Reports

7.1 Bonded Wafer Stacks Task Force

Rich Allen reported that the TF is continuing work on the following Documents:

- Doc. 5173F – New Standard: Guide for Describing Silicon Wafers for Use in a 300 mm 3DS-IC Wafer Stack
- Doc. 5713 – New Standard: Specification of Glass Interposers
- Doc. 5823 – Revision to SEMI 3D2-1113, Specification for Glass Carrier Wafers for 3DS-IC Applications

Motion: Find development of document 5173 as continuing.
By / 2nd: Steve Martell (Sonoscan) / Bevan Wu (BW & Associates)
Discussion: None
Vote: 7-0 in favor. Motion passed.

The TF reviewed a preliminary draft of Doc. 5713 and determined that the existing SNARF will need to be revised which entail title, rationale, and scope changes:

- Revised SNARF # 5713 title: New Standard: *Specification for Glass Interposer Base Material without or with Through-Glass or Blind Via Openings*
 - From: New Standard: *Specification of Glass Interposers*
- Updated Rationale: In the past, interposers were made from silicon. Glass can be used as an alternative material with its specific physical and thermal properties. However, no specification or description of requirements for such glass interposers exists. This document will include specifications for procuring glass base material intended for use as an interposer. The glass base material may be in the form of a wafer or a panel. This document will also include specifications for procuring glass base material with TGV or Blind Via openings.
- Updated Scope: This specification describes dimensional and thermal characteristics of glass with openings and glass for interposers. This specification applies to glass substrates in shape of a wafer (round) or a panel (square or rectangular). The glass and its openings are intended to be further processed with metal fillings in order to be used as glass interposers. The glass substrate will be permanently integrated in a stack. Methods of measurements suitable for determining the characteristics in the specification are indicated.

Motion: Approve SNARF # 5713 revisions.
By / 2nd: Rich Allen (NIST) / Steve Martell (Sonoscan)
Discussion: None
Vote: 7-0 in favor. Motion passed.

As these changes are considered significant and since the activity is for the development of a new Standard, the updated SNARF will be distributed to the global 3DS-IC TC Chapter for review per SEMI Standards *Regulations* section 8.2.1 and *Procedure Manual* section 2.2.5.

The task force also reviewed ballot 5823 (3D2 revision) which will be submitted for either Cycle 4 or 5, 2015 balloting and adjudicated at SEMICON West 2015 (July). Some of those present at the committee meeting were not able to attend the BWS TF meeting earlier in the day. Therefore, Rich Allen and Ilona Schmidt will send the latest 5823 draft to the attendees for review.

Motion: Authorize ballot submission for Document 5823 for Cycle 4 or 5, 2015 voting period.
By / 2nd: Rich Allen (NIST) / Steve Martell (Sonoscan)
Discussion: None
Vote: 7-0 in favor. Motion passed.



Finally, Rich reported that the TF is discontinuing work on the following Documents:

- Doc. 5174 – New Standard: Specification for Identification and Marking for Bonded Wafer Stacks
- Doc. 5692 – New Standard: Guide for Describing Glass Wafers for Use as 300 mm Carrier Wafers in a 3DS-IC Temporary Bond-Debond (TBDB) Process

Motion: Approve to discontinue document develop for SNARFs #5174 and #5692.

By / 2nd: Steve Martell (Sonoscan) / Bevan Wu (BW & Associates)

Discussion: None

Vote: 7-0 in favor. Motion passed.

Action Item: 2015Mar #01, Rich Allen/Ilona Schmidt to send latest ballot 5823 draft to the attendees for review.

7.2 Inspection & Metrology Task Force

Rich Allen reported that the task force brainstormed a number of topics for standardization related to glass wafer for interposers and for different types of chip level stacking.

Last fall, the TF completed development of document 5270 (*New Standard: Guide for Measuring Voids in Bonded Wafer Stacks*) and 5766 (*New Auxiliary Information: Round Robin Study of Method for Measurement of Voids in Bonded Pairs of Silicon Wafers*). Both Documents passed both technical committee and procedural reviews and are being prepared for publication. Steve Martell requested to review the 5766 publication proof before it gets published.

Action Item: 2015Mar #02, Paul Trio to send Steve Martell a copy of the Document 5766 Publication Proof when it becomes available.

8 Old Business

8.1 Action Items from previous meeting:

Item #	Assigned to	Action Item	Status
2014Nov #01	Paul Trio	Look into breakdown of document subtypes (e.g., # Specifications vs # Guides) of currently published SEMI Standards	Specifications ≈ 43.5% Test Methods ≈ 27.5% Guide ≈ 17% Practice ≈ 3.5% Safety Guidelines ≈ 2.75% Miscellaneous/Others ≈ 2.75% Terminology ≈ 2.15% Specification & Guide < 1% Classification < 1% Completed. Closed.
2014Nov #02	Paul Trio	Notify NA 3DS-IC TC members of ongoing activities in 3DS-IC Taiwan and Japan.	Completed. Closed.
2014Nov #03	Paul Trio	Notify 3DS TC members that the Thin Wafer Handling TF has been disbanded due no ongoing activities.	Completed. Closed.
2014Nov #04	Paul Trio, Kris Shen	Work with sputter targets proposers to identify appropriate standards developing organization (SDO) to carry out the activity	Sent NA 3DS-IC TC Chapter feedback to proposers on March 16, 2015 Open



2014Jul #01	Rich Allen, Paul Trio	Discuss how best to structure 5173F document (e.g., adding a note) since it will require M1 to implement.	Open
2014Jul #03	Paul Trio	Arrange for access to SEMI HB1 for Victor Vartanian (SEMATECH)	Open
2014Jul #06	Yaw Obeng	Provide university contacts for 3D-IC packaging standardization gaps survey.	Completed
2014Jul #07	Paul Trio	Send 3D-IC packaging gaps survey form to global 3D-IC committee members for feedback.	Completed. Closed.

9 New Business

9.1 3D Packaging Survey

Paul Trio reported that GSA, IPC, SEMI, and JEDEC have combined resources to create a 3D-IC Packaging survey.

Background: In order to address current technical issues and infrastructure challenges for the development of 3D-IC packaging, a coordinated and collaborative effort is needed among different entities in the supply chain. Based on initial surveys conducted and industry review multiple technical issues were noted.

Industry stakeholders are being asked to help identify these gaps in 3D packaging standards development. In turn, organizations including IPC, SEMI, GSA, and JEDEC could organize industry discussions and help in the development of standards in this area.

Additional Committee Discussion:

Sesh Ramaswami provided inputs on how the survey questions can be further improved. For example, he recommended asking the survey respondents for the area of technology that they are responsible for to help better understand the responses provided. He also suggested better defining cost vs price.

Sesh also pointed out that the challenges in 3DS-IC is in packaging. The problems are not at the wafer level, but at the die level. Furthermore, with regard to fan-out architecture, inconsistent wafer warpage affects the structural integrity of the die. Therefore, there is focus on developing new epoxy and polymer materials.

Action Item: 2015Mar #03, Paul Trio to provide 3DS-IC committee feedback on 3D Packaging survey contacts at IPC.

9.2 3D-IC Activities at IPC

Vern Solberg reported that an IPC task group focusing on design and process implementation for 3D designers (i.e., putting on a PCB) is meeting on April 1-2, 2015. The meeting is hosted by Promex, a materials-centric packaging foundry and IC assembly service based in Santa Clara, California. Sesh Ramaswami reported that he was recently approached by Si2 on a similar activity. Sesh and Vern agreed to discuss further offline.

10 Action Item Review

10.1 Open Action Items

Paul Trio (SEMI) reviewed the open action items. These can be found in the Open Action Items table at the beginning of these minutes.

10.2 New Action Items

Paul Trio (SEMI) reviewed the new action items. These can be found in the New Action Items table at the beginning of these minutes.



11 Next Meeting and Adjournment

The next meeting of the North America 3DS-IC committee is scheduled for Tuesday, July 14 in conjunction with SEMICON West 2015 in San Francisco, California. The tentative schedule is provided below:

SEMICON West 2015 Meetings
July 13-16, 2015
San Francisco Marriott Marquis Hotel
780 Mission Street
San Francisco, California 94103
U.S.A.

Tuesday, July 14

- Inspection & Metrology Task Force (8:00 AM to 10:00 AM)
- Bonded Wafer Stacks Task Force (10:00 AM to 12:00 Noon)
- NA 3DS-IC Committee (1:00 PM to 3:00 PM)

Having no further business, a motion was made to adjourn the NA 3DS-IC Committee meeting in conjunction with the NA Standards Spring 2015 meetings. Adjournment was at 3:00 PM.

Respectfully submitted by:

Paul Trio
Senior Manager, Standards Operations
SEMI North America
Phone: +1.408.943.7041
Email: ptrio@semi.org

Minutes approved by:

Richard Allen (NIST), Co-chair	
Chris Moore (BayTech-Resor), Co-chair	
Sesh Ramaswami (Applied Materials), Co-chair	

Table 8 Index of Available Attachments #1

#	Title
1	SEMI Standards Required Meeting Elements
2	Amended NA 3DS-IC West 2014 Meeting (July 8) Minutes
3	SEMI Standards Staff Report
4	Taiwan 3DS-IC Report
5	Japan 3D-IC Report

#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 Paul Trio at the contact information above.