Table 1 Meeting Attendees
*Italicics* indicate virtual participants

**Co-Chairs:** Friedrich Passek (Siltronic), Peter Wagner (Self), Werner Bergholz (Int’l Standards Consulting)

**SEMI Staff:** James Amano

<table>
<thead>
<tr>
<th>Company</th>
<th>Last</th>
<th>First</th>
<th>Company</th>
<th>Last</th>
<th>First</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int’l Standards Consulting</td>
<td>Bergholz</td>
<td>Werner</td>
<td>Tokyo Electron</td>
<td>Mashiro</td>
<td>Supika</td>
</tr>
<tr>
<td>Microsense</td>
<td>Kallus</td>
<td>Dave</td>
<td>Self</td>
<td>Wagner</td>
<td>Peter</td>
</tr>
<tr>
<td>STS</td>
<td>Podaie</td>
<td>Noel</td>
<td>FEI</td>
<td>Kwakman</td>
<td>Laurens</td>
</tr>
<tr>
<td>SUMCO</td>
<td>Nakai</td>
<td>Tetsuya</td>
<td>KLA-Tencor</td>
<td>Haller</td>
<td>Kurt</td>
</tr>
<tr>
<td>Siltronic</td>
<td>Riedel</td>
<td>Frank</td>
<td></td>
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<td></td>
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</tbody>
</table>

Table 2 Leadership Changes
None

Table 3 Committee Structure Changes
None

Table 4 Ballot Results

<table>
<thead>
<tr>
<th>Document #</th>
<th>Document Title</th>
<th>Committee Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>5995</td>
<td>Line Item Revision of SEMI MF1048-1111, Test Method for Measuring Reflective Total Integrated Scatter</td>
<td>Passed</td>
</tr>
</tbody>
</table>

*#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 prior to the Originating TC Chapter meeting
None

Table 6 Authorized Activities

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

<table>
<thead>
<tr>
<th>#</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>6096</td>
<td>Int’l Advanced Surface Inspection TF</td>
<td>Line Item Revision to SEMI M53-0216 Practice for Calibrating Scanning Surface Inspection Systems Using Certified Depositions of Monodispere Reference Spheres on Unpatterned Semiconductor Wafer Surfaces (Addition of a related information section to SEMI M53 regarding the relationship of calibrated sizes assigned to defects by surface inspection systems to their actual physical size )</td>
</tr>
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</table>
Table 7 Authorized Ballots

<table>
<thead>
<tr>
<th>#</th>
<th>When</th>
<th>TF</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>6041</td>
<td>Cycle 1-2017</td>
<td>Int’l Advanced Surface Inspection TF</td>
<td>Line Item Revision to SEMI M21-1110, Guide For Assigning Addresses to Rectangular Elements in a Cartesian Array</td>
</tr>
</tbody>
</table>

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
None

Table 12 Previous Meeting Action Items
None

1 Welcome, Reminders, and Introductions
Peter Wagner called the meeting to order at 14:00. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

2 Review of Previous Meeting Minutes
The TC Chapter reviewed the minutes of the previous meeting.

Motion: Approve as submitted.
By / 2nd: Bergholz/Haller
Discussion: None
Vote: 4-0

Attachment: EU Silicon Wafer Meeting Minutes 20151007 v2
3 Liaison Reports

3.1 Japan TC Chapter

Tetsuya Nakai reported. Of note:

- JEITA/JSNM
  - Japan Society of Newer Metals (JSNM) takes over the functionality of the Committee, including management related to JIS standards based on JEITA standards
  - JAIDA/JEITA Standards documents
    - are archived and can be accessed on the JEITA website (http://www.jeita-smtj.com/jp/index_silicon.htm) until 2026/03 from now on.
    - JSNM also started to post those documents with selected reports from old JEITA silicon technology committee.
  - JSNM Material Standards Study Group for Semiconductor Supply-Chain (M4S) is established on April 1, 2016 to take over JEITA Silicon Wafer Technology Committee.
    - develop JSNM semiconductor related standards
    - will have good relation with SEMI
    - Liaison member from SEMI: Masayoshi Yoshise.
  - Discussion: Peter Wagner asked why JSNM is developing semiconductor-related standards, rather than bringing their proposals to SEMI. Supika Mashiro followed that if the standards are intended to be used globally, JSNM needs to communicate what’s happening. Tetsuya Nakai responded that Masayoshi Yoshise, as an informal liaison, would report on JSNM activities.

Attachment: JA Si Liaison Report 2016.10.17.ppt

3.2 NA TC Chapter

Kurt Haller reported. Of note:

- Leadership Changes
  - Int’l Polished Wafer TF
    - Mike Goldstein stepped down
  - Int’l SOI TF
    - Bich-Yen Nguyen stepped down
    - Gerd Pfeiffer (GlobalFoundries) was appointed as the new leader

- New SNARFs
  - Int’l AWG TF
    - Doc. 5915, Line Item Revision to SEMI M1-0215, Addition to Related Information : Illustration of Flatness and Shape Metrics for Silicon Wafers
      - SNARF was revised
    - Doc. 6041, Line Item Revision to M21-1110 Guide For Assigning Addresses To Rectangular Elements In A Cartesian Array
  - Int'l Test Methods Task Force
    - Reapproval and line item revision (title conformance)
      - MF1763, MF28, MF673, MF928, MF1982, MF728, MF978
- Presentation at SEMICON West meeting
  - Substrate requirement for Low power application (FD-SOI) by Gerd Pfeiffer

**Attachment:** NA Silicon Wafer TC Liaison Report August 2016.ppt

3.3 *SEMI Staff Report*

James Amano gave the SEMI Staff Report. Of note:

- 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 completed with the project period, TC Chapter may grant one-year extension at a time, as many times as necessary.
    - The TC Chapter should review the expiration dates for all applicable SNARFs at each TC Chapter meeting. (PM Note 10)
  - 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.
  - 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.

- Nonconforming Titles
  - SEMI M84-0414, SPECIFICATIONS FOR POLISHED SINGLE CRYSTAL SILICON WAFERS FOR GALLIUM NITRIDE-ON-SILICON APPLICATIONS
    - Nonconforming term
    - SPECIFICATIONS
    - Replacement term
    - SPECIFICATION
  - SEMI M73-1013, TEST METHODS FOR EXTRACTING RELEVANT CHARACTERISTICS FROM MEASURED WAFER EDGE PROFILES
    - Nonconforming term
    - TEST METHODS
    - Replacement term
    - TEST METHOD

- Standards due for Five-year review
  - None

- SNARFs approaching three years
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 Doc. 5995, Line Item Revision of SEMI MF1048-1111, Test Method for Measuring Reflective Total Integrated Scatter Passed as balloted

Attachment: 5995_ProceduralReview.doc

5 Subcommittee and Task Force Reports

5.1 Int’l Advanced Wafer Geometry Task Force

Frank Riedel reported. Of note:

- Meeting at SEMICON Europa 2016
  
  - Document #5915 - Line Item Revision to SEMI M1-0215 Specifications for Polished Single Crystal Silicon Wafers
    - Nakai-san presented the current status of the addition to Related Information: Illustration of Flatness and Shape Metrics for Silicon Wafers (SNARF was revised)
    - Figure R4-1 and its caption sparked lively discussion
  
  - SNARF: Invalid sectors – A generic approach/guidance for the exclusion details needs to be added to ERO (ESFQR/ZDD/...) documents
    - Initial SNARF aims at a wrong format for adding such information to existing standard documents (M67, M68)
    - updated SNARF will be submitted at Semicon Japan

Attachment: AWG TF Europe Report Grenoble 20161025.ppt

5.2 Int’l Advanced Surface Inspection Task Force

Frank Riedel reported. Of note:

- Leaders: K. Haller, KLA-Tencor, Y. Tamaki, F. Riedel, Siltronic AG
- Meeting at SEMICON Europa 2016
  
  - #5995, 5-year Review and Line Item Revision to MF1048 Test Method for Measuring Reflective Total Integrated Scatter
    - passed Silicon Wafer cycle 6 ballot with 100% acceptance w/o any comment
  
  - #6041, Line Item Revision to SEMI M21-1110, Guide For Assigning Addresses to Rectangular Elements in a Cartesian Array
    - To be balloted in Cycle 1-2017 for adjudication at SEMICON West
  
  - New SNARF 6096: Addition of a related information section to SEMI M53 regarding the relationship of calibrated sizes assigned to defects by surface inspection systems to their actual physical size
lingering misunderstandings of SSIS size calibration in the industry could be addressed in a new Appendix or Related Information section, added to M52 or M53

Potential directions of such consideration (illustrated with light scattering model calculations) are

Ideal particles (spheres): effect of different wavelengths, different material refractive index, non-monotonic response vs. size

Effect of non-ideal (but tractable) particle shapes; non-particle defects (scratches, pits, stacking faults)

Attachment: IAASI TF Europe Report Grenoble 20161025.ppt

Motion: To approve SNARF: Line Item Revision to SEMI M53-0216 Practice for Calibrating Scanning Surface Inspection Systems Using Certified Depositions of Monodispere Reference Spheres on Unpatterned Semiconductor Wafer Surfaces (Addition of a related information section to SEMI M53 regarding the relationship of calibrated sizes assigned to defects by surface inspection systems to their actual physical size )

By / 2nd: Riedel/Bergholz
Discussion: None
Vote: 5-0

Motion: To authorize 6041 (Line Item Revision to SEMI M21-1110, Guide For Assigning Addresses to Rectangular Elements in a Cartesian Array) for balloting in Cycle 1-2017 for adjudication at SEMICON West 2017.

By / 2nd: Haller/Riedel
Discussion: None
Vote: 5-0

5.3 Int’l Polished Wafer Task Force

Frank Riedel reported. Of note:

- Document 6019A, Line Item Revision to SEMI M1
  - Murray Bullis will rework line item 3, which failed at SEMICON West 2016, until NA Spring TF 2017
  - First draft will be available at NA Spring Meeting in April 2017

- New SNARF: Line Item Revision to SEMI M1
  - John Valley gave the presentation entitled “The Meaning of Coordinates in SEMI M1” to explain the background of this SNARF.
  - IPW Task Force recommends approval of the SNARF by the Silicon Wafer Committee.

- Laurens Kwakman gave the presentation entitled „Enabling HVM TEM metrology support - standards for TEM lamella carriers”
  - He explained the background of the industry need for standardizing TEM grids compatible with all available FIB/SEM/TEM systems
  - A workshop should be organized to discuss this initiative among TEM stakeholders and TEM equipment vendors

Motion: Approve SNARF for Line Item Revision to SEMI M1-0416 Specification for Polished Single Crystal Silicon Wafers, to address issues with primary fiducials across text, table and figures.

By / 2nd: Riedel/Haller
Discussion: None
Vote: 5-0

Attachment: IPW TF Europe Report Grenoble 20161025.ppt
5.4 GCS

Peter Wagner reported. The GCS has been discussing that M59 (Terminology) was redundant as terms are included in Compilation of Terms. At SEMICON West, the GCS decides to eventually return terms to their original documents. Tetsuya Nakai commented that the Japan TC Chapter would discuss the matter.

6 Old Business

None

7 New Business

None

8 Next Meeting and Adjournment

The next meeting is scheduled for SEMICON Europa 2017 in Munich, Germany. See http://www.semi.org/en/events for the current list of meeting schedules.

Having no further business, the meeting was adjourned at 16:00.

Respectfully submitted by:

James Amano
SEMI HQ

Table 13 Index of Available Attachments

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<td>NA Silicon Wafer TC Liaison Report August 2016.ppt</td>
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<tr>
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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 [SEMI Staff Name] at the contact information above.