Metrics Global Technical Committee
North America (NA) Chapter

Meeting Summary and Minutes

North America Fall 2018 Standards Meetings
November 7, 2018 15:00–18:00
SEMI HQ, Milpitas, California

TC Chapter Announcements

Next TC Chapter Meeting
April 3, 2018, 15:00 – 18:00
SEMI HQ, Milpitas, California

Table 1 Meeting Attendees

*Italics* indicate virtual participants

<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>Fab Consulting</td>
<td>Bouldin</td>
<td>David</td>
<td>PEER Group</td>
<td>Fuchigami</td>
<td>Albert</td>
</tr>
<tr>
<td>Best ESD Technical Services</td>
<td>Kraz</td>
<td>Vladimir</td>
<td>STG</td>
<td>Sal</td>
<td>Dilorio</td>
</tr>
<tr>
<td>Tokyo Electron</td>
<td>Mashiro</td>
<td>Supika</td>
<td>Hitachi High-Technologies</td>
<td>Enami</td>
<td>Hiromichi</td>
</tr>
<tr>
<td>Applied Materials</td>
<td>Fitzpatrick</td>
<td>Russell</td>
<td>SEMI</td>
<td>Skvortsova</td>
<td>Inna</td>
</tr>
<tr>
<td>Intel</td>
<td>Meyer</td>
<td>Steven</td>
<td></td>
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</tr>
</tbody>
</table>

Table 2 Leadership Changes

<table>
<thead>
<tr>
<th>WG/TF/SC/TC Name</th>
<th>Previous Leader</th>
<th>New Leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
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</tbody>
</table>

Table 3 Committee Structure Changes

<table>
<thead>
<tr>
<th>Previous WG/TF/SC Name</th>
<th>New WG/TF/SC Name or Status Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
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</table>

Table 4 Ballot Results

<table>
<thead>
<tr>
<th>Document #</th>
<th>Document Title</th>
<th>Committee Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Prior to the Originating TC Chapter meeting

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 6 Authorized Activities

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

<table>
<thead>
<tr>
<th>#</th>
<th>Type</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
<td>SNARF</td>
<td>ESD/ESC TF</td>
<td>Line-item Revision to SEMI E78-0912, <em>Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment</em>&lt;br&gt;New SNARF Approved at TC meeting</td>
</tr>
<tr>
<td>TBD</td>
<td>SNARF</td>
<td>ESD/ESC TF</td>
<td>Line-item Revision to SEMI E129-09-12, <em>Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility</em>&lt;br&gt;New SNARF Approved at TC meeting</td>
</tr>
<tr>
<td>TBD</td>
<td>SNARF</td>
<td>Eq. RAMP Metrics TF</td>
<td>Line-item Revision to SEMI E10-0814E, <em>Specification for Definition and Measurement of Equipment Reliability, Availability, and Maintainability (RAM) and Utilization</em>&lt;br&gt;New SNARF Approved at TC meeting</td>
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<tr>
<td>TBD</td>
<td>SNARF</td>
<td>Eq. RAMP Metrics TF</td>
<td>Line-item Revision to SEMI E79-0814E, <em>Specification for Definition and Measurement of Equipment Productivity</em>&lt;br&gt;New SNARF Approved at TC meeting</td>
</tr>
</tbody>
</table>

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

### Table 7 Authorized Ballots

<table>
<thead>
<tr>
<th>#</th>
<th>When</th>
<th>TF</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
<td>Cycle 2-2019</td>
<td>ESD/ESC TF</td>
<td>Line-item Revision to SEMI E78-0912, <em>Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment</em></td>
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<td>Cycle 2-2019</td>
<td>ESD/ESC TF</td>
<td>Line-item Revision to SEMI E129-09-12, <em>Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility</em></td>
</tr>
</tbody>
</table>
Table 8 SNARF(s) Granted a One-Year Extension

<table>
<thead>
<tr>
<th>#</th>
<th>TF</th>
<th>Title</th>
<th>Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9 SNARF(s) Abolished

<table>
<thead>
<tr>
<th>#</th>
<th>TF</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>6365</td>
<td>ESD/ESC TF</td>
<td>Line-item Revision to SEMI E78-0912, Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment SNARF abolished due to scope change</td>
</tr>
<tr>
<td>6364</td>
<td>ESD/ESC TF</td>
<td>Line-item Revision to SEMI E129-09-12, Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility SNARF abolished due to scope change</td>
</tr>
</tbody>
</table>

Table 10 Standard(s) to Receive Inactive Status

<table>
<thead>
<tr>
<th>Standard Designation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Table 11 New Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018Nov#1</td>
<td>(Vladimir, Inna, Paul T.)</td>
<td>To improve visibility of E176, consider presenting at next SCIS Meetings in Feb 2019. Focus on reduction of defects and support with case studies.</td>
</tr>
<tr>
<td>2018Nov#2</td>
<td>(Vladimir)</td>
<td>Create a script for E176 focused webinar. Submit to SEMI HQ (Inna will help to connect with SEMI Marketing.</td>
</tr>
<tr>
<td>2018Nov#3</td>
<td>(David B., Inna S.)</td>
<td>To post E10 Part II webinar online and update corresponding landing pages. <strong>DONE.</strong></td>
</tr>
<tr>
<td>2018Nov#4</td>
<td>(David B)</td>
<td>Submit Standards Watch Article material to promote newly released webinar. <strong>DONE.</strong></td>
</tr>
<tr>
<td>2018Nov#5</td>
<td>(Inna S., James A.)</td>
<td>To provide statistics for existing webinars downloads/views from semi.org and Vimeo platforms. <strong>DONE.</strong></td>
</tr>
<tr>
<td>2018Nov#6</td>
<td>(David B.)</td>
<td>To contact Cymer/ASML in Q1-2019 to support documents due for 5-year review. <strong>DONE.</strong></td>
</tr>
</tbody>
</table>

Table 12 Previous Meeting Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018SW#1</td>
<td>(Arnold S.)</td>
<td>To prepare and present ESDA Liaison Report at next Standards Meetings. <strong>OPEN.</strong></td>
</tr>
<tr>
<td>2018SW#2</td>
<td>(Vladimir K, Arnold S., Supika M.)</td>
<td>Arnold and Vladimir to create summary/problem statement (in PPT format) to demonstrate ESDA success and how similar means can help SEMI with popularization of ESD/ESC related standard. Summary to be presented at NA Fall Standards Meetings in Nov. 2018. Supika can present this report to relevant audience at ISC Japan meeting in December 2018. <strong>OPEN.</strong></td>
</tr>
<tr>
<td>2018SW#3</td>
<td>(Russell F.)</td>
<td>Contact Mitch Sakamoto for specifics on static electricity that has not yet been discussed by NA Chapter as relates to reduction of defects at component level. <strong>OPEN.</strong></td>
</tr>
</tbody>
</table>
1 Welcome, Reminders, and Introductions

Cochair David Bouldin called the meeting to order at 15:05.

After welcoming all attendees, a round of introductions followed. The SEMI meeting reminders on membership requirements, antitrust, patentable technology, and meeting guidelines were then presented and explained by David Bouldin.

Attachment 01: SEMI Standards Required Elements.ppt

2 Review of Previous Meeting Minutes

The TC Chapter reviewed and approved the minutes of the previous SEMICON West 2018 Standards meeting.

Motion: To approve minutes as written.
By / 2nd: Sal Dilorio (STG) / Vladimir Kraz (BestESD)
Discussion: None
Vote: 6-0 in favor. Motion passed.

- Inna Skvortsova reviewed the status of the previous meeting action items.

Attachment 02: NA Metrics TC Meeting Minutes (July 2018).pdf

3 SEMI Standards Staff Report

SEMI Global 2018 Calendar of Events
- SEMICON Europa (November 13-16, 2018, Munich, Germany)
- SEMICON Japan (December 12-14, 2018, Tokyo, Japan)

SEMI Global 2019 Calendar of Events
- SEMICON Korea (January 23-25, 2019), Seoul, Korea
- MEMS and Sensor Industry Group (February 19-20, Monterey, California)
- SEMICON China (March 20-22, Shanghai, China)
- SEMICON Southeast Asia (May 7-9, Kuala Lumpur, Malaysia)
- SEMICON West (July 9-11, San Francisco, California)

Upcoming North America Meetings
- NA Standards Spring 2019 Meetings (April 1-4, 2019, SEMI HQ, Milpitas, California)
- SEMICON West 2019 Meetings (July 8-11, 2019, San Francisco, California)
- NA Standards Fall 2019 Meetings (November 4-7, 2019, SEMI HQ, Milpitas, California)

Letter Ballot Critical Dates for NA Standards meetings
- Cycle 1-19: due Jan 3 / Voting Period: Jan 16 – Feb 16
- Cycle 2-19: due Feb 1 / Voting Period: Feb 15 – March 18
Cycle 3-19: due March 12 / Voting Period: March 26-April 25


- SEMI Standards Publications

<table>
<thead>
<tr>
<th>Cycle</th>
<th>New</th>
<th>Revised</th>
<th>Reapproved</th>
<th>Withdrawn</th>
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<tr>
<td>July 2018</td>
<td>0</td>
<td>3</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>August 2018</td>
<td>2</td>
<td>11</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>September 2018</td>
<td>0</td>
<td>8</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>October 2018</td>
<td>7</td>
<td>8</td>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>

Total SEMI Standards in portfolio: 996. Includes 252 Inactive Standards

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Designation</th>
<th>Title</th>
<th>Committee</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2018</td>
<td>SEMI PV85</td>
<td>Practice for Metal Wrap Through (MWT) Back Contact Photovoltaic (PV) Module Assembly</td>
<td>Photovoltaic</td>
<td>CH</td>
</tr>
<tr>
<td>October 2018</td>
<td>SEMI PV86</td>
<td>Specification for Crystalline Silicon Photovoltaic Module Dimensions</td>
<td>Photovoltaic</td>
<td>CH</td>
</tr>
<tr>
<td>October 2018</td>
<td>SEMI PV87</td>
<td>Test Method for Peeling Force Between Electrode and Ribbon/Back Sheet</td>
<td>Photovoltaic</td>
<td>CH</td>
</tr>
</tbody>
</table>

- New Forms, Regulations & Procedure Manual
  - New version of Regulations (June 8, 2018)
  - New version of Procedure Manual (June 8, 2018)
  - New TFOF & SNARF
  - New Ballot Review Templates
  - www.semi.org/standards
    - Bottom left, under Resources!
- Rules for Handling of Trademark (Regulations § 16.4)
o Sections 16.4.1 and 16.4.4 of the recently revised of the Regulations contain requirements for the use of trademarks in published Documents.
o Existing Documents have been found that contain trademarks for items such as materials, software protocols, and equipment.
o All TC Chapters should review their Documents at the time a revision or reapproval ballot is planned to determine if a trademark is used and, if so, whether its use is justified, properly represented, and that a footnote references the trademark owner.
o Failure to do so could jeopardize ballot approval.

• SNARF(s) and TFOF approved by GCS in between TC Chapter Meetings
  o None
• SNARF 3 year status TC Chapter may grant a one-year extension:
  o None
• Nonconforming Titles
  o None
NOTE: Refer to Procedure Manual (PM) Appendix Table A4-1 and A4-2

• Documents due for 5 Year Review

<table>
<thead>
<tr>
<th>Name</th>
<th>Due for Review</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEMI E78-0912</td>
<td>9/28/2017</td>
<td>Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment</td>
</tr>
<tr>
<td>SEMI E43-0813</td>
<td>8/21/2018</td>
<td>Guide for Electrostatic Measurements on Objects and Surfaces</td>
</tr>
<tr>
<td>SEMI E165-0813</td>
<td>8/30/2018</td>
<td>Guide for a Comprehensive Equipment Training System When Dedicated Training Equipment is not Available</td>
</tr>
<tr>
<td>SEMI E149-0314</td>
<td>3/14/2019</td>
<td>Guide for Equipment Supplier-Provided Documentation for the Acquisition and Use of Manufacturing Equipment</td>
</tr>
</tbody>
</table>

Attachment 03: SEMI Staff Report Metrics TC (Nov 2018).ppt

4 Liaison Reports
4.1 Metrics Europe TC Chapter
NONE. No changes since November 2016.

4.2 Metrics Japan TC Chapter
Report presented by Inna Skvortsova (SEMI staff). Of note:
Japan TC Chapter resumed activities after the long break.

- Leadership (change)
  - None

- Meeting Information
  - The TC Chapter has been inactive for five years and now restarted their activities.
  - Previous Meeting
    - July 31, 2018 at Japan Summer Meetings. SEMI Japan office, Tokyo
  - Next Meeting
    - December 13, 2018 at the Japan Winter 2018 Meetings in conjunction with SEMICON Japan 2018, Tokyo Big Sight, Tokyo

- TC Chapter Activities
  - Ballot – NONE
  - New activities – NONE
  - Five-Year Review – NONE

- Task Force Highlights
  - Japan RF Measurement Liaison Task Force
    - Reviewed proposals form NA RF Measurement TF to discuss the priorities and preferences. The comments from the discussion will be sent to NA.
    - Started the discussion about the revision of SEMI E113 Specification for Semiconductor Equipment RF Power Delivery System.

- SEMI Staff Japan: Chie Yanagisawa cyanagisawa@semi.org

Attachment 04: Metrics Japan TC Liaison (Fall 2018).ppt

4.3 Technical Editors Board (TEB) Report
David Bouldin (Fab Consulting) reported that the Regulations SC and TEB are working on ongoing project to revise the Style Manual.

Attachment: None

4.4 ESDA Liaison Report
None for this meeting. Update will be presented by Arnold S.at the next TC Chapter meeting after ESD Association will publish its most recent report in September 2018. Expected changes: new types of ionizers and a few new test measurement methods to be published by ESD association.

Action Item: (Arnold S.) To prepare and present ESDA Liaison Report at NA Spring Standards Meetings.
5 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.

- NONE during Fall 2018 Metrics TC Meeting.

6 Subcommittee and Task Force Reports

6.1 CCC Test Methods Task Force Report

Supika Mashiro reported for the CCC Test Methods Task Force. Brief review of this recently formed TF current efforts:

- Leadership change
  - Michal Cox (Intel) will be recommended at the next TC meeting as the coleader of CCC Test Methods TF (pending his Program/TC Member registration)
- New SNARFs proposal (SNARFs reviewed by GTC members prior to NA Metrics TC meeting)
  - New Standard: Test Method for Measuring Surface Metal Contamination Through ICP-MS of Critical Chamber Components Used in Semiconductor Wafer Processing
  - New Subordinate Standard: Test Method for Measuring Surface Metal Contamination Through ICP-MS of Showerheads Used in Semiconductor Wafer Processing
- Ballots Adjudicated
  - None

Motion: To approve SNARF for New Standard: Test Method for Measuring Surface Metal Contamination Through ICP-MS of Critical Chamber Components Used in Semiconductor Wafer Processing

By / 2nd: Supika Mashiro (TEL) / Vladimir Kraz (BestESD)

Discussion: None.

Vote: 6-0. Motion passed.

Motion: To approve SNARF for a New Subordinate Standard: Test Method for Measuring Surface Metal Contamination Through ICP-MS of Showerheads Used in Semiconductor Wafer Processing

By / 2nd: Supika Mashiro (TEL) / Vladimir Kraz (BestESD)

Discussion: None.

Vote: 6-0. Motion passed.

Attachment 05: CCC Test Methods Task Force Report (Nov 2018)

6.2 EMC Task Force Report

- Vladimir Kraz reported for the EMC Task Force. Leadership change
  - None
- SNARFs proposal / Ballots Adjudicated
  - None
• Upcoming Activities – Plan to popularize E176 among Semiconductor and PCBA manufacturers
  o We (EMC TF) collectively suggest that SEMI publishes a “White Paper” on importance of new E176, which is just technical enough to convey the substance and just business-like enough to impress its importance on the management layers.
  o Encourage SEMI members, such as equipment manufacturers, to popularize E176 among their customers:
    ▪ It will improve operability and uptime of their equipment. It will improve process and yield at the Fabs. Everyone wins!
  o On behalf of SEMI, spread focused Press Releases to technical publications worldwide (they appreciate Press Releases from global organizations more than from businesses) - free and provides multiple exposure to different levels within companies.
  o At SEMICONs, have special sessions on specific Standards
  o Anything else that works

Attachment 06: SEMI EMC Task Force Summary (Nov 2018)

Action Item: (Vladimir, Inna, Paul T.) To improve visibility of E176, consider presenting at next SCIS Meetings in Feb 2019. Focus on reduction of defects and support with case studies.

Action Item: (Vladimir) Create a script for E176 focused webinar. Submit to SEMI HQ (Inna will help to connect with SEMI Marketing)

6.3 ESD/ESC Task Force

• Leadership change
  o None

• SNARFs proposal / Ballots Adjudicated
  o None

• New SNARFs
  o SNARF for Line-item Revision to SEMI E78-0912, Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment
  o SNARF for Line-item Revision to SEMI E129-09-12, Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility
    ▪ SEMI E78 and SEMI E129 are up for mandatory 5 year review
    ▪ IRDS updated ESD Guideline table to extend past 2018. E78 and E129 should be updated to reflect the change
    ▪ Ballots submission planned for Cycle 2-2019

• SNARF 6365 (LI Rev E78) and SNARF 6364 (LI Rev E129) abolished at Fall TC Meeting due to the scope change.

• Upcoming Activities
  o SEMI E43-0813, Guide for Electrostatic Measurements on Objects and Surfaces
    ▪ Due for 5-year review. TF will provide recommendation for the scope of revision by Spring 2019 Meetings.
Motion: To abolish existing SNARFs #6365 and #6364, due to the scope change.
By / 2nd: Russell Fitzpatrick (AMAT) / Vladimir Kraz (BestESD)
Discussion: None.
Vote: 6-0. Motion passed.

Motion: To approve SNARF for Line-item Revision to SEMI E78-0912, Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment
By / 2nd: Russell Fitzpatrick (AMAT) / Supika Mashiro (TEL)
Discussion: None.
Vote: 6-0. Motion passed.

Motion: To approve SNARF for a Line-item Revision to SEMI E129-09-12, Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility
By / 2nd: Supika Mashiro (TEL) / Vladimir Kraz (BestESD)
Discussion: None.
Vote: 6-0. Motion passed.

Motion: To authorize ballot submission in Cycle 2-2019 for Line-item Revision to SEMI E78-0912, Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment
By / 2nd: Russell Fitzpatrick (AMAT) / Vladimir Kraz (BestESD)
Discussion: None.
Vote: 5-0. Motion passed.

Motion: To authorize ballot submission in Cycle 2-2019 for a Line-item Revision to SEMI E129-09-12, Guide to Assess and Control Electrostatic Charge in a Semiconductor Manufacturing Facility
By / 2nd: Russell Fitzpatrick (AMAT) / Vladimir Kraz (BestESD)
Discussion: None.
Vote: 5-0. Motion passed.

Attachment 07: SEMI ESD/ESC Task Force Summary (Nov 2018)

6.4 Equipment RAMP Metrics Task Force Report
Steve Meyer reported for the E-RAMP Metrics Task Force. Of note:
  • Webinars overview of SEMI E10, E79, E58, and E116 (and how they work together) to enhance the application and correct usage of these existing Standards.
    ― Overview of Metrics Global TC and Equipment Performance Standards
• RECORDED & POSTED
  – Overview of E10
  • RECORDED & POSTED
  – Overview of E79
  • RECORDED & POSTED
  – Example Scenario and Calculations in E10, Part 1: States Transitions
    • RECORDED & POSTED
  – Sample Calculations in E10, Part 2: Fundamental Quantities and Metrics—Q2’18
    • PPT 100%, script 100%, production 100%
      • Pending posting on the web;
      • Promotional article planned for Standards Watch Newsletter in Dec 2018
  – Sample Calculations in E79—On Hold until E10 and E79 updates complete
    • PPT 100%, script 0%, production 0%

• Upcoming Activities
  – SNARF for Line-time Revision to SEMI E10-0814E, Specification for Definition and Measurement of Equipment Reliability, Availability, and Maintainability (RAM) and Utilization
  – SNARF for Line-item Revision to SEMI E79-0814E, Specification for Definition and Measurement of Equipment Productivity

Motion: To approve SNARF for Line-time Revision to SEMI E10-0814E, Specification for Definition and Measurement of Equipment Reliability, Availability, and Maintainability (RAM) and Utilization

By / 2nd: Steve Meyers (Intel) / Vladimir Kraz (BestESD)

Discussion: None.

Vote: 6-0. Motion passed.

Motion: To approve SNARF for a Line-item Revision to SEMI E79-0814E, Specification for Definition and Measurement of Equipment Productivity

By / 2nd: Steve Meyers (Intel) / Vladimir Kraz (BestESD)

Discussion: None.

Vote: 6-0. Motion passed.

Action Item: (David B., Inna S.) To post E10 Part II webinar online and update corresponding landing pages.

Action Item: (David B) Submit Standards Watch Article material to promote newly released webinar.

Action Item: (Inna S., James A.) To provide statistics for existing webinars downloads/views from semi.org and Vimeo platforms.

Attachment 08: SEMI Eqp RAMP TF Report (Nov 2018)

6.5 RF Measurements Task Force Report

• No meeting / no report presented by the NA RF Measurement TF at TC Meeting.
7 Old Business
7.1 Standards Due for Five-Year Review.

Inna Skvortsova addressed the TC Chapter on this topic. Of note:

<table>
<thead>
<tr>
<th>Name</th>
<th>Due for Review</th>
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</tr>
</thead>
<tbody>
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<td>Assigned to ESD/ESC TF</td>
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<td>SEMI E43-0813</td>
<td>08/21/2018</td>
<td><em>Guide for Electrostatic Measurements on Objects and Surfaces</em></td>
<td>Assigned to ESD/ESC TF for review</td>
</tr>
<tr>
<td>SEMI E165-0813</td>
<td>8/30/2018</td>
<td><em>Guide for a Comprehensive Equipment Training System When Dedicated Training Equipment is not Available</em></td>
<td>TC cochair is reaching out to Cymer to support document review</td>
</tr>
<tr>
<td>SEMI E150-0314</td>
<td>3/14/2019</td>
<td><em>Guide for Equipment Training Best Practices</em></td>
<td>TC cochair is reaching out to Cymer to support document review</td>
</tr>
<tr>
<td>SEMI E149-0314</td>
<td>3/14/2019</td>
<td><em>Guide for Equipment Supplier-Provided Documentation for the Acquisition and Use of Manufacturing Equipment</em></td>
<td>TC cochair is reaching out to Cymer to support document review</td>
</tr>
<tr>
<td>SEMI E79-0814E</td>
<td>3/14/2019</td>
<td><em>Specification for Definition and Measurement of Equipment Productivity</em></td>
<td>In review by the Eq. RAMP TF</td>
</tr>
</tbody>
</table>

Action Item: (David B.) To contact Cymer/ASML in Q1-2019 to support documents due for 5-year review.

7.2 SNARFs Approaching Three-Year Review
The TC Chapter reviewed the SNARFs approaching the 3-year document development period.

- No SNARFs needed extension.

8 New Business
8.1 New TFOFs Approval
- None

8.2 New SNARFs
- New SNARFs were authorized as part of Task Force business/report.
  - Please refer to Section 6. Subcommittee and Task Force Reports of the meeting minutes.

8.2 New Ballots
- New ballots were authorized as part of the Task Force business/report section.
  - Please refer to Section 6. Subcommittee and Task Force Reports of the meeting minutes.

9 Action Items Review
9.1 Previous Meeting(s) Action Items
Inna Skvortsova (SEMI) reviewed open action items. These can be found in the Previous Meeting(s) Action Items table at the beginning of these minutes.

9.2 New Action Items

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

10 Next Meeting and Adjournment

The next meeting is scheduled for April 3, 2019 at SEMI HQ, CA. See http://www.semi.org/en/events for the current list of meeting schedules.

Having no further business, a motion was made to adjourn.

Respectfully submitted by:
Inna Skvortsova
Sr. Standards Coordinator
SEMI North America
Phone: 408-943-6996
Email: iskvortsova@semi.org

Minutes tentatively approved by:
David Bouldin (Fab Consulting), Cochair 1/29/2019
Vladimir Kraz (BestESD), Cochair 1/16/2019

Table 13 Index of Available Attachments*1

<table>
<thead>
<tr>
<th>Title</th>
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<tbody>
<tr>
<td>(Attachment 01) SEMI Standards Required Meeting Elements.ppt</td>
<td>(Attachment 06) SEMI EMC Task Force Summary (Nov 2018)</td>
</tr>
<tr>
<td>(Attachment 02) NA Metrics TC Meeting Minutes (July 2018).pdf</td>
<td>(Attachment 07) SEMI ESD Task Force Report (Nov 2018).ppt</td>
</tr>
<tr>
<td>(Attachment 04) Metrics Japan TC Liaison (Nov 2018)</td>
<td></td>
</tr>
<tr>
<td>(Attachment 05) CCC Test Methods Task Force Report (Nov 2018)</td>
<td></td>
</tr>
</tbody>
</table>

*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 Inna Skvortsova at the contact information above.