TC Chapter Announcements
None.

Next TC Chapter Meeting
February 1, 2018 10:00 – 12:00
#305, Coex, Seoul, Korea

Table 1 Meeting Attendees
*Italicics* indicate virtual participants

<table>
<thead>
<tr>
<th>Company</th>
<th>Last</th>
<th>First</th>
<th>Company</th>
<th>Last</th>
<th>First</th>
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</thead>
<tbody>
<tr>
<td>Amkor</td>
<td>Yun</td>
<td>Deukyoung</td>
<td>Kornic Automation</td>
<td>Jeon</td>
<td>Jeffery</td>
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<tr>
<td>ASE</td>
<td>Lee</td>
<td>Doowon</td>
<td>Lam Research Korea</td>
<td>Lee</td>
<td>Kelvin</td>
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<tr>
<td>ASM</td>
<td>Jung</td>
<td>Il Gun</td>
<td>Linkgenesis</td>
<td>Cha</td>
<td>Kyoughwan</td>
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<td>Kim</td>
<td>Risson</td>
<td>Linkgenesis</td>
<td>Kim</td>
<td>Byeonghee</td>
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<tr>
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<td>Jongsub</td>
<td>Linkgenesis</td>
<td>Pack</td>
<td>Inhyeok</td>
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<tr>
<td>Coherent</td>
<td>Pfaffinger</td>
<td>Josef</td>
<td>Linkgenesis</td>
<td>Chun</td>
<td>J.G</td>
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<td>Doople</td>
<td>Kim</td>
<td>Hyungsu</td>
<td>SK hynix</td>
<td>Ahn</td>
<td>Chulhong</td>
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<td>Hanamicorn</td>
<td>Kim</td>
<td>Junyoung</td>
<td>Tokyo Electron Korea</td>
<td>Im</td>
<td>Byoungmin</td>
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<td>Wonhyung</td>
<td>WI SOL</td>
<td>Jung</td>
<td>C.L</td>
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<tr>
<td>Kornic Automation</td>
<td>Kim</td>
<td>Kyung Tae</td>
<td>SEMI HQ</td>
<td>Amano</td>
<td>James</td>
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Table 2 Leadership Changes
None.
Table 3 Ballot Results

<table>
<thead>
<tr>
<th>Document #</th>
<th>Document Title</th>
<th>Committee Action</th>
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</thead>
<tbody>
<tr>
<td>4946D</td>
<td>Line Item Revisions to SEMI E87-1017, Specification for Carrier Management (Cms) and E87.1-1017 Specification for SECS-II Protocol for Carrier Management (CMS); Adding Carrier Ready to Unload Prediction Feature</td>
<td>Passed, Ratification ballot to be issued</td>
</tr>
<tr>
<td>5382A</td>
<td>New Standard, Specification for Equipment Generic Counter Model, EGCM</td>
<td>Failed ballot and sent for rework</td>
</tr>
<tr>
<td>6301</td>
<td>Line Item Revision to E142-0211, Specification for Substrate Mapping, Adding packaging raw materials traceability method</td>
<td>Failed ballot and sent for rework</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 4 Authorized Activities

None.

Table 5 Authorized Ballots

<table>
<thead>
<tr>
<th>#</th>
<th>When</th>
<th>SC/TF/WG</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4946D</td>
<td>Cycle3, 2018</td>
<td>GEM300 TF</td>
<td>Line Item Revisions to SEMI E87-1017, Specification for Carrier Management (Cms) and E87.1-1017 Specification for SECS-II Protocol for Carrier Management (CMS); Adding Carrier Ready to Unload Prediction Feature</td>
</tr>
<tr>
<td>5832B</td>
<td>Cycle 4 or 5, 2018</td>
<td>GEM300 TF</td>
<td>New Standard, Specification for Equipment Generic Counter Model</td>
</tr>
<tr>
<td>6301A</td>
<td>Cycle 3 or 4, 2018</td>
<td>ABFI TF</td>
<td>Line Item Revision to E142-0211(Reapproved 1016) Specification for Substrate Mapping: Adding packaging raw materials traceability method</td>
</tr>
</tbody>
</table>

Table 6 New Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>20180201-1</td>
<td>Natalie Shim</td>
<td>Update 6319 (Line Item Revision to E87) activities to Korea GEM300 TF.</td>
</tr>
<tr>
<td>20180201-2</td>
<td>Natalie Shim</td>
<td>Update &amp; Share SEMI Smart Manufacturing Group activities to Korea I&amp;C TC Chapter for further collaboration</td>
</tr>
</tbody>
</table>

Table 7 Previous Meeting Action Items

<table>
<thead>
<tr>
<th>Item #</th>
<th>Assigned to</th>
<th>Details</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>20171020-1</td>
<td>Natalie Shim</td>
<td>Share SNARF 6287 (Line Item Revision to E87) with GEM300 TF.</td>
<td>Done</td>
</tr>
<tr>
<td>20171020-2</td>
<td>James Amano</td>
<td>Prepare a report that contains the differences between GEM300 and GEM300A and share it with TC chapter.</td>
<td>Done</td>
</tr>
<tr>
<td>20171020-3</td>
<td>Natalie Shim</td>
<td>Coordinate with Taiwan BFI TF and Korea ABFI TF to prevent activity duplication</td>
<td>Done</td>
</tr>
<tr>
<td>20171020-4</td>
<td>Natalie Shim</td>
<td>Share the information about E167 and E175 (energy control solution) with manufacturing companies for their reference.</td>
<td>Postponed</td>
</tr>
<tr>
<td>20171020-5</td>
<td>Natalie Shim</td>
<td>Share the draft of EDA freeze 3 to members</td>
<td>Done</td>
</tr>
</tbody>
</table>
1 Welcome, Reminders, and Introductions

Chulhong Ahn (SK hynix) called the meeting to order at 10:00. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment: 01, Meeting Reminders

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

Motion: Approve the previous meeting minutes with Editorial Change
By / 2nd: Byoungmin Im (TEL) / Hyungsu Kim (Doople)
Discussion: None
Vote: 8-0, Motion Carried

Attachment: 02, Previous Meeting Minutes

3 Liaison Reports

3.1 Information & Control Japan TC Chapter

James Amano reported for the I&C Japan TC Chapter. Of note:

- Announcement
  - Diagnostic Data Acquisition TF newly formed. Mitsune Sakakmoto (ZAMA Consulting) and Takashi Nakagawa (Yokogawa Solution Service) appointed as co-leaders.
  - Y. Takasaki (Screen Semiconductor Solutions) stepped down from GEM300 TF leader. Y. Toyoshima (Hitachi High-Technologies) appointed as successor.
  - Fiducial Mark Interoperability TF is discharged.

- Newly Authorized SNARF
  - Sensor Bus TF
    - SNARF 6330 (Line Item Revisions to E54.17 Specification of Sensor Actuator Network for A-Link)
    - SNARF 6331 (Line Item Revisions to E54.19 Specification of Sensor Actuator Network for MECHATROLINK)

- Upcoming ballots for cycle 2, 2018
  - 6319 (Line Item Revision to E87-1017: Specification for Carrier Management (CMS))
  - 6300 (Standard: Guide for EDA Freeze Version)
  - 6330 (Line Item Revisions to E54.17 Specification of Sensor Actuator Network for A-Link)
  - 6331 (Line Item Revisions to E54.19 Specification of Sensor Actuator Network for MECHATROLINK)

- Next meeting Schedule
  - Thursday, April 16, 2018 13:30 – 17:00 at SEMI Japan Office, Tokyo, Japan
  - 2018 meeting schedule (tentative): April, June, and September of 2018

Attachment: 03, Japan Liaison report

3.2 Information & Control North America TC Chapter
James Amano reported for I&C NA TC Chapter. Of note:

- Announcement
  - Chris Maloney (Intel) is appointed as GEM 300 TF new leader
- Document Review Summary (Cycle 5, 2017)
  - Passed
    - 6005 (Line Item Revision to SEMI E30-0717, Generic Model for Communications and Control of Manufacturing Equipment, GEM)
    - 6185A (Line Item Revision to SEMI E4-0699 (Reapproved 0612), SEMI Equipment Communications Standard 1 Message Transfer (SECS-I) to correct nonconforming title to: Specification for SEMI Equipment Communications Standard 1 Message Transfer (SECS-I)
    - 6238 (Reapproval of SEMI E126-0708 (Reapproved 0613), Specification for Equipment Quality Information Parameters (EQIP)
    - 6239 (Reapproval of SEMI E130.1-1104 (Reapproved 0710), Specification for SECS-II Protocol for Prober Specific Equipment Model for 300 mm Environment (PSEM300)
  - Failed
    - 6240 (Reapproval of SEMI E54.23-0513, Specification for Sensor/Actuator Network Communications for CC-Link IE Field Network)
- Upcoming ballots for Cycle 1 - 3, 2018
  - Cycle 2
    - TBD 1 Line-item Revision to SEMI E125, Specification for Equipment Self-Description (EqSD)
    - TBD 2 Line-item Revision to SEMI E134, Specification for Data Collection Management
    - TBD 3 Line Item Revision to SEMI E138, XML Semiconductor Common Components
    - TBD 4 Line Item Revision to SEMI E132, Specification for Equipment Client Authentication and Authorization
    - 6114A Line-item Revision to SEMI E5-0813, SEMI Equipment Communications Standard 2 Message Content (SECS-II) - Ballot authorized, but can be submitted only after SEMI publishes previously adjudicated version (Ballot R6089).
    - TBD 5 Line-item Revision to SEMI E54.23-0513, Specification for Sensor/Actuator Network Communications for CC-Link IE Field Network
  - Notes
    - Doc. #6174 authorized for balloting in Cycle 5-17 but is postponed by the Task Force.
    - Doc. #6236 authorized for balloting at SEMICON West, but on hold until previously adjudicated version (Doc#5872C) of the document is published.
- Diagnostic Data Acquisition (DDA) task force
  - Plan
    - Create SNARFs to develop HTTP/2 with gRPC and Protocol Buffer to replace HTTP 1.1 in the EDA standards - Revision to E125, E128, E132, E134, E138
    - Provide a Report that summarizes why a replacement technology is required and how HTTP/2 with gRPC and Protocol Buffers addresses this. This will be distributed with the new SNARFs to be created.
- Sensor Bus Task Force
  - Plan
    - New SNARF 6333 for Line-item Revision to SEMI E54.23-0513, Specification for Sensor/Actuator Network Communications for CC-Link IE Field Network
    - Under the new SNARF, the SB TF will propose additional tables for missing SDMs as line item changes to E54.23 to make it more aligned with the current SEMI E54 suite of standards.

- Energy Saving Equipment Communication (ESEC) task force
  - No meeting/update

- Generic Equipment Model 300 (GEM300) task force
  - Discussion
    - Reviewed ballot 6114A
      - E5 new stream, functions for transferring Recipes.
      - New messages could be adopted to transfer other binary, ASCII items
      - Wafer maps? Production Recipe? SEDD file? Custom items?
      - Some suggestions to improve specific text in the ballot
      - Prototyping requested up to about 2 GB recipes
      - With changes, ready for re-submission
    - No update on the E90 Ballot 5966
  - SMARF manufacturing
    - Multiple ideas shared to target future SMART Manufacturing as it relates to GEM, GEM 300.
    - GEM Light (very small set of messages)
    - HSMS-GS (multi-hosting)
    - Levels of adoption

- Process Control Systems (PCS) task force
  - No meeting
  - Plan
    - Expand E133/E133.1 to support prediction capabilities such as Virtual Metrology and Predictive Maintenance

- Graphical User Interfaces (GUI) task force
  - No leadership change or authorized activities.
  - Discussion
    - Ongoing work on Revision to SEMI E95
    - Discussed changes primarily to graphics, secondarily to text
    - Current E95 is not compliant with the latest Style Guide, editorial changes to comply will be completed prior to balloting.
    - Suggestion to place Small Screen Device (SSD) GUI information in Related Information section of the document.
    - SSD displays, apps & GUIs continue to morph quite rapidly.
- Only limited information can be specified.
- Inquiry will be made as to the availability of SEMATECH documents (in the Related Documents section of E95).
- Next Meetings are scheduled on April 11, 2018 at SEMI HQ, CA

**Attachment:** 04, North America Liaison report

### 3.3 Information & Control Taiwan TC Chapter

James Amano reported for the Information & Control Taiwan TC Chapter. Of note:

- Backend Factory Integration task force
  - Drafting Doc. 5800 "New Standard: Specification of Backend Die Traceability"
  - Proposed Document schedule
    - 1st Draft by: 05/25/2018
    - Letter Ballot by: 11/16/2018
    - TC Chapter Approval By: 05/24/2019
- Next Meeting is scheduled in March, 2018 at SEMI Taiwan Office, Taipei

**Attachment:** 05, Taiwan Liaison report

### 4 SEMI Staff Report

Natalie Shim gave the SEMI Staff Report. The key items were as follows:

- SEMI Global events
- 2018 Critical Date
- SEMI Standards Publication update

**Attachment:** 06, SEMI Staff report

### 5 Ballot Review

#### 5.1 4946D (Line Item Revisions to SEMI E87-0312, Specification for Carrier Management (Cms) and E87.1-1017 Specification for SECS-II Protocol for Carrier Management (CMS); Adding Carrier Ready to Unload Prediction Feature) was adjudicated and passed and Ratification ballot will be issued.

**Motion:** Pass 4946D as A&R and Ratification ballot will be issued.

**By / 2nd:** Byeongmin Im (TEL) / Hyungsu Kim (Doople)

**Discussion:** None

**Vote:** 11-0, motion carried

#### 5.2 5832A (New Standard, Specification for Equipment Generic Counter Model, EGCM) failed committee adjudication as below and 5832B authorized.

**Motion:** Failed 5832A as the committee found that below negative is related and persuasive. And authorize 5832B in cycle 4 or 5 of 2018.

- **Voter:** Mitsuhiri Matsuda (Hitachi Ltd)
- **Negative 6:** No conventions do exist for Figure 6. Adding convention to section 7 or suing standard description such as UML is preferred.
5.3 6301 ((Line Item Revision to E142-0211, Specification for Substrate Mapping, Adding packaging raw materials traceability method)

**Motion:** Failed 6301 as the committee found that below negative is related and persuasive. And authorize 6301A in cycle 3 or 4 of 2018.

- **Voter:** Dave Huntley (Kinesys)
- **Negative 4:** Table 25 Req N
- IF X, Y, Number are optional then there must be a MatCodeMap. MapType attribute (see BinCodeMap) so that the data can be correctly represented and interpreted.
- Alternatively you could standardize on one MapType, e.g. 2DArray which is the most natural, commonly used and compact. This would be my recommendation.

**By / 2nd:** Kelvin Lee (Lam Research)/ Deukyoung Yun (Amkor Korea)

**Discussion:** None

**Vote:** 8-0, motion carried

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**Attachment:** 07, 4946D A&R  
08, 5832A Review result  
09, 6301 Review result

### 6 Subcommittee and Task Force Reports

#### 6.1 GEM300 Task Force

4946D (Line Item Revision to E87-0312, Specification for Carrier Management (CMS) and E87.1-1017, Specification for SECS-II Protocol for Carrier Management (CMS), Adding Carrier Ready to Unload Prediction Feature) and 5832A (New Standard, Specification for Equipment Generic Counter Model (EGCM)) ballot result summaries were reviewed.

#### 6.2 DDA Task Force

Hyungsu Kim (Doople) reported the coordinating status with NA DDA TF. The details will be reported after NA Fall meeting.

#### 6.3 ABFI Task Force

6301 ballot result summary was reviewed.

### 7 Old Business

None

### 8 New Business

None

### 9 Action Item Review

See the action item list in above.
10 Next Meeting and Adjournment

The next meeting is scheduled for June 8, 2018 at SEMI Korea office, Seoul, Korea

Having no further business, a motion was made to adjourn. Adjournment was at 12:00.

Respectfully submitted by:
Natalie Shim
Sr. Specialist, Standards
SEMI Korea
Phone: 82.2.531.7808
Email: eshim@semi.org

Minutes approved by:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chulhong Ahn (SK Hynix), Co-chair</td>
<td>&lt;Date approved&gt;</td>
</tr>
<tr>
<td>Hyungsu Kim (Doople), Co-chair</td>
<td>&lt;Date approved&gt;</td>
</tr>
<tr>
<td>Kevin Lee (Lam Research), Co-chair</td>
<td>&lt;Date approved&gt;</td>
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Table 8 Index of Available Attachments#1

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#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 [SEMI Staff Name] at the contact information above.