North America Information & Control Committee
Meeting Summary and Minutes

SEMI® International Standards

SEMICON West 2013 Meetings
10 July 2013, 0800 – 1630 Pacific Time
San Francisco Marriott Marquis Hotel in San Francisco, California

Committee Announcements
Next Committee Meeting
NA Standards Fall 2013 Meetings
Wednesday 30 October 2013, 0800 – 1630 Pacific Time
SEMI Headquarters in San Jose, California

Table 1 Meeting Attendees

Italics indicate virtual participants
Co-Chairs: Jack Ghiselli (Ghiselli Consulting), Lance Rist (Industry Consultant), Brian Rubow (Cimetrix)
SEMI Staff: Paul Trio

Company	Last	First	Company	Last	First
AIS Automation	Mueller	Bert	Korea Semiconductor Industry Association (KSIA)	Kim	Dong Hyun
Cimetrix	Rubow	Brian	PEER Group	McKenzie	Alison
Dainippon Screen	Nishimura	Takayuki	Rofin-Sinar Laser	Pfaffinger	Josef
Edwards	Czerniak	Michael	Samsung	Kim	Hyungsu
GLOBALFOUNDRIES	Marshall	Les	SEMATECH	Ferrell	Jackie
GLOBALFOUNDRIES	Rothe	Jan	Tokyo Electron	Asakawa	Terry
Hitachi-Kokusai	Matsuda	Mitsuhiro	Tokyo Electron	Murata	Naoko
Industry Consultant	Rist	Lance	Tokyo Electron	Sakamoto	Mitch
Intel	Baxter	Michael	Tokyo Electron	Im	Byoung Min
Intel	Maloney	Chris	University of Michigan	Moyne	James
ISMI	Crispieri	Gino			
IT Innovation	Kim	Won Tae	SEMI	Trio	Paul

Table 2 Leadership Changes

Group	Previous Leader	New Leader
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.

Document #	Document Title	Committee Action
5411B	New Standard: Specification for Equipment Energy Saving Mode Communications (EESM)	**Passed** as balloted.
5453A	Revision to Add a New Subordinate Standard: Specification for SECS-II Protocol for Equipment Energy Saving Mode Communications to SEMI Draft Document 5411B, New Standard: Specification for Equipment Energy Saving Mode Communications (EESM)	**Passed** as balloted.
5454B	Line Item Revisions to SEMI E30-0611, Specification for Generic Equipment Model (GEM) Standard and SEMI E5-0712, SEMI Equipment Communications Standard 2 Message Content (SECS-II)	
Line Item 1	Modifications to the definition of alarms and alarm category definitions	**Failed**, to be reballoted
5509A	Line Item Revision to SEMI E94-0312, Specification for Control Job Management	
Line Item 1	Clarify the entry for OutputRule in Table 2	**Failed**, to be reballoted
5589	Revisions to: - SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM), SEMI E30.1, Inspection and Review Specific Equipment Model (ISEM), SEMI E82, Specification for Interbay/Intrabay AMHS SEM (IBSEM), SEMI E88, Specification for AMHS Storage SEM (Stocker SEM), SEMI E91, Specification for Prober Specific Equipment Model (PSEM), SEMI E122.1, Specification for SECS-II Protocol for Tester Specific Equipment Model (TSEM), and SEMI E123.1, Specification for SECS-II Protocol for Handler Specific Equipment Model (HSEM)	
Line Item 1	Remove all references to SML and SML Notation from E30	**Failed**, to be reballoted
Line Item 2	Remove all references to SML and SML Notation from additional standards	**Failed**, to be reballoted

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
5618	SNARF	GEM300 TF	New Standard: Specification for Preservation of Recipe Integrity
5619	SNARF	GEM300 TF	Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template
5620	SNARF	GEM300 TF	Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complementary File: SECS-II Message Notation using XML
5650	SNARF	Process Control Systems (PCS) TF	Line Item Revisions to SEMI E133, Specification for Automated Process Control Systems Interface and SEMI E133.1, Provisional Specification for XML Messaging for Process Control Systems (PCS)

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
5274B	Cycle 5, 2013 (or C6-13)	Sensor Bus TF	Revision to Add a New Subordinate Standard Specification for Sensor/Actuator Network Specific Device Model of a Generic Equipment Add-On Sensor (ADDON) to SEMI E54, Sensor/Actuator Network Standard
5454C	Cycle 6, 2013	GEM300 TF	Line Item Revisions to SEMI E30, Generic Equipment Model (GEM) Standard and SEMI E5, SEMI Equipment Communications Standard 2 Message Content (SECS-II)
5507	Cycle 6, 2013	Diagnostic Data Acquisition (DDA) TF	Revisions to: - SEMI E120, Specification for the Common Equipment Model (CEM), - SEMI E120.1, XML Schema for the Common Equipment Model (CEM), - SEMI E125, Specification for Equipment Self Description (EqSD), - SEMI E125.1, Specification for SOAP Binding for Equipment Self Description (EQSD), - SEMI E128, Specification for XML Message Structures, - SEMI E132, Specification for Equipment Client Authentication and Authorization - SEMI E132.1, Specification for SOAP Binding for Equipment Client Authentication and Authorization (ECA), - SEMI E134, Specification for Data Collection Management - SEMI E134.1, Specification for SOAP Binding of Data Collection Management (DCM), - SEMI E138, XML Semiconductor Common Components - SEMI E145, Classification for Measurement Unit Symbols in XML - SEMI E164, Specification for EDA Common Metadata
5509B	Cycle 6, 2013	GEM300 TF	Revision to SEMI E94, Specification for Control Job Management
5589A	Cycle 6, 2013	GEM300 TF	Revisions to: - SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM), - SEMI E30.1, Inspection and Review Specific Equipment Model (ISEM), - SEMI E82, Specification for Interbay/Intrabay AMHS SEM (IBSEM), - SEMI E88, Specification for AMHS Storage SEM (Stocker SEM), - SEMI E91, Specification for Prober Specific Equipment Model (PSEM), - SEMI E122.1, Specification for SECS-II Protocol for Tester Specific Equipment Model (TSEM), and - SEMI E123.1, Specification for SECS-II Protocol for Handler Specific Equipment Model (HSEM)
5619	Cycle 6, 2013	GEM300 TF	Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template

Table 6 New Action Items

Item #	Assigned to	Details
2013Jul #01	Paul Trio	Send copies of approved SNARFs to I&C GCS
2013Jul #02	Paul Trio, NA I&C Co-chairs	Contact Sort Map TF and AMHS IBSEM TF leaders and determine whether these TFs wish to remain chartered or disband.
2013Jul #03	Paul Trio	Include in the NA I&C Committee Fall 2013 meeting agenda: Japan EISS TF Update
2013Jul #04	Paul Trio	Send the NA I&C Fall 2013 meeting schedule to Jackie Ferrell to take to the NA Metrics committee's discussion and planning of its Fall 2013 meeting schedule.
2013Jul #05	Paul Trio	Consult with the ISC Regulations Subcommittee on what should be done to SEMI E30 in light of the existing SML copyright issue.

Table 7 Previous Meeting Actions Items

Item #	Assigned to	Details	Status
2012Oct #02	Paul Trio	Draft SNARF and ballot proposal for E30 revision (reorganization of introductory sections) and send to GEM300 TF leaders for review.	Open

1 Welcome, Reminders, and Introductions

Jack Ghiselli, committee co-chair, called the meeting to order at 8:10 AM. 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.

Attachment: 01, SEMI Standards Required Meeting Elements

2 Review of Previous Meeting Minutes

The committee reviewed the minutes of the previous meeting held April 3 in conjunction with the NA Standards Spring 2013 meetings.

Motion: Accept the minutes of the previous meeting as written.
By / 2nd: Gino Crispieri (ISMI) / Mike Czerniak (Edwards)
Discussion: None
Vote: 17-0 in favor. Motion passed.

Attachment: 02, NA I&CC Spring 2013 meeting (April 3) minutes

3 Liaison Reports

3.1 *SEMI Staff Report*

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

- 2013 Global Calendar of Events
    - o SOLARCON India (August 1-3, Bangalore)
    - o SEMICON Taiwan / LED Taiwan (September 4-6, Taipei)
    - o SEMICON Europa (October 8-10; Dresden, Germany)
    - o PE2013 – Plastic Electronics Exhibition and Conference (October 8-10; Dresden, Germany)
    - o PV Taiwan (October 30 – November 1, Taipei)
    - o SEMICON Japan (December 4-6, Chiba)
- [early] 2014 Global Calendar of Events
    - o SEMICON Korea / LED Korea (February 12-14, Seoul)
- Committees meeting at SEMICON West 2013
    - o 3DS-IC | EHS | Facilities & Gases | HB-LED | Information & Control | Liquid Chemicals | MEMS/NEMS | Metrics | Microlithography | PIC | PV/PV Materials | Silicon Wafer | Traceability
- Standards Program at SEMICON West 2013
    - o *Silicon Wafers – Future Standardization to Enable the Transition* (Wednesday, July 10)
        - ▪ Agenda:
            - • Towards 450 mm Silicon Wafers, *Mike Goldstein* (Intel)

- Notchless Wafer, *Pinyen Lin* (G450C)

- New Edge Exclusion Proposal, *Kwangwook Lee* (G450C)

- Wafer Geometry for Advanced Nodes, *Gerd Pfeiffer* (IBM)

- Challenges during 450 mm Silicon Processing, *Hisashi Furuya* (SUMCO)

- 450 mm Facilities Planning, *Allen Ware* (F450C)

- G450C Component Lift Program Update, *Les Marshall* (G450C)

- Standards Publications Report
  - April 2013 Cycle
    - New Standards – 1, Revised Standards – 6, Reapproved Standards – 8, Withdrawn Standards – 0
  - May 2013 Cycle
    - New Standards – 5, Revised Standards – 3, Reapproved Standards – 3, Withdrawn Standards – 0
  - June 2013 Cycle
    - New Standards – 10, Revised Standards – 2, Reapproved Standards – 4, Withdrawn Standards – 0, Total in portfolio – 887 (includes 94 Inactive Standards)

- NA Standards Fall 2013 Meetings
  - October 28-31
  - SEMI Headquarters in San Jose, California
  - Inviting local companies willing and able to host some of the meetings to maintain one-week format.

- Technical Ballot Critical Dates for NA Standards Fall 2013 Meetings
  - Cycle 5: due July 18 / July 29 – August 28
  - Cycle 6: due August 15 / August 29 – September 30

Attachment: 03, SEMI Standards Staff Report

3.2 *Europe Equipment Automation Committee (Information & Control, Metrics, Physical Interfaces & Carriers)*

Paul Trio presented the Europe I&C liaison report. The key items were as follows:

- Leadership
  - Alfred Honold (InReCon)
  - Lothar Pfitzner (Fraunhofer IISB)
  - Frank Petzold (Trustsec)
- Next Meeting: October 7-10 at SEMICON Europa 2013
- Disbanded Task Forces
  - Integrated Measurement TF, SANPro TF
- Staff Contact: Yann Guillou (Business Development and Standards Manager, yguillou@semi.org)

Attachment: 04, Europe Liaison Report

3.3 *Japan Information & Control Committee*

Mitsuhiro Matsuda presented the Japan I&C liaison report. The key items were as follows:

- Document Review Summary (Japan Standards Spring 2013 Meetings)

Document #	Description	Committee Action
5422	New Standard: Guide for Equipment Information System Security	Failed and was returned to the Task Force for rework
5423A	Line-item Revision to SEMI E40.1-0312 SECS-II Support for Processing Management Standard and SEMI E5-0712 SEMI Equipment Communications Standard 2 Message Content (SECS-II); Add mapping to PPID for RecID	████████████████
LI 1	Add mapping to PPID for RecID	Passed as balloted.
LI 2	Editorial Change of E5-0712	Superclean

- SNARF #5367 (Line item revision to E87, Specification for Carrier Management (CMS). Load Port Transfer Error Indication) was withdrawn during the Japan Standards Spring 2013 Meetings.

- Approved SNARFs (Japan Standards Spring 2013 Meetings)

Document #	Description	SC / TF / WG
5600	Line-item revision to SEMI E5: SEMI Equipment Communications Standard 2 Message Content (SECS-II), SEMI E40: Standard for Processing Management and E40.1: SECS-II Support for Processing Management Standard, the Removal of inconsistencies	GEM300 TF
5601	New Standard: Specification for Wafer Object Model	GEM300 TF
5602	Reapproval for SEMI E54.19-0308 Specification for Sensor/Actuator Network for MECHATROLINK	Sensor Bus TF
5603	Revision to SEMI E54.12-0701E (Reapproved 1211): Specification for Sensor/Actuator Network Communications for CC-Link	Sensor Bus TF

- Upcoming ballots to be reviewed at Japan Standards Fall 2013 Meetings

Document #	Description	SC / TF / WG
5486	New Standard: Specification for Predictive Carrier Logistics Information from Equipment to be used for Predictive Carrier Logistics Management	Predictive Carrier Logistics (PCL) TF
5538*	New Standard: Specification for Production Recipe Cache mechanism to Be Used for Production Recipe Protection and Synchronization between Factory System and Equipment	GEM300 TF
5602*	Reapproval for SEMI E54.19-0308 Specification for Sensor/Actuator Network for MECHATROLINK	Sensor Bus TF
5603*	Revision to SEMI E54.12-0701E (Reapproved 1211): Specification for Sensor/Actuator Network Communications for CC-Link	Sensor Bus TF

* These three documents were approved to submit for cycle 5 or 6. In case submitted for cycle 6, the document review will be postponed.

- Equipment Information System Security (EISS) TF
  - #5422A: "New Standard: Guide for Equipment Information System Security"
    - Ballot submission for Cycle 6 was approved at the Japan I&C Committee meeting on June 19.

- Sensor Bus TF
  - #5602: "Reapproval for SEMI E54.19-0308, Specification for Sensor/Actuator Network for MECHATROLINK"
    - SNARF and Ballot submission for Cycle 5 or 6 was approved at the Japan I&C Committee meeting on June 19.
  - #5603: "Revision to SEMI E54.12-0701E (Reapproved 1211), Specification for Sensor/Actuator Network Communications for CC-Link"
    - Add Vacuum Pump SDM mapping.
    - SNARF and Ballot submission for Cycle 5 or 6 was approved at the Japan I&C Committee meeting on June 19.
- GEM300 TF
  - #5367: Revision to SEMI E87, Load Port Transfer Error Indication
    - TF decided to disband this activity because it cannot solve the problem only in the condition of Load Port Transfer State of SEMI E87
  - #5423A: Revision to SEMI E40.1 and SEMI E5, Add mapping to PPID for RecID
    - Balloted in Cycle 2-2013 and TF concluded 2 negatives as related and not technically persuasive, and decided to propose to I&C Committee to pass as balloted
    - Passed as balloted at the Japan I&C Committee meeting on April 10 and passed at A&R in June, to be published soon.
  - Ballot #5538: New Standard: Specification for Production Recipe Cache
    - Ballot was approved to be submitted for Cycle 5 or 6 at the Japan I&C Committee meeting on June 19.
  - New SNARF #5600: Line-item revision to SEMI E5, SEMI E40, and E40.1; Removal of inconsistencies in Process Job Attributes
    - SNARF was approved at the Japan I&C Committee meeting on June 19.
  - New SNARF #5601: New Standard: Specification for Wafer Object Model
    - Introduce Wafer Object and its behavior.
    - SNARF was approved at Japan I&C Committee meeting on June 19.
  - Collaboration with NA GEM300 TF
    - #5454 Alarm Category
- Predictive Carrier Logistics (PCL) TF
  - #5486: "New Standard: Specification for Predictive Carrier Logistics Information from Equipment to be used for Predictive Carrier Logistics Management (PCL)"
    - SNARF revision and ballot submission for Cycle 5 were approved at the Japan I&C Committee meeting on June 19.
- New Task Force: Japan I&CC Maintenance
  - TFOF approved via GCS in June 2013
  - Leaders: Mitsuhiro Matsuda (Hitachi Kokusai Electric), Hideaki Ogihara (Algo System)
  - "Revision to SEMI E98 (Provisional Specification for Object-Based Equipment Model) and SEMI E98.1 (Provisional Specification for SECS-II Protocol for The Object-Based Equipment Model)"
    - Remove provisional.
  - SNARF and ballot submission for Cycle 5 were approved via GCS in June 2013. GCS voting at the end of June.
- Next meeting: September 19 for the Japan Fall 2013 Meetings (SEMI Japan Office in Tokyo)
- Japan I&CC 2013 Meeting Schedule
  - Fall in September 19, 2013
  - Winter in December 6, 2013 (tentative)

- - o Spring in April, 2014 (TBD)
    - o Summer in June, 2014 (TBD)
- Staff Contact: Chie Yanagisawa (cyanagisawa@semi.org)

Attachment: 05, Japan I&C Liaison Report

3.4 *Korea Information & Control Committee*

Hyungsu Kim presented the Korea I&C liaison report. The key items were as follows:

- Next meeting: July 19, 2013 at SEMI Korea Office (Seoul)
- Major Updates
  - o Reviewed Ballot (Cycle 7, 2012 – Cycle 2, 2013)
    - 5320A (E116 Revision, Equipment Performance Tracking) – Failed
    - 4946A (E87 Revision, Specification for Carrier Management [CMS]) – Failed
    - 5386A (E94 Revision, Specification for Control Job Management, Enhancement of Material Redirection Mode) – Passed
      - Document 5386 also passed procedural review.
- GEM300 TF
  - o 4946B (E87 Revision)
    - Approved for Cycle 4 ballot submission, but the author decided to postpone ballot schedule because it needs more time to draft. It will be rescheduled at the next meeting.
  - o 5320B (E116 Revision)
    - On Cycle 3 balloting
  - o 5386A (E94 Revision)
    - Passed committee and A&R review. It is expected to be published soon.
- DDA TF
  - o No update
- Staff Contact: Natalie Shim (eshim@semi.org)

Attachment: 06, Korea I&C Liaison Report

3.5 *Taiwan Information & Control Committee*

No activities to report.

3.6 *Integrated Measurement Association (IMA)*

James Moyne informed the committee that the Advanced Process Control (APC) Conference XXV 2013 will take place on October 14-17 at the University of Michigan in Ann Arbor, MI. The conference will address Advanced Process Control needs and solutions for high volume manufacturing in the semiconductor and other related industries.

Attachment: 07, APC Conference XXV 2013 Information

4 Ballot Review

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.

NOTE 1: Committee adjudication on Cycles 3 and 4 ballots are detailed in the Audits & Reviews (A&R) Subcommittee Forms for procedural review. These A&R forms are available as attachments to these minutes. The attachment number for each document is provided below the summary tables.

4.1 Cycle 3 Ballots

Document #	Document Title	Committee Action
None		

4.2 Cycle 4 Ballots

Document #	Document Title	Committee Action
5411B	New Standard: Specification for Equipment Energy Saving Mode Communications (EESM)	**Passed** as balloted.
5453A	Revision to Add a New Subordinate Standard: Specification for SECS-II Protocol for Equipment Energy Saving Mode Communications to SEMI Draft Document 5411B, New Standard: Specification for Equipment Energy Saving Mode Communications (EESM)	**Passed** as balloted.
5454B	Line Item Revisions to SEMI E30-0611, Specification for Generic Equipment Model (GEM) Standard and SEMI E5-0712, SEMI Equipment Communications Standard 2 Message Content (SECS-II)	
Line Item 1	Modifications to the definition of alarms and alarm category definitions	**Failed**, to be reballoted
5509A	Line Item Revision to SEMI E94-0312, Specification for Control Job Management	
Line Item 1	Clarify the entry for OutputRule in Table 2	**Failed**, to be reballoted
5589	Revisions to: - SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM), - SEMI E30.1, Inspection and Review Specific Equipment Model (ISEM), - SEMI E82, Specification for Interbay/Intrabay AMHS SEM (IBSEM), - SEMI E88, Specification for AMHS Storage SEM (Stocker SEM), - SEMI E91, Specification for Prober Specific Equipment Model (PSEM), - SEMI E122.1, Specification for SECS-II Protocol for Tester Specific Equipment Model (TSEM), and - SEMI E123.1, Specification for SECS-II Protocol for Handler Specific Equipment Model (HSEM)	
Line Item 1	Remove all references to SML and SML Notation from E30	**Failed**, to be reballoted
Line Item 2	Remove all references to SML and SML Notation from additional standards	**Failed**, to be reballoted

Attachment: 08, Ballot Review for Doc. 5411B

09, Ballot Review for Doc. 5453A

10, Ballot Review for Doc. 5454B

11, Ballot Review for Doc. 5509A

12, Ballot Review for Doc. 5589

5 Task Force Reports

5.1 *Diagnostic Data Acquisition (DDA) Task Force*

Gino Crispieri reported for the DDA Task Force. The key items were as follows:

- Attendance: 13 in person, 1 attendee via teleconference, 1 attendee via GoToMeeting
- Ballot Plans:
    - 5507 for Cycle 6, 2013 to address Complementary Files and resolve items from the TF issue list
        - Revisions to:
        SEMI E120, Specification for the Common Equipment Model (CEM),
        SEMI E120.1, XML Schema for the Common Equipment Model (CEM),
        SEMI E125, Specification for Equipment Self Description (EqSD),
        SEMI E125.1, Specification for SOAP Binding for Equipment Self Description (EQSD),
        SEMI E128, Specification for XML Message Structures,
        SEMI E132, Specification for Equipment Client Authentication and Authorization
        SEMI E132.1, Specification for SOAP Binding for Equipment Client Authentication and Authorization (ECA),
        SEMI E134, Specification for Data Collection Management
        SEMI E134.1, Specification for SOAP Binding of Data Collection Management (DCM),
        SEMI E138, XML Semiconductor Common Components
        SEMI E145, Classification for Measurement Unit Symbols in XML
        SEMI E164, Specification for EDA Common Metadata

Attachment: 13, Diagnostic Data Acquisition Task Force Report

5.2 *Energy Saving Equipment Communication Task Force*

Gino Crispieri reported for the Energy Saving Equipment Communication Task Force. The key items were as follows:

- Attendance: 10 in person
- Ballot Review
    - 5411B and 5453A passed [see section 4 of these minutes]
- New Business
    - Discussion of application of the approved standards to communicate with sub-fab equipment
    - Creation of new standard for communicating energy saving information between the production equipment and sub-fab equipment

Additional Discussion:

- Lance Rist reported that there may be potential IP associated with the latest TF discussion, but will know for sure once the ballot is drafted.

Attachment: 14, Energy Saving Equipment Communication Task Force Report

5.3 *GEM300 Task Force*

Gino Crispieri reported for the GEM300 Task Force. The key items were as follows:

- Attendance: 23 in person, 1 remote
- Ballot Review [see section 4 of these minutes]
    - 5454C (Alarm Management) – Failed & Rework
    - 5509B (Modification to Control Job Management) – Failed & Rework

- o 5589A (SML Notation Reference Removal) – Failed & Rework
- Reviewed GEM300 TF Global Activities
  - o GEM300 TF Japan
    - Production Recipe Cache (Terry Asakawa)
    - Wafer Object Standard (Naoko Murata)
  - o GEM300 TF Korea
    - Carrier Prediction (Byoung Min Im)
  - o GEM300 TF NA
    - Preservation of Recipe Integrity (Jackie Ferrell – Lance Rist)
    - SECS-II data Template (Jackie Ferrell – Gino Crispieri)
- The TF will suspend development of the SNARF #5510 activity (E157 revision) while it is waiting for more results.
  - o SEMI E157, Specification for Module Process Tracking
  - o SNARF #5510 Rationale: Implementation of the Module Process Tracking Standard (SEMI E157) helps device makers and users of equipment data collect information from specific process program (Module Recipe Execution) steps. When adopted, this standard will reduce the current amount of data being collected from wafer process equipment by providing more granular data during critical processing steps. Two assessments of SEMI E157 implementations were conducted by ISMI between 2011 and 2012 to identify any issues or practices that would accelerate the adoption and successful application of the standard in the factory. Few minor issues were identified during the assessments and these will be addressed by modifying specific sections in SEMI E157 to explain how to map recipe and process program naming conventions in reference to the process module, pre- and post-processing requirements, and recipe parameter usage during event reporting. The proposed ballot plans to address these gaps and issues with modifications to the standard.
  - o SNARF #5510 Scope: The ballot plans to make corrections and include more detail explanation to improve future implementations of SEMI E157. Areas that the ballot plans to address are: Mapping of recipe and process program names for the Process module state model, use of recipe parameter for reporting, pre and post processing correction, and any other sections that may be related to the listed topics.

Motion:	Approve discontinuation of SNARF #5510 activity
By / 2nd:	Gino Crispieri (ISMI) / Mitch Sakamoto (Tokyo Electron)
Discussion:	None.
Vote:	18-1 in favor. Motion passed.

- New SNARFs:
  - o 5618 – New Standard: Specification for Preservation of Recipe Integrity:
    - Rationale: From the list of opportunities to improve recipe creation, management, and execution, three were chosen for the first effort of the Recipe Integrity Task Force.

      1. Recipe identifier – in the semiconductor industry today, it is difficult for the user to update the identifier/name of the recipe each time the recipe content is changed. Recipes are typically created on the production equipment or on an off-tool editor provided by the equipment supplier. Factory naming conventions are difficult to enforce. The goal of this effort is to ensure that each time the content of a recipe is changed a new identifier is created for it. At the same time, the existing recipe identifier/name should be preserved if possible.

      2. Recipe header – the content of most equipment recipes is opaque to the user. This effort will add to the recipe a set of information that describes the recipe and helps with

its proper use. The goal is to preserve the existing recipe body unchanged in order to allow recipe execution to be unaffected. To the existing recipe body a wrapper (for example, in XML format) will be added that contains various data fields that describe the recipe. It is expected to include a description, creation time, creation location, available recipe variable parameters, links to any sub-recipes, and other items of data.

3. Recipe variable parameter availability – on many production equipment today, the need for recipe variable parameters outstrips the availability of those parameters. Standard language is needed to set common expectations for the equipment supplier and the user regarding the availability of recipe variable parameters.

An overall goal of backward compatibility is recognized. This may be accomplished by asking that the equipment allow the user to enable/disable these new capabilities where they may not be compatible with existing host systems.

- Scope: The SEMI specification will address three areas in its first approved version. The scope of the specification may be expanded in the future to address other areas within the scope of the GEM300 Task Force. The three areas are:

1. Recipe identifier – this will specify an approach for constructing the recipe identifier that will yield a unique value for each recipe created in the factory and help ensure that the same identifier will not be applied to different recipe content.

2. Recipe header – while preserving existing recipe format and content, a user accessible collection of information describing the recipe and its use will be added as a wrapper to the recipe body. The task force will determine the final list of information.

3. Recipe variable parameter availability – the specification will standardize a definition of which parameters within the equipment recipe must be made available as recipe variable parameters that can be set at run time (e.g., using SEMI E40 ProcessJobs).

Motion:	Approve SNARF for New Standard: Specification for Preservation of Recipe Integrity
By / 2nd:	Jackie Ferrell (SEMATECH) / Gino Crispieri (ISMI)
Discussion:	None.
Vote:	15-0 in favor. Motion passed.

- 5619 – Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template

  - Rationale: SEMATECH member companies chartered the Manufacturing Technology Program to improve current supplier practices used to provide SECS-II/GEM interface information to device makers and address the following top three issues related to the equipment interface:
  - Missing standard data and events
  - Users cannot find or identify what data to collect
  - Difficult to standardize equipment logs in the factory

  The E30 standard requires equipment to document "all variable data available from the equipment", "all collection events defined on the equipment", and "alarms". However, the interface documentation files vary across suppliers and the required information is not well organized or in a standard form. Some use text, Excel and other file formats to provide this required information. The goal of this activity is to standardize an electronic format and content information such that the categories and the order of the information are consistent and conformant to current SECS-II message queries. This way, the description of alarms, events and variable data provided via the SECS-II interface can be defined and used more efficiently by the factories.

  - Scope: The scope of this activity is to define a common documentation template associated with SEMI E30 that can be used by all suppliers and device makers. The

template would be used to document the list of Alarms, Collection Events, Data Variables, Status Variables, and Equipment Constants in a standardized manner.

The template will require the list of documented alarms, collection events, equipment constants, and status variables in the same order as the equipment lists in corresponding SECS-II messages that also provide this information (Ex. S5,F5 with a zero-length item). The file format will be well defined and standardized such that the SECS-II data is provided and managed in a consistent manner for all equipment.

Standards mapping to GEM300 standards suite and other related standards is to be determined.

Motion:	Approve SNARF for Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template
By / 2nd:	Gino Crispieri (ISMI) / Jackie Ferrell (SEMATECH)
Discussion:	None.
Vote:	13-0 in favor. Motion passed.

- o 5620 – Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complementary File: SECS-II Message Notation using XML
  - ▪ Rationale: SECS-II messages are transmitted in a binary format that is difficult for humans to read. In order to document or log SECS-II message scenarios, it is necessary to convert SECS-II messages into some formatted, ASCII notation that experts can read and understand the content of the exchanged messages. Currently, the SECS-II message notations used are diverse, difficult for software applications to consume, and not standardized. By standardizing this using XML technology, documentation and logging can be created, parsed and analyzed by any software applications that are XML capable.
  - ▪ Scope: Define an XML Schema for representing the content, structure and format of SECS-II messages. The schema could be used to establish a common communication and reporting logging format. The schema will allow the content and format of a SECS-II message to be represented in XML. The elements and attributes will identify the data type, values, and additional optional decorations as attributes. The new XML Schema will be added to SEMI E30 as a Complementary File.

    Note that the notation used to represent SECS-II messages does not change the format or content of the transmitted SECS-II messages.

  Additional Discussion:
  - ▪ Mitch Sakamoto commented that he did not understand the value of this activity. He also asked how this proposed activity would be different from SNARF #5619 (SECS-II Equipment Data Template). Gino Crispieri explained that this activity will document a list of available events and variables in a tool. A schema file will be created to represent/define a SECS-II message. Mitsuhiro Matsuda asked that if this is the case, how will the file be given to the user? Brian Rubow responded that it is outside of the scope of this SNARF since this activity is not defining the communication protocol.
  - ▪ Mitsuhiro Matsuda asked whether this activity can be combined with SNARF #5619. Brian Rubow responded that the two activities are unrelated. He added that the activities will introduce two different Complementary Files. Finally, Brian pointed out that the ballot schedule for these activities are different (i.e., one will be balloted for Cycle 6, 2013 the other in Cycle 2, 2013).
  - ▪ Bert Mueller asked whether this activity intends to replace SML. Brian Rubow responded that it would be up to the equipment supplier and device maker. The proposal will not require the use of this particular method. Instead, its scope is to offer another tool for the industry.

- Jan Rothe stated that the purpose of this activity remains unclear. Brian Rubow explained that this activity is intended for documentation purposes and logging purposes to analyze SECS-II message logs. Lance Rist stated that in working on the Wait-Time Waste activity [Metrics Committee], one of the challenges is that the communication log from the equipment is not standardized. Lance pointed out that this activity's purpose is to create an unenhanced log whereas SNARF #5619 will serve as a "decoder." Jan Rothe agreed that standardizing a notation was a good idea, but identifying the use of XML to accomplish this may be too early. He pointed out that XML is not as easy to read.

Motion:	Approve SNARF for Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complementary File: SECS-II Message Notation using XML
By / 2nd:	Brian Rubow (Cimetrix) / Jackie Ferrell (SEMATECH)
Discussion:	None.
Vote:	10-2 in favor. Motion passed.

- Ballot Plans:
  - 5454C (E5 and E30 revisions, modifications to the definition of alarms and alarm category definitions); 5509B (E94 revision, clarify OutputRule), 5589A (removal of SML and SML Notation); and 5619 will be submitted for Cycle 6, 2013.

Action Item:	2013Jul #01, Paul Trio to send copies of approved SNARFs to I&C GCS.
Attachment:	15, GEM300 Task Force Report

5.4 *Process Control System (PCS) Task Force*

Chris Maloney reported for the PCS Task Force. The key items were as follows:

- Attendance: 3
- New SNARF:
  - 5650 – Line Item Revisions to SEMI E133, Specification for Automated Process Control Systems Interface and SEMI E133.1, Provisional Specification for XML Messaging for Process Control Systems (PCS)
    - Rationale: Implementation of E133 via the E133.1 approach has revealed a few typographical and consistency errors that should be corrected. These can be addressed as line item updates to E133 and possibly E133.1.
    - Scope: Line Item modifications to E133 to correct issues uncovered in implementation. Possible line item modifications to E133.1

Motion:	Approve SNARF for Line Item Revisions to SEMI E133, Specification for Automated Process Control Systems Interface and SEMI E133.1, Provisional Specification for XML Messaging for Process Control Systems (PCS)
By / 2nd:	Chris Maloney (Intel) / James Moyne (University of Michigan)
Discussion:	Jack Ghiselli asked whether the upcoming ballot will also address Complementary Files. Chris Maloney responded that the Complementary Files are not addressed in this SNARF, but in the existing #4507 SNARF.
Vote:	13-0 in favor. Motion passed.

- Ballot Plans:
  - 5650 for Cycle 7, 2013.
  - 4507A (E133 and E133.1 revisions, fault detection and other enhancements including XML specification) for Cycle 2, 2014.

Attachment:	16, PCS Task Force Report

5.5 *Sensor Bus Task Force*

James Moyne reported for the Sensor Bus Task Force. The key items were as follows:

- Attendance: 5
- Documents in Development
    - 5274 (ADDON SDM): ballot targeted for Cycle 5 or 6, 2013
    - 5603 (CC-Link Line Item): prepared by Japan sister TF, ballot targeted for C5 or C6-13
    - 5602 (MECHATROLINK reapproval): prepared by Japan I&C, ballot targeted for C5 or C6-13
    - E54.9 (Modbus/TCP re-approval): under discussion, no schedule yet
    - E54.19 (SafetyBus/TCP re-approval): suggest to let go "Inactive"
- Ballot Plans:
    - 5274B (New E54 Subordinate Standard: Specification for Sensor/Actuator Network Specific Device Model of a Generic Equipment Add-On Sensor [ADDON]) for C5 or C6-13.

Attachment: 17, Sensor Bus Task Force Report

5.6 *Sort Map Task Force, AMHS IBSEM Task Force*

No updates.

Action Item: 2013Jul #02, Paul Trio and NA I&C Co-chairs to contact Sort Map TF and AMHS IBSEM TF leaders and determine whether these TFs wish to remain chartered or disband.

6 Proposed Meeting Schedule for NA Standards Fall 2013 Meetings

October 28-31, 2013
SEMI Headquarters
3081 Zanker Road
San Jose, California 94103

The tentative schedule is provided below:

- Monday, October 28
    - I&C Leadership (12:00 Noon to 1:00 PM)
    - PCS (1:00 PM to 3:00 PM)
    - DDA (1:00 PM to 3:00 PM)
    - Energy Saving Equipment Communication (3:00 PM to 6:00 PM)
- Tuesday, October 29
    - GEM300 (8:00 AM to 5:00 PM)
    - Sensor Bus (1:00 PM to 3:00 PM)
    - Sort Map (3:00 PM to 5:00 PM)
    - I&C GCS (5:00 PM to 6:00 PM
- Wednesday, October 30
    - I&C Committee (8:00 AM to 4:30 PM)

Additional Discussion:

- Mitch Sakamoto stated that it was not necessary to include the Japan Equipment Information System Security (EISS) TF in the NA Fall 2013 meeting schedule. However, he asked to include a Japan EISS TF update in the NA I&C Committee Fall 2013 meeting agenda.

- Jackie Ferrell also requested for a copy of the NA I&C Fall 2013 meeting schedule to take to the NA Metric's committee's discussion of its Fall 2013 meeting schedule. [Jackie Ferrell and Lance Rist are leaders of the Wait Time Waste Metrics and Methods TF under the NA Metrics Committee]

Action Item: 2013Jul #03, Paul Trio to include in the NA I&C Committee Fall 2013 meeting agenda: Japan EISS TF Update.

Action Item: 2013Jul #04, Paul Trio to send the NA I&C Fall 2013 meeting schedule to Jackie Ferrell to take to the NA Metrics committee's discussion and planning of its Fall 2013 meeting schedule.

7 Leadership and Task Force Changes

Jack Ghiselli informed the committee that Brian Rubow is now the newest co-chair for the NA I&C Committee. David Bricker (Applied Materials) had stepped down.

Lance Rist also announced that the North America Regional Standards Committee (NARSC) is looking for volunteers to serve as Members-at-Large

NARSC Member-at-Large Roles & Responsibilities

1. Technical Committee Mentoring

   - Assign to technical committees according to level of activity or other "equitable" way, not by technical area.

   - Mentor and train technical committee leaders.

   - Contact each technical committee representative a month or so prior to each NARSC meeting to find out whether:

     o   The representative will be attending the next NARSC meeting,

     o   The committee has any issues to bring before the NARSC

     o   The committee has developed a report using the NARSC template.

   - If a committee representative is unable to attend the next NARSC meeting, obtain the committee report and deliver it at the meeting and represent that committee (not voting for the TC unless a proxy is issued)

   - Work with committee representatives to develop the presentation for any issues to be raised with the NARSC at the next meeting.

   - If there is an issue and the committee representative is unable to attend the next NARSC meeting, make the presentation to the NARSC at the meeting

   - If there appears to be a problem with activity level or participation in any of the committees for which the mentor is responsible, the mentor should assist the committee in resolving these issues and report appropriately at the next NARSC meeting.

   - Assist technical committees, where necessary, to achieve cross committee communication

   - Be available during standards meetings to assist committees with procedural issues and interpretation of the regulations.

2. Work with the NARSC co-chairs to plan and conduct the annual planning meeting with emphasis on development process improvement and leadership continuity.

3. Nourish the smaller committees

4. Training

5. Meeting design

6. Develop cross-committee communication

7. Facilitate inter-regional relations

8. Other tasks depending on the experience and talents of the person, the needs of the NARSC, and the needs of the committees

.

Mitsuhiro Matsuda also pointed out that the Japan I&C Committee formed a Maintenance TF and recommended forming a Global I&C Maintenance TF. Lance Rist asked the committee whether anyone would be interested in participating. No volunteers came forward. Jack Ghiselli stated that perhaps that such a global TF can be formed in the future.

8 Old Business

8.1 Status update on action items generated from the previous meetings:

Item #	Assigned to	Details	Status
2013Apr #01	Paul Trio	Send copy of SNARF #5589 to the I&C GCS.	Incomplete. Closed.
2013 Apr #02	NA I&C Co-chairs	Contact Sort Map TF leaders and determine whether the TF wishes to remain chartered or disband.	Open
2013Apr #03	Paul Trio	Request NARSC to approve Brian Rubow (Cimetrix) as the new NA I&C co-chair.	Completed. Closed.
2013Apr #04	Mitsuhiro Matsuda	Discuss 5-Year Review of SEMI E147 with Mitch Sakamoto and report at the next NA I&C meeting.	Sakamoto-san no longer wish to pursue maintenance work on E147. Closed.
2012Oct #02	Paul Trio	Draft SNARF and ballot proposal for E30 revision (reorganization of introductory sections) and send to GEM300 TF leaders for review.	Open

8.2 *SEMI E30 Copyright Update*

* At the SEMI Spring Meetings in 2013, PEER Group reported a claim that they have copyright on SML Notation published in E30.

* SEMI cannot publish [approved balloted changes to] E30 until this is resolved.

* PEER Group has published a definition of SML on their website and documents the conditions of a royalty free license.
    o http://www.peergroup.com/resources/technicaldocumentation/secsmessagelanguage.aspx

* The Information & Control Committee must decide whether or not E30 reproduces copyrighted material.
    o Vote expected at Fall SEMI meetings.
    o I&CC proposes to form an informal working group to bring a recommendation to the I&CC.

Additional Discussion:

* Terry Asakawa asked Paul Trio to consult with the ISC Regulations SC on what should be done to SEMI E30 while this copyright issue exists.

- Brian Rubow commented that it would be essential to have such a working group because it would be difficult to handle all of the discussions at the committee meeting. Natalie Shim also stated that it would be important to have regional liaisons as this issue is being addressed.

- Brian Rubow pointed out that no official decisions will be made by the committee at this time, but simply announcing the intention to form an informal group to bring a recommendation to the I&CC.

- Alison McKenzie reported that during its review, PEER Group discovered that SML is used in various other standards. The following standards could also be affected:
    o [SEMI E5] SEMI Equipment Communications Standard 2 Message Content (SECS-II)
    o [SEMI E30.1] Inspection and Review Specific Equipment Model (ISEM)
    o [SEMI E40.1] SECS-II Support for Processing Management Standard
    o [SEMI E87.1] Provisional Specification for SECS-II Protocol for Carrier Management (CMS)
    o [SEMI E90.1] Specification for SECS-II Protocol Substrate Tracking
    o [SEMI E94.1] Specification for SECS-II Protocol for Control Job Management (CJM)
    o [SEMI E109] Specification for Reticle and Pod Management (RPMS)
    o [SEMI E109.1] Specification for SECS-II Protocol for Reticle and Pod Management (RPMS)
    o [SEMI E116.1] Specification for SECS-II Protocol for Equipment Performance Tracking (EPT)
    o [SEMI E122.1] Specification for SECS-II Protocol for Tester Specific Equipment Model (TSEM)
    o [SEMI E138] XML Semiconductor Common Components
    o [SEMI E82] Specification for Interbay/Intrabay AMHS SEM (IBSEM)
    o [SEMI E88] Specification for AMHS Storage SEM (Stocker SEM)
    o [SEMI E91] Specification for Prober Specific Equipment Model (PSEM)
    o [SEMI E123.1] Specification for SECS-II Protocol for Handler Specific Equipment Model (HSEM)

    SEMI E30, E30.1, E82, E88, E91, E122.1, and E123.1 were addressed in Ballot 5589.

Action Item: 2013Jul #05, Paul Trio to consult with the ISC Regulations SC on what should be done to SEMI E30 in light of the existing SML copyright issue.

9 New Business

9.1 *Review of Upcoming Japan I&C Ballots*

Terry Asakawa presented on upcoming Japan I&C ballot proposals. The key items were as follows:

9.1.1 *Document 5486 – New Standard: Specification for Predictive Carrier Logistics (Cycle 5, 2013)*

Background:

- Productivity improvement is becoming more and more crucial, and one of the biggest issues is how to reduce waste time caused by carrier delivery delay, so called "equipment starvation time".

- Since process time of equipment is not always constant, and also, transportation time of AMHS is hard to be shortened and may be even longer in 450mm era, optimizations of logistics control based on predictive information are essential to reduce the waste time.

- Prediction of the completion of a carrier which is currently in process (Carrier Approaching Complete) is partially discussed in E87. However, it simply gives a precaution for unload ready, and does not give an estimated time to stagnation (= time to load complete).

- For further improvement, more information and further prediction are needed.

- In order to get enough information for above purpose, modeling of equipment from carrier logistic view is essential.

Abstract:

- Purpose
    - The purpose of this standard is to provide communication specifications to <u>exchange carrier logistics related information especially predictive information between equipment and host</u> in order to support "Predictive Carrier Logistics (hereinafter PCL)" control in semiconductor fabrication system or similar ones.
    - Provide "Information Scheme" to handle "Further Predictions" for "Deeper Optimizations"
        - Introduction of "Stagnation Prediction"

- Scope
    - PCL covers Models of;
        - "CLJ: Carrier Logistics Job" for;
            - Every single carrier operation in equipment
        - "SPJ: Stagnation Prediction Job" for;
            - "PEC: Process Execution Collective" in equipment
    - PCL covers both;
        - Fixed Buffer Equipment
        - Internal Buffer Equipment

- Limitations
    - Not a metrics standard
        - Not for postmortem analysis, but for "on the fly" control
        - Not care about waste times caused by single entity, but care about synchronization among fab entities
    - Best effort basis
        - As predictions have limited accuracy in nature, moreover, in some cases it may not be provided
    - Does not cover calculation algorithms for predictions
        - As they should be in competitive area
    - Optional
        - Intended to be used for equipment which is critical in carrier logistics
    - Not intended to provide physical status of load ports
        - Though AMHS view of load port readiness is provided as a part of CLJ status

9.1.2 Document 5538 – New Standard: Specification for Production Recipe Cache (Cycle 6, 2013)

Background

- Rationale
    - Recognition of issues of certified production recipes caused by lack of standard
        - <u>"Isolation"</u> and <u>"Protection"</u> from unexpected access in equipment.
        - <u>"Synchronization"</u> and <u>"Consistency"</u> between recipe server and equipment.
        - <u>Inefficiencies</u> caused by variety of requirements on above.
    - Recognition of trends
        - <u>"Centralized Recipe Management"</u> will be a direction for Security and Safety
        - Automated distribution and consistency-keeping mechanisms will be needed to reduce operator load and to avoid human error

- From Criteria to Concept
  - Protection of Production Recipes in Equipment
    - Host and/or Privileged Person only
  - Centralized Recipe Management at Server as a trend
    - No permanent copy in equipment
    - Reduction of transaction load
  - Reduction of operator load and human error
    - No recipe delivery / consistency keeping related operations by operator
    - Easy setup operations
  - Seamless cascading
    - Quick recipe fetch
  - → "Caching" is it!
- Conformance with Other Requirements
  - For easier deployment, PRC is modular and is complementary with other key topics

Abstract

- Purpose
  - To provide specifications one systemized approach with options to store, transfer and select recipe considering;
    - Compilation of current implementations

    - "Protection" of production recipes in equipment
    - "Synchronization" and "Consistency keeping" of the recipes with the ones in "Recipe Server" automatically

    - Conformance with "Centralized" recipe management
    - "Eliminate" operator load for recipe pre-set to equipment to avoid human error

    - Options for other modes such as "Pre Download" or "Full Download"
    - Options for "Pre-Execution Check" methods such as "Checksum"

- Scope
  - Define new recipe space "PRC" in equipment
    - Additional to and same scheme with the conventional space
  - Define operations of "PRC"
    - Cache operation
    - Other supportive operations
- Limitations (for Conformance)
  - Recipe Uniqueness (Unique ID)
    - Compatible with any recipe ID scheme as;
      - This does not define anything about recipe ID scheme, and
      - Simply use specified one to identify and compare recipes
  - Variable Parameters
    - Has no conflict with existing implementation as;
      - This does not define anything about Variable Parameters
      - Use current implementation
  - User authentication and access privilege
    - Does not define anything about user authentication and access privilege control scheme

- - Mandates to set access control on PRC resources and functions, and recommends use of current scheme
  - Compatibility & Deployment Considerations
    - Optional
      - New Standard. No modification on existing standards
    - Implementation
      - Addition of a new recipe space "PRC"
        - Simple addition of PRC
        - No modification on current recipe system, just make one more space with the same scheme
      - Add a switch to refer PRC for Recipe in "Production Mode"
      - Add Cache operations to "PRC"
        - and associated operations
    - ON/OFF capability
      - Equipment starts with "Non PRC Mode", and Factory system with PRC compatibility simply turns the PRC ON

Attachment: 18, Document 5486 (Predictive Carrier Logistics) Presentation

Attachment: 19, Document 5538 (Production Recipe Cache) Presentation

9.2 *NA I&C Standards due for 5-Year Review*

The committee allowed the following SEMI Standard to go into Inactive status:

- SEMI E54.15, Sensor/Actuator Network Communication Specification for SafetyBUS p
- SEMI E147, Guide for Equipment Data Acquisition (EDA)

9.3 *New Ballot Submission Summary*

Paul Trio reviewed the TFOFs, SNARFs, and letter ballot submission information presented to the committee for approval. These can be found in the Authorized Ballots and Authorized Activities tables (Table 4 and Table 5, respectively) at the beginning of these minutes.

Motion:	Approve all SNARFs, TFOFs, and letter ballots (as presented in tables 4 and 5 above)
By / 2ⁿᵈ:	Brian Rubow (Cimetrix) / Mitch Sakamoto (Tokyo Electron)
Discussion:	None.
Vote:	11-0 in favor. Motion passed.

9.4 *Outstanding Contributor Awards*

SEMI recognizes a number of Standards members who have made significant contributions to the program in the past year. SEMI Standards sincerely thanks them for their efforts. The NA I&C 2013 Outstanding Contributor Award recipients are:

- Brian Rubow – Cimetrix

- Dan Chlus – IBM

- David Bricker – Applied Materials

- Gino Crispieri – ISMI

- Jack Ghiselli – Ghiselli Consulting

- James Moyne – Applied Materials

- Lance Rist – Industry Consultant

- Mike Czerniak – Edwards

- Supika Mashiro – Tokyo Electron

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 Adjournment

Having no further business, a motion was made to adjourn the NA I&C Committee meeting on July 10 in conjunction with SEMICON West 2013 in San Francisco, California. Adjournment was at 2:55 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:

Jack Ghiselli (Ghiselli Consulting), Co-chair	
Lance Rist (Industry Consultant), Co-chair	September 16, 2013
Brian Rubow (Cimetrix), Co-chair	September 13, 2013

Table 8 Index of Available Attachments [#1]

#	Title	#	Title
1	SEMI Standards Required Meeting Elements	11	Ballot Review for Doc. 5509A
2	NA I&CC Spring 2013 (April 3) meeting minutes	12	Ballot Review for Doc. 5589
3	SEMI Standards Staff Report	13	Diagnostic Data Acquisition Task Force Report
4	Europe Liaison Report	14	Energy Saving Equipment Task Force Report
5	Japan I&C Liaison Report	15	GEM300 Task Force Report
6	Korea I&C Liaison Report	16	PCS Task Force Report
7	APC Conference XXV 2013 Information	17	Sensor Bus Task Force Report
8	Ballot Review for Doc. 5411B	18	Document 5486 (Predictive Carrier Logistics) Presentation
9	Ballot Review for Doc. 5453A	19	Document 5538 (Production Recipe Cache) Presentation
10	Ballot Review for Doc. 5454B		

#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.