



North America Information & Control Committee Meeting Summary and Minutes



SEMI®
International
Standards

SEMICON West 2014 Meetings
9 July 2014, 0800 – 1630 Pacific Time
San Francisco Marriott Marquis Hotel in San Francisco, California

Committee Announcements

Next Committee Meeting

NA Standards Fall 2014 Meetings

Wednesday, November 5, 2014; 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 (RistTex), Brian Rubow (Cimetrix)

SEMI Staff: Paul Trio

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
AIS Automation	Mueller	Bert	IT Innovation	Kim	Won Tae
Applied Materials	Flores	Robert	PEER Group	Hoffmann	Christian
Applied Materials	Park	Song	RistTex	Rist	Lance
ASM Genitech Korea	Jung	Il Gun	Rofin-Sinar Laser	Pfaffinger	Josef
Cimetrix	Rubow	Brian	SK Hynix	Ahn	Chulhong
Cimetrix	Tracey	Tami	Tokyo Electron	Asakawa	Terry
Consultant	Crispieri	Gino	Tokyo Electron	Mochizuki	Tadashi
Dainippon Screen	Nishimura	Takayuki	Tokyo Electron	Murata	Naoko
Ghiselli Consulting	Ghiselli	Jack	Tokyo Electron	Sakamoto	Mitch
GLOBALFOUNDRIES	Rothe	Jan	Tokyo Electron Korea	Im	Byoung Min
Hitachi High-Technologies	Toyoshima	Yuko	University of Michigan	Moyne	James
Hitachi Kokusai	Matsuda	Mitsuhiro	SEMI	Trio	Paul

Table 2 Leadership Changes

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



Table 3 Ballot Results

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

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

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
<i>Cycle 3, 2014 Ballots</i>		
5507A	Line Item Revisions to SEMI E132-0310E2, Specification for Equipment Client Authentication and Authorization	
Line Item 1	E132 Session Termination Errors	Passed as balloted
<i>Cycle 4, 2014 Ballots</i>		
5620	Line Item Revision to Add XML SECS-II Message Notation and a Complementary File to SEMI E5-0813, SEMI Equipment Communications Standard 2 Message Content (SECS-II)	
Line Item 1	SECS-II Message Notation	Failed , to be reballoted

Table 4 Authorized Activities

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
---	Revised TFOF	Energy Saving Equipment	<p>Updates to charter and scope sections.</p> <p><u>Revised Charter:</u> This task force will:</p> <ul style="list-style-type: none"> - Maintain and propose enhancements to SEMI E167 standard that specify communications between the factory system and production equipment to move the equipment between power saving modes as defined in S23. - Develop and propose standards for behavior, and communication of energy savings mode control between the production equipment and its auxiliary subsystems. - EHS Committee will be informed and ask to be involved when any issue related to fundamental energy savings concepts or definitions are discussed. <p><u>Revised Scope:</u> This Task Force will focus on communication protocol and message content for the purpose of reducing energy consumption for the factory from process equipment and auxiliary subsystems. The task force will identify requirements needed to communicate energy savings information from generic auxiliary subsystems (e.g., vacuum pumps, abatement systems, chillers, etc.). The Task Force will collaborate with the EHS Committee to avoid conflict with definitions in S23.</p>
5618	Revised SNARF	GEM300 TF	<p><i>New Standard: Preservation of Recipe Integrity</i></p> <p><u>Revised Rationale:</u> From the list of opportunities to improve recipe creation, management, and execution, two were chosen for the first effort of the Recipe Integrity Task Force.</p> <p>1. 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. The recipe header information will be added to the existing recipe body. The recipe header will contain 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. The proposed solution is expected to address both formatted and unformatted recipes/process programs/process recipes.</p>

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
			<p>2. 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.</p> <p>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.</p> <p><u>Revised Scope:</u> The SEMI specification will address two areas in its first version. The two areas are:</p> <ol style="list-style-type: none"> 1. Recipe header – while preserving existing recipe format and content, a user accessible collection of information describing the recipe and its use will be added to accompany the recipe body. The task force will determine the final list of information. 2. 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). <p><i>Projected Timetable/General Milestones section was also updated.</i></p>
5619	Revised SNARF	GEM300 TF	<p>Title changed to: <i>New Standard: Specification for SECS Equipment Data Dictionary (SEDD)</i></p> <p>[From: Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template]</p> <p><u>Revised Rationale:</u> Equipment suppliers in the semiconductor industry document for the customer the SECS messages, collection events, alarms, and variable data available from the production equipment they sell. It is becoming common to provide much of this information to the customer in a format that is convenient for input to software applications that assist with creating the host software for communications to such equipment. This data set is called a SECS Equipment Data Dictionary (SEDD).</p> <p>SEMATECH member companies identified as a problem the lack of standardized content and format for the SEDD. The goal of this activity in the GEM 300 TF is to standardize the SEDD. A standard definition will help both the device makers and the equipment suppliers. The equipment supplier will benefit by creating a single SEDD for an equipment that should satisfy all their customers. The device makers will have a uniform file format and content for the SEDD for all of the equipment in their factories. This will promote more automation in the creation of host interface software for each production equipment.</p> <p><u>Revised Scope:</u> This activity will result in a new specification to define the format and content of the SECS equipment data dictionary. Each SEDD will contain the description of the data available from a production equipment, including collection events, variables, and alarms. The variables include status variables, data variables, and equipment constants. Recipe variable parameter definitions may also be included if the GEM 300 TF agrees.</p> <p>The SEDD format will be XML. It will be governed by an XML schema. The SEDD schema will be proposed as a SEMI Complementary file.</p> <p><i>Projected Timetable/General Milestones section was also updated.</i></p>

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
5620	Revised SNARF	GEM300 TF	<p>Title changed to: <i>New Standard: Specification for SECS-II Message Notation (SMN)</i> [From: Revision to SEMI E5, SEMI Equipment Communications Standard 2 Message Content (SECS-II) and New Complementary File: SECS-II Message Notation using XML]</p> <p><u>Updated Scope:</u> 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 for 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. This will result in a new specification to document aspects of the schema usage, and to identify the complementary file.</p> <p>Note that the notation used to represent SECS-II messages does not change the format or content of the transmitted SECS-II messages.</p> <p><i>Projected Timetable/General Milestones section was also updated. Rationale section not revised.</i></p>
5762	SNARF	Diagnostic Data Acquisition (DDA) TF	<p>Revision to SEMI E132, Specification for Equipment Client Authentication and Authorization. Adding EDA freeze versions to E132.</p> <p><u>Rationale:</u> Problem #1 An EDA interface Implementation is a specific set of the EDA standard document versions that work together. These were initially defined and declared by SEMATECH. SEMI has supported these “EDA Freeze Versions” by distributing each set of EDA complementary files and various materials in a single ZIP file. E132 web service InterfaceDiscovery publishes a set of EDA web services as a Session Group, which is equivalent to an EDA Freeze Version; even though the EDA Freeze Version concept is not defined within the EDA standards.</p> <p>Problem #2 The Session Group has a “name” attribute. The name of this group is not strictly specified even when it corresponds to a specific EDA Freeze Version; therefore a client cannot determine which EDA Freeze Version an interface implements.</p>
5763	SNARF	NA I&C Committee 5-Year Review	Reapproval for SEMI E30.5, Specification for Metrology Specific Equipment Model (MSEM)
5764	SNARF	NA I&C Committee 5-Year Review	Reapprovals for SEMI E130, Specification for Prober Specific Equipment Model for 300 mm Environment (PSEM300) and SEMI E130.1, Specification for SECS-II Protocol for Prober Specific Equipment Model for 300 mm Environment (PSEM300)

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
5677	Cycle 6, 2014	Diagnostic Data Acquisition (DDA) TF	Revision to SEMI E164, Specification for EDA Common Metadata
5762	Cycle 6, 2014	Diagnostic Data Acquisition (DDA) TF	Revision to SEMI E132, Specification for Equipment Client Authentication and Authorization. Adding EDA freeze versions to E132.
5508	Cycle 6, 2014	GEM300 TF	Revisions to: - SEMI E5, SEMI Equipment Communications Standard 2 Message Content (SECS-II); - SEMI E90, Specification for Substrate Tracking; and - SEMI E90.1, Specification for SECS-II Protocol Substrate Tracking
5618	Cycle 6, 2014	GEM300 TF	New Standard: Preservation of Recipe Integrity
5619A	Cycle 6, 2014	GEM300 TF	New Standard: Specification for SECS Equipment Data Dictionary (SEDD)
5620A	Cycle 6, 2014	GEM300 TF	New Standard: Specification for SECS-II Message Notation (SMN)
4507A	Cycle 6, 2014	PCS TF	Revision to SEMI E133.1, Provisional Specification for XML Messaging for Process Control Systems (PCS). For fault detection enhancements
5274C	Cycle 6, 2014	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 E54-0413, Sensor/Actuator Network Standard
5763	Cycle 6, 2014	NA I&C Committee 5-Year Review	Reapproval for SEMI E30.5, Specification for Metrology Specific Equipment Model (MSEM)
5764	Cycle 6, 2014	NA I&C Committee 5-Year Review	Reapprovals for SEMI E130, Specification for Prober Specific Equipment Model for 300 mm Environment (PSEM300) and SEMI E130.1, Specification for SECS-II Protocol for Prober Specific Equipment Model for 300 mm Environment (PSEM300)

Table 6 New Action Items

Item #	Assigned to	Details
2014Jul #01	Paul Trio	Confirm with SEMI legal whether a list of 17 SEMI Standards that could be impacted by the SML copyright claim can be included in the NA I&C West 2014 meeting minutes.
2014Jul #02	Paul Trio	Send invitations to Japan PCL TF meeting during the NA Fall 2014 to determine level of interest.
2014Jul #03	Paul Trio	Confirm whether E30.5 reapproval ballot will be impacted by SML claim.

Table 7 Previous Meeting Actions Items

Item #	Assigned to	Details	Status
2014Apr #03	NA I&C Chairs	Discuss with Gases Committee better alignment of Intercommittee Ballots	Open Paul to send Gases leadership contacts to NA I&C Chairs.
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.	Open

Table 7 Previous Meeting Actions Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>	<i>Status</i>
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 2 in conjunction with the NA Standards Spring 2014 Meetings.

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

By / 2nd: Gino Crispieri (Consultant) / James Moyne (University of Michigan)

Discussion: None

Vote: 9-0 in favor. Motion passed.

Attachment: 02, NA I&CC Spring 2014 meeting (April 2) minutes

3 Liaison Reports

3.1 *SEMI Staff Report*

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

- 2014 Global Calendar of Events
 - SEMICON Taiwan (September 3-5, Taipei)
 - Strategic Materials Conference (September 30 – October 1, Santa Clara, California)
 - SEMICON Europa / Plastic Electronics (October 7-9, Grenoble, France)
 - SEMICON Japan (December 3-5, Tokyo)
- 2015 Global Calendar of Events
 - Industry Strategy Symposium (January 11-14, Half Moon Bay, California)
 - SEMICON Korea / LED Korea (February 4-6, Seoul)
 - SEMICON China / FPD China (March 17-19, Shanghai)
 - LED Taiwan (March 25-28, Taipei)
 - SEMICON Southeast Asia (April 22-24, Penang, Malaysia)
 - SEMICON West (July 14-16, San Francisco, California)
 - SEMICON Taiwan (September 2-4, Taipei)
 - SEMICON Europa (October 6-8, Dresden, Germany)
 - SEMICON Japan (December 16-18, Tokyo)



- NA Standards Meetings at SEMICON West 2014 (July 6-10)
 - 3DS-IC | EHS | Facilities & Gases | HB-LED | Information & Control | Liquid Chemicals | MEMS/NEMS | Metrics | PV Materials | Physical Interfaces & Carriers | Silicon Wafer | Traceability
- Standards Workshop at SEMICON West 2014
 - Wafer Geometry Control for Advanced Semiconductor Manufacturing (Wednesday, July 9)
 - Important developments and future needs in wafer geometry for advanced semiconductor manufacturing.
 - Presenters from IBM, Intel as well as key equipment companies.
 - Proposals discussed during this workshop will be considered for standardization by the Advanced Wafer Geometry TF under the Silicon Wafer Committee.
- Standards Updates at SEMICON West 2014
 - Tuesday, July 8
 - [Semiconductor Technology Symposium (STS) Session] “*Challenges, Innovations and Drivers in Metrology,*” updates on Metrics activities
 - [STS Session] “*Embracing What’s Next – Devices & Systems for Big Data, Cloud and IoT,*” updates on 3DS-IC activities
 - Wednesday, July 9
 - [TechXPOT South] “*Subcomponent Supply Chain for 10 nm and Beyond,*” updates on Facilities & Gases activities
 - Thursday, July 10
 - [TechXPOT North] “*Disruptive Compound Semiconductor Technologies,*” updates on Compound Semiconductor Materials activities
- SEMI Standards Publications
 - April 2014 Cycle
 - New Standards – 2, Revised Standards – 13, Reapproved Standards – 0, Withdrawn Standards – 0
 - May 2014 Cycle
 - New Standards – 3, Revised Standards – 4, Reapproved Standards – 0, Withdrawn Standards – 0
 - June 2014 Cycle
 - New Standards – 1, Revised Standards – 3, Reapproved Standards – 4, Withdrawn Standards – 1, Total in portfolio – 909 (includes 106 Inactive Standards)
- NA Standards Fall 2014 Meetings
 - November 3-6 at SEMI Headquarters (San Jose, California)
- Technical Ballot Critical Dates for NA Standards Fall 2014 Meetings
 - Cycle 5: due July 18 / Voting Period: July 25 – August 25
 - Cycle 6: due August 12 / Voting Period: August 26 – September 25
- Upcoming North America Meetings (2015)
 - NA Standards Spring 2015 Meetings (March 30 – April 2, San Jose, California)
 - NA Standards Meetings at SEMICON West 2015 (July 13-16, San Francisco, California)

Attachment: 03, SEMI Standards Staff Report

3.2 Japan Information & Control Committee

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

- Document Review Summary
 - Cycle 2 (Japan Standards Spring 2014 Meetings)

<i>Document #</i>	<i>Description</i>	<i>Committee Action</i>
5538A	New Standard: Specification for Production Recipe Cache (PRC) <i>Note: Title was changed from the SNARF</i>	Passed as balloted

- Cycle 3 (Japan Summer 2014 Meetings)

<i>Document #</i>	<i>Description</i>	<i>Committee Action</i>
5486A	New Standard: Specification for Predictive Carrier Logistics (PCL)	Passed as balloted

- Upcoming ballots to be reviewed at Japan Standards Fall 2014 Meetings (Cycle 5 or Cycle 6, 2014)

<i>Document #</i>	<i>Description</i>	<i>SC / TF / WG</i>
5600	Line-item revision to: SEMI E5, SEMI Equipment Communications Standard 2 Message Content (SECS-II); SEMI E40, Standard for Processing Management; and SEMI E40.1, SECS-II Support for Processing Management Standard. Removal of inconsistencies	GEM300 TF
5601	New Standard: Specification for Wafer Object Model	GEM300 TF

- Equipment Information System Security (EISS) TF
 - Doc. 5422A (New Standard: *Guide for Equipment Information System Security*) published as SEMI E169-0414.
 - SNARF for E169 revision to be proposed.
- Fiducial Mark Interoperability TF
 - Originating Global Technical Committee:
 - Traceability, Silicon Wafer, Physical Interfaces & Carriers, Assembly & Packaging, Information & Control
 - Last meeting was held on April 15, 2014 with approximately 20 attendees
 - Discussed Document Draft #5604 (Line Item Revision to SEMI M1-0114, *Specification for Polished Single Crystal Silicon Wafer* and SEMI M20-0110, *Practice for Establishing a Wafer Coordinate System* [Re: Addition of Notchless 450 mm Wafers])
 - Submitted feedback from TF members to “International Polished Wafer TF”
 - To be discussed
 - Reading Condition Report
- GEM300 TF
 - #5538A – New Standard: *Specification for Production Recipe Cache (PRC)*
 - Passed as balloted at Japan I&C TC meeting on April 16 and to be published as SEMI E170
 - Two SNARFs related to PRC were discussed and to be submitted for GCS approval
 - Line Item Revision to SEMI E170-XXXX (#5538A)
 - Revision to add a New Subordinate Standard for SEMI E170-XXXX (#5538A)

- #5600 – Line-item revision to SEMI E5, SEMI E40, and SEMI E40.1
 - To remove of inconsistencies in Process Job Attributes.
 - To be balloted for Cycle 5 or Cycle 6
- #5601 – Specification for Wafer Object Model
 - Introduce Wafer Object and its behavior.
 - To be balloted for Cycle 5 or Cycle 6
- Japan I&CC Maintenance
 - #5615 – 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*
 - To remove “provisional”
 - Ballot submission to be decided.
- Predictive Carrier Logistics (PCL) TF
 - #5486A: New Standard: *Specification for Predictive Carrier Logistics (PCL)*
 - Passed as balloted at Japan I&C TC Chapter meeting on June 20
 - SNARF for “Line Item Revision to SEMI EXXX-XXXX (#5864A), *Specification for Predictive Carrier Logistics* was discussed and to be proposed at the next Japan I&C TC Chapter meeting.
- Sensor Bus TF
 - #5602 – Reapproval for SEMI E54.19-0308, *Specification for Sensor/Actuator Network for MECHATROLINK*
 - To be published soon.
 - #5603 – Revision to SEMI E54.12-0701E (Reapproved 1211), *Specification for Sensor/Actuator Network Communications for CC-Link*
 - To be published soon.
- Next meeting: September 18 for the Japan Fall 2014 Meetings (SEMI Japan, Tokyo, Japan)
- Japan I&CC Meeting Schedule
 - Winter in December 5 (tentative), in conjunction with SEMICON Japan 2014 at the Tokyo Big Sight Conference Tower.
- Staff Contact: Chie Yanagisawa (cyanagisawa@semi.org)

Additional Discussion:

- Takayuki Nishimura mentioned that Document 5600 activity {see above for additional details} may need to be held due to ongoing SML discussion.

Attachment: 04, Japan I&C Liaison Report

3.3 Korea Information & Control Committee

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

- Next meeting:
 - October 17 at SEMI Korea office (Seoul)
- Major Updates
 - Authorized New Activity
 - 4946 SNARF for E87 revision. Revised the scope from the previous version
 - New 5738 SNARF for E87.1 major revision
 - Authorized Ballots
 - 5738 (E87.1 revision) in Cycle 5 or 6, 2014

- GEM300 TF
 - 4946 (E87 revision, add carrier ready to unload prediction feature)
 - Revised the scope to delete “Provisional” removal line item as follow the SEMI Regulation.
 - The activity holds off until the E87.1 revision completed.
 - 5738 (E87.1 revision)
 - Removal of “Provisional”
 - Removal of SML Notation and all references to SML
 - 5320 (E116 and E116.1 revisions)
 - Committee will inform the future plan of the activity before NA Fall meetings 2014
- DDA TF
 - EDA translated documents are under technical review
 - Target Standards: E120, E125, E132, and E134
 - Target release schedule: End of July
- Staff Contact: Natalie Shim (eshim@semi.org)

Attachment: 05, Korea I&C Liaison Report

3.4 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:

- Next meeting:
 - October 8 at SEMICON Europa 2014 (Grenoble, France)
- Two documents to go inactive
 - SEMI E54.14-0309, Specification for Sensor/Actuator Network Communications for PROFINET
 - SEMI E54.8-0309, Specification for Sensor/Actuator Network Communications for PROFIBUS-DP
- Staff Contact: Andrea Busch (abusch@semi.org)

Attachment: 06, Europe I&C Liaison Report

3.5 Taiwan Information & Control Committee

No activities to report.

4 E30/SML Copyright Update

Paul Trio read the following statement from SEMI Legal Counsel:

SEMI's investigation, conducted in conjunction with counsel, into PEER Group's claimed copyright in SML and SML Notation is ongoing. Based upon the facts gathered to date and their legal assessment, our attorneys recently sent a letter to PEER requesting evidence that PEER has an enforceable copyright in SML and SML Notation, and we currently are awaiting a response from PEER. Ballot 5589A is being postponed in light of this ongoing investigation.

Additional committee discussion:

- Lance Rist asked whether the list of 17 SEMI Standards that could be impacted by the SML copyright claim can be included in the NA I&C West 2014 meeting minutes. Paul Trio to confirm.
- Lance Rist asked what would happen to the #5589 activity (removal of SML in various SEMI Standards) should the SML copyright claim be resolved. Paul Trio responded that SEMI will provide instructions.



Action Item: 2014Jul #01, Paul Trio to confirm with SEMI legal whether a list of seventeen (17) SEMI Standards that could be impacted by the SML copyright claim can be included in the NA I&C West 2014 meeting minutes.

5 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 Cycle 3 and Cycle 4, 2014 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.

5.1 Cycle 3, 2014 Ballots

Document #	Document Title	Committee Action
5507A	Line Item Revisions to SEMI E132-0310E2, Specification for Equipment Client Authentication and Authorization	
Line Item 1	E132 Session Termination Errors	Passed as balloted

5.2 Cycle 4, 2014 Ballots

Document #	Document Title	Committee Action
5620	Line Item Revision to Add XML SECS-II Message Notation and a Complementary File to SEMI E5-0813, SEMI Equipment Communications Standard 2 Message Content (SECS-II)	
Line Item 1	SECS-II Message Notation	Failed , to be reballoted

Attachment: 07, Ballot Review for Doc. 5507A

08, Ballot Review for Doc. 5620

6 Task Force Reports

6.1 Diagnostic Data Acquisition (DDA) Task Force

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

- Attendance: 21 in person, 2 remote
- Documents in Development
 - 5677 (E164 revision, EDA common metadata)
- New SNARF
 - Adding freeze versions to SEMI E132 *{see section 9.2.1 of these minutes}*
- Ballot Plans (for Cycle 6, 2014):
 - 5677 (E164 revision, EDA Common Metadata) and 5762 *{see section 9.2.1 of these minutes}*
- New Issues
 - A few issues related to EDA standards were reported and added to the EDA issue spreadsheet.
 - Task force plans to prepare SNARFs for changes to multiple standards for the purpose of starting work towards the completion for a future freeze version



- DDA TF Google Site
 - <https://sites.google.com/a/semi.org/ddatf/>
 - Available materials: minutes, ballot drafts, issues tracking spreadsheets, other working materials

Attachment: 09, Diagnostic Data Acquisition Task Force Report

6.2 Energy Saving Equipment Communication Task Force

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

- Attendance: 21 in person, 2 remote
- New TF Business
 - Modification and request approval of TFOF for Phase II Energy Savings Communication between equipment and auxiliary subsystems *{see section 9.2.2 of these minutes}*
- Next Steps
 - Task force plans to prepare SNARFs for developing a new standard for communication between equipment and subsystems
 - Task force meetings are planned between now and Fall SEMI standards meetings to discuss and identifying final content of SNARF.

Attachment: 10, Energy Saving Equipment Communication Task Force Report

6.3 GEM300 Task Force

Brian Rubow reported for the GEM300 Task Force. The key items were as follows:

- Attendance: 24 in person
- Revised SNARFs *{see sections 9.2.3 through 9.2.5 of these minutes}*
 - (#5618) New Standard: Specification for Preservation of Recipe Integrity
 - (#5619) Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template
 - (#5620) Revision to SEMI E5, SEMI Equipment Communications Standard 2 Message Content (SECS-II) and New Complimentary File: SECS-II Message Notation using XML
- Ballot Plans (Cycle 6, 2014):
 - 5508 (E5, E90, and E90.1 revisions; provide generalized support for multiple substrate groups such as those used in HB-LED's material management approach)
 - 5618, 5619, 5620 *{see sections 9.2.3 through 9.2.5 of these minutes}*

Attachment: 11, GEM300 Task Force Report

6.4 Process Control System (PCS) Task Force

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

- No TF meeting held at SEMICON West 2014
- Ballot Plans (Cycle 6, 2014)
 - 5716 (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]. Update to better align with XML guidelines)



- Removing “Provisional” in SEMI E133.1
 - James Moyne reported that this issue is already being addressed in a current PCS TF SNARF.

6.5 APC Conference

James Moyne also informed the committee of the upcoming Advanced Process Control (APC) Conference. The key items were as follows:

- www.apconference.com
- Attended by major semiconductor users and APC / automation suppliers
- I&CC Topics discussed
 - APC, FDC, WTW, GEM 300, etc.
- Keynote: GLOBALFOUNDRIES
- Tutorial on Big Data
 - Delivered by Cloudera, Pivotal, Applied Materials and BisTEL
- Held in conjunction with the SEMATECH APC Council Meeting

Attachment: 12, APC Conference XXVI 2014

6.6 Sensor Bus Task Force

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

- No meeting held at SEMICON West 2014
- Ballot Plans (for Cycle C, 2014):
 - 5274C (New E54 Subordinate Standard: Specification for Sensor/Actuator Network Specific Device Model of a Generic Equipment Add-On Sensor [ADDON])

Attachment: 13, Sensor Bus Task Force Report

7 Proposed Meeting Schedule for the NA Standards Fall 2014 Meetings

North America Standards Fall 2014 Meetings
November 3-6, 2014
SEMI Headquarters
3081 Zanker Road
San Jose, California 95134
U.S.A.

The tentative schedule is provided below:



- Monday, November 3
 - Japan Predictive Carrier Logistics [PCL] TF (11:00 AM to 12:00 Noon, US Pacific Time)
 - I&C Leadership (12:00 Noon to 1:00 PM)
 - Diagnostic Data Acquisition [DDA] TF (1:00 PM to 3:00 PM)
- Tuesday, November 4
 - Energy Saving Equipment Communication [ESEC] TF (8:00 AM to 10:00 AM)
 - GEM300 TF (10:00 AM to 5:00 PM)
 - Sensor Bus TF (1:00 PM to 3:00 PM)
 - Process Control System [PCS] TF (3:00 PM to 5:00 PM)
 - I&C GCS (5:00 PM to 6:00 PM)
- Wednesday, November 5
 - I&C Committee (8:00 AM to 4:30 PM)

Action Item: 2014Jul #02, Paul Trio to send invitations to Japan PCL TF meeting during the NA Fall 2014 to determine level of interest.

8 Old Business

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

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>	<i>Status</i>
2014Apr #01	Paul Trio	Notify Korea I&C that E116.1 (revised by ballot 5320) is part of the list of Standards identified in SML Copyright discussion.	Completed
2014Apr #02	NA I&C Chairs	Help draft ballot and SNARF language for Korea I&C activity (#4946). Include Mitch Sakamoto in the communication.	Completed
2014Apr #03	NA I&C Chairs	Discuss with Gases Committee better alignment of Intercommittee Ballots	Open Paul to send NA I&C chairs the contact info for Gases leadership.
2014Apr #04	Paul Trio	Remove completed 5-year review activities from SNARF view in SEMI website.	Completed
2014Apr #05	Paul Trio	Investigate status of PCS TF SNARF #4692	Completed
2014Apr #06	Paul Trio	Investigate status of Sensor Bus TF SNARF #5181	Completed.
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.	Open
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

9 New Business

9.1 NA I&C Standards due for 5-Year Review

The committee approved to issue reapproval ballots for the following SEMI Standards:

- SEMI E30.5-0302 (Reapproved 0308), Specification for Metrology Specific Equipment Model (MSEM)
- SEMI E130-1104 (Reapproved 0710), Specification for Prober Specific Equipment Model for 300 mm Environment (PSEM300)
- SEMI E130.1-1104 (Reapproved 0710), Specification for SECS-II Protocol for Prober Specific Equipment Model for 300 mm Environment (PSEM300)

The committee agreed to allow the following SEMI Standards to go into Inactive Status:

- SEMI E127, Specification for Integrated Measurement Module Communications: Concepts, Behavior, and Services (IMMC)
- SEMI E127.1, Specification for SECS-II Protocol for Integrated Measurement Module Communications (IMMC)

NOTE 2: Per section 4.2.19 of the SEMI Standards Regulations, Inactive Status is used to describe a Standard or Safety Guideline that is not currently supported by the global technical committee. Inactive Standards and Inactive Safety Guidelines are still available from SEMI. Inactive Standards and Inactive Safety Guidelines contain an 'Inactive' watermark, but will still be available in the 'Current Standards' section of the SEMI Web site.

Additional Committee Discussion:

- With regard to the reapproval of SEMI E30.5, it was unclear whether this Standard will be impacted by the SML claim. An action item was assigned to Paul Trio to investigate before a reapproval ballot is issued.

Action Item: 2014Jul #03, Paul Trio to confirm whether E30.5 reapproval ballot will be impacted by the SML claim.

9.2 New TFOFs & SNARFs

9.2.1 *New Diagnostic Data Acquisition (DDA) TF SNARF (#5762) – Revision to SEMI E132, Specification for Equipment Client Authentication and Authorization. Adding EDA freeze versions to E132*

- Rationale:
 - *Problem #1* – An EDA interface Implementation is a specific set of the EDA standard document versions that work together. These were initially defined and declared by SEMATECH. SEMI has supported these “EDA Freeze Versions” by distributing each set of EDA complementary files and various materials in a single ZIP file. E132 web service InterfaceDiscovery publishes a set of EDA web services as a Session Group, which is equivalent to an EDA Freeze Version; even though the EDA Freeze Version concept is not defined within the EDA standards.
 - *Problem #2* – The Session Group has a “name” attribute. The name of this group is not strictly specified even when it corresponds to a specific EDA Freeze Version; therefore a client cannot determine which EDA Freeze Version an interface implements.
- Scope:
 - Define EDA Freeze Versions 1 and 2 in the E132 standard. Specify the value for the Session Group’s name attribute when an EDA Freeze Version is implemented.

Additional Committee Discussion:

- The term “freeze” will not be used since it is a copyrighted term used by SEMATECH.
- This proposal does not add new information, but makes it easier to determine whether a user has the right freeze version or not.



Motion: Approve new SNARF for E132 revision (adding EDA freeze versions to E132).
By / 2nd: Gino Crispieri (consultant) / Jan Rothe (GLOBALFOUNDRIES)
Discussion: None.
Vote: 14-0 in favor. Motion passed.

Attachment: 14, New DDA TF SNARF #5762

9.2.2 Energy Saving Equipment Communication (ESEC) TFOF Revision

- Revised Charter: This task force will:
 - Maintain and propose enhancements to SEMI E167 standard that specify communications between the factory system and production equipment to move the equipment between power saving modes as defined in S23.
 - Develop and propose standards for behavior, and communication of energy savings mode control between the production equipment and its auxiliary subsystems.
 - EHS Committee will be informed and ask to be involved when any issue related to fundamental energy savings concepts or definitions are discussed.
- Revised Scope:
 - This Task Force will focus on communication protocol and message content for the purpose of reducing energy consumption for the factory from process equipment and auxiliary subsystems.
 - The task force will identify requirements needed to communicate energy savings information from generic auxiliary subsystems (e.g., vacuum pumps, abatement systems, chillers, etc.).
 - The Task Force will collaborate with the EHS Committee to avoid conflict with definitions in S23.

Motion: Approve revised ESEC Task Force TFOF.
By / 2nd: Gino Crispieri (consultant) / Jan Rothe (GLOBALFOUNDRIES)
Discussion: Takayuki Nishimura (Dainippon Screen) expressed concern that the term “subsystem” is very comprehensive. Gino Crispieri responded that the TF intends to define “auxiliary subsystems” and will make clear what is being addressed in the actual Document.
Vote: 12-0 in favor. Motion passed.

Attachment: 15, Revised ESEC Task Force TFOF

9.2.3 GEM300 TF SNARF #5618 Revision

- SNARF for: New Standard: Preservation of Recipe Integrity
- Revised Rationale: From the list of opportunities to improve recipe creation, management, and execution, two were chosen for the first effort of the Recipe Integrity Task Force.

1. *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. The recipe header information will be added to the existing recipe body. The recipe header will contain 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. The proposed solution is expected to address both formatted and unformatted recipes/process programs/process recipes.



2. *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.

- Revised Scope: The SEMI specification will address two areas in its first version. The two areas are:

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

2. *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).

- Projected Timetable/General Milestones section was also updated.

Motion: Approve revised SNARF #5618
By / 2nd: Lance Rist (RistTex) / Won Tae Kim (IT Innovation)
Discussion: None.
Vote: 14-0 in favor. Motion passed.

Attachment: 16, Revised GEM300 TF SNARF #5618

9.2.4 GEM300 TF SNARF #5619 Revision

- Title changed to: New Standard: Specification for SECS Equipment Data Dictionary (SEDD)
 - From: Revision to SEMI E30, Generic Model for Communications and Control of Manufacturing Equipment (GEM) and New Complimentary File: SECS-II Equipment Data Template
- Revised Rationale:
 - Equipment suppliers in the semiconductor industry document for the customer the SECS messages, collection events, alarms, and variable data available from the production equipment they sell. It is becoming common to provide much of this information to the customer in a format that is convenient for input to software applications that assist with creating the host software for communications to such equipment. This data set is called a SECS Equipment Data Dictionary (SEDD).
 - SEMATECH member companies identified as a problem the lack of standardized content and format for the SEDD. The goal of this activity in the GEM 300 TF is to standardize the SEDD. A standard definition will help both the device makers and the equipment suppliers. The equipment supplier will benefit by creating a single SEDD for an equipment that should satisfy all their customers. The device makers will have a uniform file format and content for the SEDD for all of the equipment in their factories. This will promote more automation in the creation of host interface software for each production equipment.
- Revised Scope:
 - This activity will result in a new specification to define the format and content of the SECS equipment data dictionary. Each SEDD will contain the description of the data available from a production equipment, including collection events, variables, and alarms. The variables include status variables, data variables, and equipment constants. Recipe variable parameter definitions may also be included if the GEM 300 TF agrees.



- The SEDD format will be XML. It will be governed by an XML schema. The SEDD schema will be proposed as a SEMI Complementary file.
- Projected Timetable/General Milestones section was also updated.

Motion: Approve revised SNARF #5619
By / 2nd: Lance Rist (RistTex) / Christian Hoffmann (PEER Group)
Discussion: None.
Vote: 14-0 in favor. Motion passed.

Attachment: 17, Revised GEM300 TF SNARF #5619

9.2.5 GEM300 TF SNARF #5620 Revision

- Title changed to: New Standard: Specification for SECS-II Message Notation (SMN)
 - From: Revision to SEMI E5, SEMI Equipment Communications Standard 2 Message Content (SECS-II) and New Complementary File: SECS-II Message Notation using XML
- Revised 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 for 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. This will result in a new specification to document aspects of the schema usage, and to identify the 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.
- Projected Timetable/General Milestones section was also updated. Rationale section not revised.

Motion: Approve revised SNARF #5620
By / 2nd: Brian Rubow (Cimetrix) / Jan Rothe (GLOBALFOUNDRIES)
Discussion: None.
Vote: 14-0 in favor. Motion passed.

Attachment: 18, Revised GEM300 TF SNARF #5620

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: Jan Rothe (GLOBALFOUNDRIES) / Gino Crispieri (consultant)
Discussion: None.
Vote: 15-0 in favor. Motion passed.



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 9 in conjunction with SEMICON West 2014. Adjournment was at 11:05 AM.

Respectfully submitted by:

Paul Trio
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Minutes approved by:

Jack Ghiselli (Ghiselli Consulting), Co-chair	September 11, 2014
Lance Rist (RistTex), Co-chair	
Brian Rubow (Cimetrix), Co-chair	September 11, 2014

Table 8 Index of Available Attachments #1

#	Title	#	Title
1	SEMI Standards Required Meeting Elements	10	Energy Saving Equipment Task Force Report
2	NA I&CC Spring 2014 (April 2) meeting minutes	11	GEM300 Task Force Report
3	SEMI Standards Staff Report	12	APC Conference XXVI 2014
4	Japan I&C Liaison Report	13	Sensor Bus Task Force Report
5	Korea I&C Liaison Report	14	New DDA TF SNARF #5762
6	Europe I&C Liaison Report	15	Revised ESEC Task Force TFOF
7	Ballot Review for Doc. 5507A	16	Revised GEM300 TF SNARF #5618
8	Ballot Review for Doc. 5620	17	Revised GEM300 TF SNARF #5619
9	Diagnostic Data Acquisition Task Force Report	18	Revised GEM300 TF SNARF #5620

#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.