



Information and Control North America TC Chapter

Meeting Summary and Minutes

SEMICON West 2016

July 13, 2016 08:00 – 16:30

San Francisco Marriott Marquis Hotel in San Francisco, California

Next TC Chapter Meeting

Fall 2016 Meeting

Wednesday November 9, 2016 8:00 – 16:30

SEMI HQ, San Jose, California

Table 1 Meeting Attendees

Italics indicate virtual participants

Co-Chairs: Brian Rubow (Cimetrix), Jack Ghiselli (Ghiselli Consulting), Gino Crispieri (AMAT)

SEMI Staff: Inna Skvortsova

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
AMAT/UMICH	Moyne	James	Peer Group	McKenzie	Alison
Cimetrix	Rubow	Brian	SCREEN	Nishimura	Takayuki
Ghiselli Consulting	Ghiselli	Jack	Rofin-Sinar Laser GmbH	Pfaffinger	Josef
SK Hynix	Ahn	Chulhong	Self	Sakamoto	Mitsune
Tokyo Electron	Asakawa	Terry	Industrial Strength Graphics	Summers	Frank
Intel	Bond	Ryan	AIS Automation	Mueller	Bert
AMAT	Crispieri	Gino	AMAT	Neuber	Andreas
Peer Group	Hoffmann	Christian	EDWARDS	Czerniak	Mike
Omron Automation	Infelise	Nick	Tokyo Electron	Naoko	Murata
WindTree Technologies	Won Tae	Kim	Hitachi High-Tech	Inko	Toyoshina
Doople	Hyungsu	Kim	SEMI HQ	Skvortsova	Inna
Veeco	Lawrence	Elena	SEMI HQ	Amano	James
Hitachi Kokusai Electric	Matsuda	Mitsuhiro	SEMI Korea	Shim	Natalie
<i>Peer Group</i>	<i>Fuchigami</i>	<i>Albert</i>			

Table 2 Leadership Changes

<i>Group</i>	<i>Previous Leader</i>	<i>New Leader</i>
I&C TC Chapter Co-Chair	Lance Rist	James Moyne, University of Michigan/AMAT
ESEC TF	Gino Crispieri	Andreas Neuber (AMAT)
GEM300 TF	Gino Crispieri	TBD
DDA TF	Gino Crispieri	TBD



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
5549	Revision to SEMI E30, GENERIC MODEL FOR COMMUNICATIONS AND CONTROL OF MANUFACTURING EQUIPMENT (GEM) WITH TITLE CHANGE TO: SPECIFICATION FOR THE GENERIC MODEL FOR COMMUNICATIONS AND CONTROL OF MANUFACTURING EQUIPMENT (GEM)	Failed
5821C	New Standard: SPECIFICATION FOR ENERGY SAVINGS MODE COMMUNICATION BETWEEN SEMICONDUCTOR EQUIPMENT AND SUB-SYSTEMS	Approved with technical change. Ratification Ballot to be issued.
5872	Line Item Revisions TO SEMI E172, SPECIFICATION FOR SECS EQUIPMENT DATA DICTIONARY (SEDD). Enhancement To E172	Failed
5912A	Line Item Revisions to:	
	- SEMI E142.1 -0211, XML Schema for Substrate Mapping	Passed
	- SEMI E142.2-0211, SECS II Protocol for Substrate Mapping	Passed
	- SEMI E142.3-0211, Web Services for Substrate Mapping	Passed
	To correct nonconforming titles	
6020	Line Item revision to SEMI E30.1-0309: INSPECTION AND REVIEW SPECIFIC EQUIPMENT MODEL (ISEM) to correct nonconforming title	Passed
6021	Line Item revision TO SEMI E123-0703 (REAPPROVED 1109): STANDARD FOR HANDLER EQUIPMENT SPECIFIC EQUIPMENT MODEL (HSEM) to correct nonconforming title	Passed
6022	Line Item revision to SEMI E138-0709: XML SEMICONDUCTOR COMMON COMPONENTS to correct nonconforming title	Passed
6023	Line item revision to SEMI E122: STANDARD FOR TESTER EQUIPMENT SPECIFIC EQUIPMENT MODEL (TSEM) to correct nonconforming title	Passed
6024	Reapproval of SEMI E30.5: SPECIFICATION FOR METROLOGY SPECIFIC EQUIPMENT MODEL (MSEM)	Passed
6025	Reapproval of SEMI E142: SPECIFICATION FOR SUBSTRATE MAPPING	Passed

Table 4 Authorized Activities

#	Type	SC/TF/WG	Details
TBD	TFOF	GUI TF	Graphical User Interfaces TFOF; Activity leader Frank Summers
5589	SNARF	GEM 300 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): SNARF abolished
5618	SNARF	GEM 300 TF	New Standard: SPECIFICATION FOR PRESERVATION OF RECIPE INTEGRITY (PRI) SNARF abolished

NOTE 1: 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
5738	SNARF	GEM 300 - Korea TF	Revision to SEMI E87.1- 0707, SPECIFICATION FOR SECS-II PROTOCOL FOR CARRIER MANAGEMENT (CMS); Transfer from Korea GEM 300 to NA I&C TC. Activity leader Brian Rubow. Ballot in cycle 6/7-2016
5716	SNARF	IPCS TF	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) Ballot in cycle 6/7-2016
5872A	SNARF	GEM 300 TF	Reapproval: SEMI E172, SPECIFICATION FOR SECS EQUIPMENT DATA DICTIONARY (SEDD) Ballot in cycle 6/7-2016
6068	SNARF	I&C TC	Reapproval for SEMI E116-0707E, SPECIFICATION FOR EQUIPMENT PERFORMANCE TRACKING AND SEMI E116.1-0707, SPECIFICATION FOR SECS-II PROTOCOL FOR EQUIPMENT PERFORMANCE TRACKING (EPT) Ballot in cycle 6/7-2016
6066	SNARF	I&C TC	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) Ballot in cycle 6/7-2016
6026	SNARF	I&C TC	Reapproval for SEMI E109-1110 SPECIFICATION FOR RETICLE AND POD MANAGEMENT (RPMS)
6064	SNARF	I&C TC	Reapproval for SEMI E121-0305, GUIDE FOR STYLE AND USAGE OF XML FOR SEMICONDUCTOR MANUFACTURING APPLICATIONS Ballot in cycle 6/7-2016
6065	SNARF	I&C TC	Reapproval for SEMI E151-1211, GUIDE FOR UNDERSTANDING DATA QUALITY Ballot in cycle 6/7-2016
6038	SNARF	I&C TC	Reapproval for SEMI E160-1211, SPECIFICATION FOR COMMUNICATION OF DATA QUALITY Ballot in cycle 6/7-2016
6067	SNARF	I&C TC	Reapproval for SEMI E54.10-0600, SPECIFICATION FOR SENSOR/ACTUATOR NETWORK SPECIFIC DEVICE MODEL FOR AN IN SITU PARTICLE MONITOR DEVICE Ballot in cycle 6/7-2016

Table 6 New Action Items

Item #	Assigned to	Details
2016 July#01	James Amano	Inform Taiwan SEMI about Smart Manufacturing activities
2016 July#02	Shannon Austin (SEMI)	Evaluate the revision control tools improvement (beyond “ ” revision bar.)
2016 July#03	ESEC TF	Clarify definition of “mode” and “state” in relevant documents.
2016 July#04	Inna Skvortsova	Forward to SEMI Japan (Chie) Smart Manufacturing; IMC, and DRS presentation to be sent to proper TC in Japan. Closed.
2016 July#05	James Moyne	Review SEMI E54.16-1106 (Reapproved 1211) and discuss with SB TF.

Table 7 Previous Meeting Action Items

Item #	Assigned to	Details
2016Mar#01	James Amano	Draft ballot proposal for E30 revision (reorganization of introductory sections) and send to GEM300 TF leaders for review. Closed.
2016Mar#02	James Amano. James Moyne	Review E54.16 (Specification for Sensor/Actuator Network Communications for LONWORKS) and form recommendation for revision, Reapproval, or inactive. On-going.



Table 7 Previous Meeting Action Items

<i>Item #</i>	<i>Assigned to</i>	<i>Details</i>
2016Mar#03	James Amano	Issue Ratification Ballot 5274G. Closed.

1 Welcome, Reminders, and Introductions

Jack Ghiselli called the meeting to order at 8:07AM. The meeting reminders on antitrust issues, intellectual property issues and holding meetings with international attendance were reviewed. Attendees introduced themselves.

Attachment 01: SEMI Standards Required Meeting Elements.ppt

2 Review of Previous Meeting Minutes

The TC Chapter reviewed the minutes of the previous meeting.

- Motion:** To approve the previous meeting minutes from Spring 2016 TC Meeting
By / 2nd: James Moyne (AMAT/UMICH) / Gino Crispieri (AMAT)
Discussion: None
Vote: 18:0. Motion passed.

3 Liaison Reports

I&C Europe TC Chapter

James Amano (SEMI) reported for the I&C Europe TC Chapter. Of note:

- Leadership
 - Committee Co-chairs
 - Alfred Honold (InReCon)
 - Frank Petzold (Trustsec)
 - Leadership Changes: None
- Meeting Information
 - Last meeting: October 7, 2015 @ SEMICON Europa 2015 Standards Meetings, Dresden, Germany
 - Next meeting: October 26, 2016 @ SEMICON Europa 2016 Standards Meetings, Grenoble, France
- Ballot Results: None
- New Activities: None
- Current Ballots: None
- Task Force Reports
 - Process Control Task Force
 - A group of people discusses a probable new activity for the TF
 - “PMML for unsupervised learning models”
 - The results of the discussion will be reported at the next committee meeting
- Next Europe I&C Meetings (tentative schedule)



- The next Europe Information & Controls standards meetings are tentatively scheduled for October 26, 2016 at AlpeXpo in Grenoble, France in conjunction with the Europe Standards SEMICON 2016 meetings.
- Europe Joint PIC, I&C and Metrics TC Chapter Meeting October 26, 2016 (14:00 – 16:00)
For meeting details, registration, the latest schedule, and travel information please visit
- <http://www.semiconeuropa.org/node/3426>
- For more information or to participate in any Europe I&C activities, please contact James Amano (jamaano@semi.org)

Attachment 03: Europe I&C TC Report (July 2016).ppt

I&C Japan TC Chapter

Nishimura Takayuki (SCREEN) reported for the I&C Japan TC Chapter. Of note:

- I&C Japan TC Chapter Leadership
 - Co-chairs
 - Takayuki Nishimura / SCREEN Semiconductor Solutions
 - Mitsuhiro Matsuda / Hitachi Kokusai Electric
 - Advisor
 - Mitch Sakamoto / Consultant
 - Technical Architect
 - Hiroshi Kondo / Murata Machinery
 - Tadashi Mochizuki / Tokyo Electron
 - Technical Editor
 - TBA
- Document Review Summary at Japan Standards Summer 2016 Meetings
 - Doc#5601A: New Standard: Specification for Wafer Job Management (WJM)
 - Passed with tech and editorial changes
- Approved SNARF at Japan Standards Summer 2016 Meetings

Doc #	Description	TF
6034	Reapproval of SEMI E54.21-1110 “Specification for Sensor Actuator Network for MOTIONNET® Communication”	--
6035	Line Item Revision to SEMI E91-0600 (Reapproved 1109) “Specification for Prober Specific Equipment Model (PSEM)”	JA I&CC Maintenance TF
6033	Line item revision to SEMI E99-1104E (Reapproved 0710) “The Carrier ID Reader/Writer Functional Standard: Specification of Concepts, Behavior, and Services” and SEMI E99.1-1104 (Reapproved 0710) “Specification for SECS-I and SECS-II Protocol for Carrier ID Reader/Writer Functional Standard”	JA I&CC Maintenance TF
6036	Reapproval of SEMI E153-0310 “Specification for AMHS SEM (AMHS SEM)”	--
5973 Revision	Line Item Revision to SEMI E170-0416 “Specification for Secured Foundation of Recipe Management System (SFORMS)” and SEMI E170.1-	GEM300 TF



	0416 “Specification for SECS-II Protocol for Secured Foundation of Recipe Management System”	
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- Withdrawal of 5615 by JA I&CC Maintenance TF was approved.
- #5615: SNARF for Revision to SEMI E98-0309 “Provisional Specification for Object-Based Equipment Model” and SEMI E98.1-1102 (Reapproved 0309) “Provisional Specification for SECS-II Protocol for the Object-Based Equipment Model”
- Ballots to be reviewed at Japan Standards Fall 2016 Meetings

Cycle 7 - 2016		
Doc #	Description	TF
6034	Reapproval of SEMI E54.21-1110 “Specification for Sensor Actuator Network for MOTIONNET® Communication”	--
6035	Line Item Revision to SEMI E91-0600 (Reapproved 1109) “Specification for Prober Specific Equipment Model (PSEM)”	JA I&CC Maintenance TF
6033	Line item revision to SEMI E99-1104E (Reapproved 0710) “The Carrier ID Reader/Writer Functional Standard: Specification of Concepts, Behavior, and Services” and SEMI E99.1-1104 (Reapproved 0710) “Specification for SECS-I and SECS-II Protocol for Carrier ID Reader/Writer Functional Standard”	JA I&CC Maintenance TF
6036	Reapproval of SEMI E153-0310 “Specification for AMHS SEM (AMHS SEM)”	--
5973	Line Item Revision to SEMI E170-0416 “Specification for Secured Foundation of Recipe Management System (SFORMS)” and SEMI E170.1-0416 “Specification for SECS-II Protocol for Secured Foundation of Recipe Management System”	GEM300 TF

- Ratification Ballot to be issued
 - Doc.# R5601A: New Standard: Specification for Wafer Job Management (WJM)
 - By GEM 300 TF
- Task Force Updates:
 - Equipment Information System Security (EISS) TF
 - Last TF Meeting 10:00 - 11:00, Wednesday, June 15th, 2016
 - 11 attendees in person
 - Discussed the SNARF for Access Control
 - No consensus has been reached
 - Decided to suspend the discussion
 - Proposal from GEM300 TF
 - To define Access Control in GEM300A architecture.
 - Agreed to endorse GEM300 TF proposal.
 - Fiducial Mark Interoperability TF
 - The latest TF meeting on Nov. 18, 2015
 - T7 issues
 - SNARF 5890



- Delete all position specifications from SEMI T7 because position specifications are also described on SEMI M1 and other related Silicon Standard.
- Document 5890
 - Submitting to 2015 Cycle 7, passed with editorial changes at JA TC Chapter meeting of Traceability TC on Dec. 18, 2015, and passed A&R.
 - Published as T7-0516.
- Others
 - Assembly and Packaging: Discussing backend alignment issues with introducing fiducial mark wafer.
 - TF leaders to start discussion about disbanding this TF if the TF doesn't have further activity.
- GEM 300TF
 - #5888, Revision to SEMI E170 & SEMI E170.1 (PRC to SFORMS)
 - Ballot was passed with editorial changes at I&C Japan TC Chapter meeting in conjunction with SEMICON Japan 2015 on December 18, 2015.
 - Published as SEMI E170-0416 and SEMI E170.1-0416
 - #5973: Line Item Revision to SEMI E170 & SEMI E170.1
 - SNARF revision was approved at I&C Japan TC Chapter meeting on June 16.
 - It is highly probable that documentation quality issues
 - Ballot submission for Cycle 7 or Cycle 8 was approved at Japan TC Chapter meeting on June 16.
 - #5601: New Standards for “Wafer Job Management”
 - Ballot #5601A was passed with tech and editorial changes at I&C Japan TC Chapter meeting on June 16.
 - New activity proposal
 - TF consider to propose new standard “CUARAM: Centralized User Authentication & Role Authorization Management”
 - Scope was discussed with EISS TF.
 - SNARF is scheduled to submit for the next TC Chapter meeting.
 - TF consider to propose revision ballot of E170.1, E171.1 and E5
 - According to comment from potential Standards users at GEM300A STEP, TF consider to simplify each subordinate standard by using dedicated SECS II message, instead of OSS generic service.
 - Assumed stream number for E170.1 is S20, and E171.1 is S21.
 - SNARF is scheduled to submit for the next TC Chapter meeting.
 - #5618
 - TF decided to give up the activity for #5618: New Standard: Specification for Preservation of Recipe Integrity (PRI), which is owned by NA TC Chapter.
- JA I&CC Maintenance TF
 - The TF meeting was held on April 14, 2016 at SEMI Japan.
 - SEMI E98&E98.1 (OBEM)
 - SNARF #5615 withdrawal was approved at Japan TC Chapter meeting on June 16.



- SEMI E153 (AMHS SEM)
 - Technical revision is not required by review.
 - SNARF for Reapproval and ballot submission for Cycle 7 were approved at Japan TC Chapter meeting on June 16.
- SEMI E99 and E99.1 (Carrier ID Reader/Writer)
 - SNARF for Line Item Revision and ballot submission for Cycle 7 were approved at Japan TC Chapter meeting on June 16.
- SEMI E91 (PSEM)
 - SNARF for Line Item Revision and ballot submission for Cycle 7 were approved at Japan TC Chapter meeting on June 16.
- SEMI E54.21 (MOTIONNET®)
 - SNARF for Reapproval and ballot submission for Cycle 7 were approved at Japan TC Chapter meeting on June 16.
- The activity of SEMI E107 “Specification of Electric Failure Link Data Format for Yield Management System”
 - No action to be made.
- Announcement
 - GEM300A
 - SEMI E170, SEMI E171 and #5601 document group was named “GEM300A”.
 - STEP/GEM300A
 - Held on Friday, May 20, 13:00-18:30, at SEMI Japan office
 - 36 attendees
 - Covers SEMI E170 and SEMI E171
 - Hosted by I&C Japan TC Chapter
 - Co-chairs
 - Takayuki Nishimura (SCREEN) and Mitsuhiro Matsuda (Hitachi Kokusai Electric)
 - Speakers
 - Koji Kitajima and Syoichi Harakawa (Toshiba)
 - Yoshihisa Takasaki (SCREEN)
 - Yuko Toyoshima (Hitachi High Technologies)
- Meeting Information - Japan TC
 - Last Meeting – Japan Summer 2016 Meetings:
 - Thursday, June 16, 2016 1:30PM-5:00PM
 - At SEMI Japan Office, Tokyo, Japan
 - Next Meeting – Japan Fall 2016 Meetings:
 - Friday, October 21, 2016 1:30PM-5:00PM
 - @ SEMI Japan Office, Tokyo, Japan
 - Fall in October 21, 2016
 - Winter in December 16, 2016 (tentative) in conjunction with SEMICON Japan 2016
 - Spring in April, 2017
 - Summer in June, 2017
- For more information, please contact Chie Yanagisawa at SEMI Japan (cyanagisawa@semi.org)

Attachment 04: Japan I&C TC Report (July 2016).ppt



I&C Korea TC Chapter

Natalie Shin (SEMI) reported for the I&C Korea TC Chapter. Of note:

- Leadership
 - Committee Co-chairs
 - Chulhong Ahn/ SK Hynix
 - Hyungsu Kim/ Doople
 - Gunwoo Lee / Lam Research
 - No Leadership Change
- Last meeting
 - Friday, April 29, 2016 at SEMI Korea Office
- Next meeting
 - Friday, October 7, 2016 at SEMI Korea Office
- Major Updates
 - No ballot authorized for Cycle 5 - 7
 - 5320 (E116 and E116.1 Revision) abolished on April 29.
 - Back-end Study Group formation is under discussion. The SG will focus on how to extend the usage of SEMI software standards into assembly and packaging areas.
- Task Force Updates
 - DDA TF
 - None
 - GEM300 TF
 - 5320 (E116 and E116.1 revision) abolished.
 - 5832 (New Standard, Specification for Generic Counter Model)
 - Technical discussion is ongoing. Plan to submit ballot by the end of 2016.
 - 5833 (New Standard, Specification for Maintenance Program Model) are under drafting.
 - Explaining the difference between E40 and 5833 is the main topic. Plan to submit ballot by the end of 2016.
- For more information or participate in any Korea activities, please contact Natalie Shim at SEMI
eshim@semi.org

Attachment 05: Korea I&C TC Report (July2016)

I&C Taiwan TC Chapter

James Amano (SEMI) reported for the I&C Taiwan TC Chapter. Of note:

- Leadership
 - I&C TC Chair: Rober Chien (TSMC)
 - Equipment Information Integration TF: Robin Liao (TSMC)
 - GEM300 TF: Robin Liao (TSMC)
 - Backend Factory Integration TF: Ivan Chen (TSMC)
- Task Force Update
 - Equipment Information Integration TF Task Force
 - The Task Force currently has no activities.
 - GEM300 TF
 - The Task Force currently has no activities.



- Backend Factory Integration TF
 - Completed the mandatory two-week global I&C TC Member review of New SNARF for “Specification of Backend Die Traceability” on April 27.
 - Currently discussing the comments received from global I&C TC members. Will report at the next TC meeting which will be hold Sept. 9.
- PCB TF
 - Under Developing a new Task Force: “PCB TF” for Printed Circuit Board industry.
- Meeting Information
 - Last Meeting
 - Apr 8, 2016
 - 2F, No.3 , Taiyuan 1st Street Zhubei City, Hsinchu county 30265, Taiwan
 - Next Meeting
 - September 9, 2016 (Tentative);
 - AMBASSADOR HOTEL HSINCHU
- Regional SEMI Staff Contact
 - Dan Chang, dchang@semi.org

Action Item: (James Amano) To inform Taiwan SEMI about Smart Manufacturing activities

Attachment 06: Taiwan I&C TC Report (July 2016)

SEMI Staff Report

James Amano (SEMI) gave the SEMI Staff Report. Of note:

SEMI Global 2016 Calendar of Events

- SEMICON West (July 12-14, San Francisco, California)
- SEMICON Taiwan (September 7-9, Taipei)
- SEMICON Europa (October 25-27, Grenoble, France)
- SEMICON Japan (December 14-16, Tokyo)
- SEMICON West (July 12-14, San Francisco, California)

Upcoming North America Meetings (2016/2017)

- NA Standards Fall 2016 Meetings (November 7-10, San Jose, California)
- NA Standards Spring 2017 Meetings (April 3-6, San Jose, California)
- SEMICON West 2017 Meetings (July 10-13, San Francisco, California)

Letter Ballot Critical Dates for NA Standards Fall 2016 meetings

- Cycle 6: due July 22 / Voting Period: August 1 – September 1
- Cycle 7: due August 17 / Voting Period: August 31 – September 30

<http://www.semi.org/en/Standards/Ballots>



- SEMI Standards Publications

- Publications Report

Cycle	New	Revised	Reapproved	Withdrawn
March 2016	2	20	4	0
April 2016	0	8	10	0
May 2016	2	3	0	0
June 2016	0	4	3	0

- Total in portfolio – 964 (includes 141 Inactive Standards)

New Requirements/Process Reminders for TC Chapter Meetings

- Standards Document Development Project Period
 - Project period shall not exceed 3 years (*Regulations ¶ 8.3.2*)
 - SNARF approval to TC Chapter approval
 - If Document development activity is found to be continuing, but cannot be completed within the project period, the TC Chapter may grant a one-year extension at a time, as many times as necessary.
 - The TC Chapter should review the expiration dates for all applicable SNARFs at each TC Chapter meeting. (*Procedure Manual Note 10*)
 - SNARF Review Period
 - A submitted SNARF for a new, or for a major revision to an existing, Standard or Safety Guideline is made available to all members of a TC Chapter’s parent global technical committee for two weeks for their review and comment. (*Regulations ¶ 8.2.1*)
 - If the SNARF is submitted at a TC Chapter meeting, the TC Chapter can review and approve it, but the SNARF will need to be distributed for two weeks, and then finally approved via GCS.
 - New SNARF & TFOF forms
 - Procedures for Correcting Nonconforming Titles of Published Standards Document (*Procedure Manual Appendix 4*)
 - Some Standards qualify for a special procedure where a line item change can be used to correct the titles. Otherwise, the corrective action will likely require a major revision.

Attachment 07: SEMI Standard Staff Report I&C (July 2016)

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.

TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment number for each balloted document is provided under each ballot review section below.



The TC Chapter reviewed the Document #5549, Revision to SEMI E30, GENERIC MODEL FOR COMMUNICATIONS AND CONTROL OF MANUFACTURING EQUIPMENT (GEM) WITH TITLE CHANGE TO: SPECIFICATION FOR THE GENERIC MODEL FOR COMMUNICATIONS AND CONTROL OF MANUFACTURING EQUIPMENT (GEM)

I&C TC accepted the GEM 300 Task Force recommendation to find Negative# 2 submitted by Mitch Sakamoto (Self) to be related and technically persuasive.

The ballot **failed** and will be reworked by Task Force and resubmitted in Cycle 7 or 8 2016.

Motion: Rework Document #5549 and resubmit for balloting in Cycle 7 or 8 2016.
By / 2nd: Takayuki Nishimura (SCREEN)/Christian Hoffmann (PEER Group)
Discussion: None
Vote: 20-0. Motion passed.

The TC Chapter reviewed the Document #5872, Revisions to SEMI E172, SPECIFICATION FOR SECS EQUIPMENT DATA DICTIONARY (SEDD) - Enhancement To E172.

I&C TC found Negative #1 submitted by Albert Fuchigami (AFF Peer) to be related and technically persuasive.

The ballot **failed** and will be reworked by Task Force.

Motion: Document #5872 Negative 1 from Fuchigami (AFF Peer) is related and technically persuasive.
By / 2nd: Brian Rubow (Cimetrix)/Christian Hoffmann (PEER Group)
Discussion: Remote command definition is missing and must be addressed.
Vote: 17-0. Motion passed.

The TC Chapter reviewed the Document # 5821C, New Standard: SPECIFICATION FOR ENERGY SAVINGS MODE COMMUNICATION BETWEEN SEMICONDUCTOR EQUIPMENT AND SUB-SYSTEMS

The ballot **passed** TC review with technical changes (ratification ballot) to address negatives submitted by Mitsuhiro Matsuda and Supika Mashiro.

Motion: The Document #5821C passes TC review with technical changes and will be submitted to the A&R review as a ratification ballot
By / 2nd: Gino Crispieri (AMAT)/Mike Czerniak (EDWARDS)
Discussion: None
Vote: 17-0. Motion passed.

Attachment 08: 5821C_Procedural Review

The TC Chapter reviewed and approved the Document #5912A Line Item Revisions to SEMI - SEMI E142.1 -0211, XML Schema for Substrate Mapping; - SEMI E142.2-0211, SECS II Protocol for Substrate Mapping; - SEMI E142.3-0211, Web Services for Substrate Mapping

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #5912A to the A&R review
By / 2nd: Brian Rubow (Cimetrix)/Christian Hoffmann (PEER Group)
Discussion: None
Vote: 19-0. Motion passed.

Attachment 09: 5912A_Procedural Review



The TC Chapter reviewed and approved the Document #6020 Revisions to Line Item revision to SEMI E30.1-0309: INSPECTION AND REVIEW SPECIFIC EQUIPMENT MODEL (ISEM) to correct nonconforming title.

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #6020 to the A&R review
By / 2nd: Nick Infelise (Omron Automation)/Brian Rubow (Cimetrix)
Discussion: None
Vote: 21-0. Motion passed.

Attachment 10: 6020_Procedural Review

The TC Chapter reviewed and approved the Document # 6021, Line Item revision TO SEMI E123-0703 (REAPPROVED 1109): STANDARD FOR HANDLER EQUIPMENT SPECIFIC EQUIPMENT MODEL (HSEM) to correct nonconforming title

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #6021 to the A&R review
By / 2nd: Brian Rubow (Cimetrix) / Christian Hoffmann (PEER Group)
Discussion: None
Vote: 21-0. Motion passed.

Attachment 11: 6021_Procedural Review

The TC Chapter reviewed and approved the Document # 6022, Line Item revision to SEMI E138-0709: XML SEMICONDUCTOR COMMON COMPONENTS to correct nonconforming title.

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #6022 to the A&R review
By / 2nd: Brian Rubow (Cimetrix) / Won Tae Kim (WindTree)
Discussion: None
Vote: 20-0. Motion passed.

Attachment 12: 6022_Procedural Review

The TC Chapter reviewed and approved the Document # 6023, Line item revision to SEMI E122: STANDARD FOR TESTER EQUIPMENT SPECIFIC EQUIPMENT MODEL (TSEM) to correct nonconforming title.

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #6023 to the A&R review
By / 2nd: Brian Rubow (Cimetrix) / Nick Infelise (Omron Automation)
Discussion: None
Vote: 21-0. Motion passed.

Attachment 13: 6023_Procedural Review



The TC Chapter reviewed and approved the Document # 6024, Reapproval of SEMI E30.5: SPECIFICATION FOR METROLOGY SPECIFIC EQUIPMENT MODEL (MSEM).

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #6024 to the A&R review
By / 2nd: Brian Rubow (Cimetrix) / Nick Infelise (Omron Automation)
Discussion: None
Vote: 20-0. Motion passed.

Attachment 14: 6024_Procedural Review

The TC Chapter reviewed and approved the Document # 6025, Reapproval of SEMI E142: SPECIFICATION FOR SUBSTRATE MAPPING.

The ballot **passed** TC review. Details can be found in the attached Procedural Review file.

Motion: To move Document #6025 to the A&R review
By / 2nd: Brian Rubow (Cimetrix) / Nick Infelise (Omron Automation)
Discussion: None
Vote: 20-0. Motion passed.

Attachment 15: 6025_Procedural Review

5 Subcommittee and Task Force Reports

Diagnostic Data Acquisition (DDA) Task Force

Brian Rubow (Cimetrix) reported for the DDA Task Force. Of note:

- DDA – TF Status:
 - Last Meeting: Spring 2016, SEMI HQ, San Jose
 - Fall Meeting Attendance:
 - 10 in person, 2 remote
 - Leadership:
 - Gino Crispieri is stepping down from the DDA TF co-chair position.
- Ballot Activity Summary
 - Ballot Adjudication
 - PASSED
 - 6022 E138 Non-Conforming Title
 - Forward SEMI Draft Document 6022 to the ISC A&R as balloted.
 - New/Updated SNARF(s)
 - None
 - Ballot Plans next cycles
 - None

Attachment 16: SEMI NA-DDA-TF Report (July 2016)



Energy Saving Equipment Communication (ESEC) Task Force

Gino Crispieri (AMAT) reported for the ESEC Task Force. Of note:

- Meeting Attendance: 14
 - 12 in person and 2 remotely
- Leadership Changes (if any)
 - Gino Crispieri steps down and Andreas Neuber (AMAT) takes over his chair position.
 - Mike Czerniak remains.
- Old Task Force Business
 - Ballots Reviewed 5821C
 - Other documents in development - None
- New Task Force Business
 - Ballot Plans – Ratification ballot plans for two technical changes discussed during ballot response review.
 - SNARF for a follow up line item to address Mitch Sakamoto and Mitsuhiro Matsuda
- Upcoming STEP
- Next Meeting: Tuesday, 9:00 AM- 12:00 PM, room size =10

Attachment 17: ESEC TF Report (July 2016)

GEM300 Task Force

Brian Rubow (Cimetrix) reported for the GEM300 Task Force. Of note:

- GEM300 TF Meeting Summary
 - Gino Crispieri has stepped down
 - GEM 300 TF meeting Tuesday 07/12/2016
 - 17 attendees in person
 - 1 attendees remote
 - Ballot Activity Summary
 - Ballot Adjudication
 - FAILED
 - 5549 E30 Title Change
 - 5872 E172 SEDD Update
 - PASSED
 - 5912A-1, 5912A-2, 5912A-3 E142.1, E141.2, E141.3 Non-Conforming Title
 - 6020 E30.1 ISEM Non-Conforming Title
 - 6021 E123 HSEM Non-Conforming Title
 - 6023 E122 TSEM Non-Conforming Title
 - 6024 E30.5 MSEM Re-Approval
 - 6025 E142 Substrate Mapping Re-Approval
 - New/Updated SNARF(s): None
 - Ballot Plans next cycles
 - 5872A
 - 6005 postponed
 - 5738 E87.1-0707 Provisional



- 5549A
- Withdraw 5618 SNARF

Attachment 18: SEMI NA-ICC-GEM300 TF Report (July 2016).ppt

Action Item: (ESEC TF) Clarify definition of “mode” and “state” in relevant documents.

Process Control Systems (PCS) Task Force

James Moyne (AMAT/UMICH) reported for the PCS Task Force. Of note:

- PSC TF Meeting Summary, July 11 2016
 - 5 Attendees
 - No leadership changes
 - No ballots adjudicated
 - Discussions on ballot 5716 for updates to E133 and E133.1
 - Proposing to ballot in Cycle 7 2016
 - Looking to APC Conference do determine roadmap
 - www.apconference.com
 - IMA APC Council meeting at APC Conference

Attachment 19: PCS TF Report (July 2016).ppt

Sensor Bus Task Force

James Moyne (AMAT/UMICH) reported for the SB Task Force. Of note:

- SB Task Force Meeting Summary, July 12 2016
 - 5 +Attendees
 - No leadership changes
 - No ballots adjudicated
 - Ballot R5274G is a ratification ballot
- New business
 - May consider line item updates to E54 “dot” standards in the future

Attachment 20: SB TF Report (July 2016).ppt

6 Old Business

Standards due for 5 Year Review

6.1.1 James Amano addressed the committee on this topic. Of note:

Name	Due for Review	Title	Status
SEMI E116-0707E	7/1/2012	Specification for Equipment Performance Tracking	Now ownership by NA I&C TC. Submit for reapproval in Cycle 6/7-2016.
**SEMI E98-0309	3/1/2014	Provisional Standard for the Object-Based Equipment Model (OBEM)	Responsibility of Japan Maintenance TF



SEMI E130-1104 (Reapproved 0710)	7/1/2015	Specification for Prober Specific Equipment Model for 300 mm Environment (PSEM300)	Submit for reapproval in Cycle 6/7-2016.
SEMI E109-1110	11/1/2015	Specification for Reticle and Pod Management (RPMS)	Submit for reapproval in Cycle 6/7-2016.
SEMI E121-0305 (Reapproved 1111)	11/1/2016	Guide for Style and Usage of XML for Semiconductor Manufacturing Applications	Submit for reapproval in Cycle 6/7-2016.
SEMI E54.10-0600 (Reapproved 1111)	11/1/2016	Specification for Sensor/Actuator Network Specific Device Model for an In-Situ Particle Monitor Device	Submit for reapproval in Cycle 6/7-2016.
SEMI E151-1211	12/1/2016	Guide for Understanding Data Quality	Submit for reapproval in Cycle 6/7-2016.
SEMI E160-1211	12/1/2016	Specification for Communication of Data Quality	Submit for reapproval in Cycle 6/7-2016.
SEMI E54.16-1106 (Reapproved 1211)	12/1/2016	Specification for Sensor/Actuator Network Communications for LonWorks	James Moyne to review and discuss with SB TF before reapproval.
SEMI E87-0312	3/1/2017	Specification for Carrier Management (CMS)	July 2016 - motion to transfer ownership from Korea GEM 300 to NA I&C GEM 300 TF.
SEMI E90-0312	3/1/2017	Specification for Substrate Tracking	New SNARF #5966 already exists. WIP.

* Due for Reapproval within 6 years from publication date. Issue "Revision Ballot" beginning of the 5th year.

** **Subject for "Nonconforming Title" review. Please refer to the Procedure Manual Appendix 4 (page 76)**

Motion: To approve for ballot for Cycle 6 or 7 2016 the following documents: SEMI E133; E172; E87.1; E30; E116 & E116.1; E130; E109; E121; E151; E160; E54.10
By / 2nd: James Moyne (AMAT/UMICH) / Jack Ghiselli (Ghiselli Consulting)
Discussion: none
Vote: 11-0. Motion passed.

SNARFs Approaching 3-Year Review

6.1.2 The TC Chapter reviewed the below SNARF, and recommended to granted a one-year extension:

- SNARF #5549 - Revision to SEMI E30, GENERIC MODEL FOR COMMUNICATIONS AND CONTROL OF MANUFACTURING EQUIPMENT (GEM) WITH TITLE CHANGE TO: SPECIFICATION FOR THE GENERIC MODEL FOR COMMUNICATIONS AND CONTROL OF MANUFACTURING EQUIPMENT (GEM)

Motion: To grant one-year extensions to SNARF# 5549
By / 2nd: Brian Rubow (Cimetrix) / James Moyne (AMAT/UMICH)
Discussion: For ballot #5549A, put a note that section reference is now changed for revised E30.
Vote: 18-0. Motion passed.

6.1.3 The TC Chapter reviewed and recommended to abolish the below SNARFs:



- SNARF #5589 - Revisions to: - SEMI E5, SEMI EQUIPMENT COMMUNICATIONS STANDARD 2 MESSAGE CONTENT (SECS-II); - SEMI E40.1, SECS-II SUPPORT FOR PROCESSING MANAGEMENT STANDARD; - SEMI E90.1, SPECIFICATION FOR SECS-II PROTOCOL SUBSTRATE TRACKING; - SEMI E94.1, SPECIFICATION FOR SECS-II PROTOCOL FOR CONTROL JOB MANAGEMENT (CJM); - SEMI E109, SPECIFICATION FOR RETICLE AND POD MANAGEMENT (RPMS); - SEMI E109.1, SPECIFICATION FOR SECS-II PROTOCOL FOR RETICLE AND POD MANAGEMENT (RPMS); AND - SEMI E116.1, SPECIFICATION FOR SECS-II PROTOCOL FOR EQUIPMENT PERFORMANCE TRACKING (EPT);
- SNARF #5618 - New Standard: SPECIFICATION FOR PRESERVATION OF RECIPE INTEGRITY

Motion: To abolish SNARF# 5589 and SNARF# 5618
By / 2nd: Jack Ghiselli (Ghiselli Consulting)/ Frank Summers (Industrial Strength Graphics)
Discussion: None
Vote: 18-0. Motion passed.

6.1.4 The TC discussed and agreed to accept ownership (transfer ownership from GEM300 Korea TF to NA GEM300 TF):

- SNARF #5738 Revision to E87.1-0707, SPECIFICATION FOR SECS-II PROTOCOL FOR CARRIER MANAGEMENT (CMS)

Motion: Accept ownership for SNARF #5738
By / 2nd: Jack Ghiselli (Ghiselli Consulting)/ Frank Summers (Industrial Strength Graphics)
Discussion: None
Vote: 18-0. Motion passed.

TC asks SEMI staff to improve revisions control related tracking changes. Revision bar “|” seems to be not sufficient for technical reader (comment provided by Kim Hyungsu and supported by multiple members of the TC.

Action Item: (Shannon A. SEMI Publishing) Evaluate the revision control tools improvement (beyond “|” revision bar.)

7 New Business

New TFOFs and SNARFs

7.1.1 Frank Summers proposed new activity for GUI (HCI) TF. Title and scope of the TF was discussed and finalized by TC during the TC meeting.

Motion: To approve GUI (HCI) TF activity
By / 2nd: Matsuda Mitsuhiro (Hitachi Kokusai) / Frank Summers (Industrial Strength Graphics)
Discussion: May need to open a new SNARF if scope of the work is beyond just modification of E95 (replacement of the entire document)
Vote: 15-0. Motion passed.

Smart Manufacturing Advisory Council

James Moyne (AMAT/UMICH) addressed the committee on this topic. Of note:

- Smart Mfg Council and I&C Standards Update:
 - Smart Manufacturing “Suite” show progression:



- SECS – SEMI Equipment Communication Standard (SECS-i), E4
- GEM (Generic Equipment Model)
 - The Equipment Data Acquisition Suite of SEMI Standards:
 - SEMI E120-0414
 - SEMI E125-0414
 - SEMI E128-0414
 - SEMI E132-0115
 - SEMI E134-0414
 - SEMI E164-0414
- Current Work
 - FlowShop-Type (Terry)
 - Back-end
 - PCB Assembly (Dan/Ranjan)
- Smart Manufacturing Events at SEMI
 - Automation Forum @ SEMICON SEA – April 26, Penang
 - ASMC – May 16-19, Saratoga Springs
 - Factory Automation & Optimization, Advanced Process Control (APC)
 - Smart Manufacturing @ SEMICON West – July 14, San Francisco
 - **Keynote Stage, North Hall, Room 134**
 - **Thursday, 10:30 AM - 12:30 PM and 2:00 PM - 4:00 PM**
 - October Conference in Singapore
 - Smart Manufacturing @ SEMICON Europa – October 25, Grenoble

International Roadmap for Device and Systems (IRDS)

James Moyne (AMAT/UMICH) addressed the committee on this topic. Of note:

- IRDS Overview
 - Housed in the IEEE Standards Association Industry Connections Program
 - Managed through the IEEE Computer Society
 - Objective:
 - End to End, Device-System technologies
 - First IRDS Roadmap: YE 2017
- 2016 Factory Integration Structure
- IRDS Factory Integration and IC&C
- The FI Chapter incorporates a number of IC&C standards in its roadmap and identifies needs for new standards in this area to address challenges
 - Examples of existing standards referenced include EDA, PCS, Time Synchronization, ...
 - Examples of current standardization efforts referenced include ESEC (Energy Savings)
 - Examples of requests for future standards include Big Data, prediction (virtual metrology, predictive maintenance, etc.) and security
- Message: Make sure your standards interests are represented in the IRDS FI Chapter
 - Contact James Moyne at moyne@umich.edu

Note: IRDS will need Standards to address the Big Data and the Security topics.

Integrated Measurement Association (IMA) update

James Moyne (AMAT/UMICH) addressed the committee on this topic. Of note:



- The IMA is a not-for-profit organization whose members are technical interests in the areas of sensing, metrology and Advanced Process Control (APC)
- The IMA sponsors
 - the APC Conference
 - the IMA APC Council
- APC Conference presentations and SEMI
 - EDA, PCS time synchronization, data quality, sensor bus, ESEC
 - **It is important that I&C activities be reported at the APC Conference**
 - APC Conference XXVIII 2016, October 17-20, 2016, Mesa, AZ www.apcconference.com

Action Item: (Inna Skvortsova) Forward to SEMI Japan (Chie) Smart Manufacturing; IMA, and IRDS presentation to be sent to proper TC in Japan.

Minority Report

Jack Ghiselli (Ghiselli Consulting) addressed the committee on this topic, including:

- Summary and purpose of the Minority Report
- Minority Report Process (as per Regulations ¶9.9)
- Current instances of Minority Report issued by members of I&C TC
 - Minority Report was submitted for ballot # 5601A.
 - TC Members did not agree with the Japan TC Chapter on Claim #5
 - Minority Report voting in process - votes needed by 7/19/2016
 - Results to be submitted to I&C Japan for reconsideration
 - Results will be published in I&C Japan TC Chapter CER.

8 Next Meeting and Adjournment

The next meeting is scheduled for November 9, 2016 at 8:00 – 16:30, SEMI HQ, San Jose. See <http://www.semi.org/en/events> for the current list of meeting schedules.

Having no further business, a motion was made to adjourn. Adjournment was at 12:53.

Respectfully submitted by:

Inna Skvortsova
 Sr. Standards Coordinator
 SEMI North America
 Phone: 408-9436996
 Email: iskvortsova@semi.org

Minutes approved by:

Jack Ghiselli (Ghiselli Consulting)	09/07/2016
James Moyne (AMAT/ University of Michigan)	09/07/2016



Table 8 Index of Available Attachments^{#1}

#	Title	#	Title
1	SEMI Standards Required Meeting Elements	13	6023_Procedural Review
2	NA I&C TC Meeting Minutes (July 2016)	14	6024_Procedural Review
3	Europe I&C TC Report (July 2016)	15	6025_Procedural Review
4	Japan I&C TC Report (July 2016)	16	SEMI NA-DDA-TF Report (July 2016)
5	Taiwan I&C TC Report (July 2016)	17	ESEC TF Report (July 2016)
6	Korea I&C TC Report (July 2016)	18	SEMI NA-ICC-GEM300-TF Report (July 2016)
7	SEMI Standards Staff Report (July 2016)	19	SEMI NA PCS TF Report (July 2016)
8	5821C_Procedural Review	20	SB TF Report (July 2016)
9	5912A_Procedural Review		
10	6020_Procedural Review		
11	6021_Procedural Review		
12	6022_Procedural Review		

#1 Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact Inna Skvortsova at the contact information above.