



ATE Global Technical Committee

North America (NA) Chapter

Meeting Summary and Minutes

North America Spring 2019 Standards Meetings

April 2, 2019 11:30–13:00

SEMI HQ, Milpitas, California

TC Chapter Announcements

Next TC Chapter Meeting

TBD

Table 1 Meeting Attendees

Italics indicate virtual participants

Cochairs: Mark Roos – Roos Instruments, Stacy Ajouri – Texas Instruments, Laurent Bonneval – Teradyne

SEMI Standards Staff: Inna Skvortsova

<i>Company</i>	<i>Last</i>	<i>First</i>	<i>Company</i>	<i>Last</i>	<i>First</i>
Roos Instruments	Roos	Mark	SEMI	Skvortsova	Inna
Stacy Ajouri	Texas Instruments	Vladimir	SEMI	Trio	Paul
Cohu	Williams	Fitzsche			

Table 2 Leadership Changes

<i>WG/TF/SC/TC Name</i>	<i>Previous Leader</i>	<i>New Leader</i>
ATE Committee	Ajay Khoche (Khoche Consulting)	Mark Roos – Roos Instruments Stacy Ajouri – Texas Instruments Laurent Bonneval – Teradyne
Rich Interactive Database (RITdb) TF [NEW]	n/a	Mark Roos – Roos Instruments Stacy Ajouri – Texas Instruments
Tester Event Messaging for Semiconductors (TEMS) TF [NEW]	n/a	Laurent Bonneval – Teradyne
Standard Test Data Format (STDF) TF	Ajay Khoche – Khoche Consulting	n/a
Test Cell Communications TF	Len Van Eck – LTX Credence Mark Roos – Roos Instruments	n/a

Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
n/a	Rich Interactive Database (RITdb) TF



Table 3 Committee Structure Changes

<i>Previous WG/TF/SC Name</i>	<i>New WG/TF/SC Name or Status Change</i>
	[NEW]
n/a	Tester Event Messaging for Semiconductors (TEMS) TF [NEW]
Standard Test Data Format (STDF) TF	Task Force disbanded
Test Cell Communications TF	Task Force disbanded

Table 4 Ballot Results

<i>Document #</i>	<i>Document Title</i>	<i>Committee Action</i>
None		

Note 1: **Passed** ballots and line items will be submitted to the ISC Audit & Review Subcommittee for procedural review.

Note 2: **Failed** ballots and line items were returned to the originating task forces for re-work and re-balloting or abandoning.

Table 5 Activities Approved by the GCS Prior to the Originating TC Chapter meeting

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
None			

Table 6 Authorized Activities

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

<i>#</i>	<i>Type</i>	<i>SC/TF/WG</i>	<i>Details</i>
6518	SNARF	RITdb TF	New Standard – <i>Specification for Rich Interactive Test Database (RITdb)</i> New SNARF to be distributed for 2-week member review followed by GCS approval
6517	SNARF	TEMS TF	New Standard – <i>Specification for HTTP-JSON Protocol for Test Event Messaging for Semiconductors</i> New SNARF to be distributed for 2-week member review followed by GCS approval

Note 1: SNARFs and TFOFs are available for review on the SEMI Web site at:

<http://downloads.semi.org/web/wstdsbal.nsf/TFOFSNARF>

Table 7 Authorized Ballots

<i>#</i>	<i>When</i>	<i>TF</i>	<i>Details</i>
None			



Table 8 SNARF(s) Granted a One-Year Extension

#	TF	Title	Expiration Date
None			

Table 9 SNARF(s) Abolished

#	TF	Title
None		

Table 10 Standard(s) to Receive Inactive Status

Standard Designation	Title
None	

Table 11 New Action Items

Item #	Assigned to	Details
2019Apr#1	(Stacy A., Inna S.)	To prepare and transfer in formation for RITdb TF to Connect@semi.org collaborative platform. (DONE)
2019Apr#2	(Inna S.)	To provide TF leaders with example of standard with the AUX/Schema file example. (DONE)

Table 12 Previous Meeting Action Items

Item #	Assigned to	Details
None		

1 Welcome, Reminders, and Introductions

Cochair Mark Roos called the meeting to order at 11:35.

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

Attachment 01: SEMI Standards Required Elements.ppt

2 Review of Previous Meeting Minutes

The TC Chapter was inactive since 2011 resuming activities effective April 2, 2019. No previous meeting minutes were available for review from 2011 ATE TC meeting.

3 SEMI Standards Staff Report

Inna Skvortsova (SEMI) gave the SEMI Staff Report. Of note:

SEMI Global 2019 Calendar of Events



- SEMICON Southeast Asia (May 7-9, Kuala Lumpur, Malaysia)
- SEMICON West (July 9-11, San Francisco, California)
- SEMICON Europa (November 12-15, Munich, Germany)
- SEMICON Japan (December 11-13, Tokyo, Japan)

Upcoming North America Meetings

- SEMICON West 2019 Meetings (July 8-11, 2019, San Francisco, California)
 - **Standards Meetings will NOT be at the Marriott, but will be at MOSCONE South Hall this year.**
 - Meeting room details will be available on the web.
- NA Standards Fall 2019 Meetings (November 4-7, 2019, SEMI HQ, Milpitas, California)
- NA Standards Spring 2020 Meetings (March 30 – April 2, 2020, SEMI HQ, Milpitas, California)

Letter Ballot Critical Dates for NA Standards meetings

- Cycle 3-19: due March 12 / Voting Period: March 26 – April 25
- Cycle 4-19: due April 16 / Voting Period: April 30 – May 30
- Cycle 5-19: due May 10 / Voting Period: May 24 – June 24
- Cycle 6-19: due July 19 / Voting Period: July 31 – August 30
- Cycle 7-19: due August 22 / Voting Period: September 4 - October 4
- Cycle 8-19: due October 11 / Voting Period: October 25 – November 25
- Cycle 9-19: due Nov 14 / Voting Period: November 26 – December 26

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

- SEMI Standards Publications

Cycle	New	Revised	Reapproved	Withdrawn
November 2018	1	0	2	0
December 2018	0	7	6	0
January 2019	2	0	0	0
February 2019	1	3	4	0

Total SEMI Standards in portfolio: ~1000. Includes 268 Inactive Standards

Cycle	Designation	Title	Committee	Region
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November 2018	SEMI C97	<i>Specification for Determination of Particle Levels of Gases Delivered as Pipeline Gas or by Pressurized Gas Cylinder</i>	Gases	NA
January 2019	SEMI M88	<i>Practice for Sample Preparation Methods for Measuring Minority Carrier Diffusion Length in Silicon Wafers by Surface Photovoltage Methods</i>	Silicon Wafer	JA
January 2019	SEMI T23	<i>Specification for Single Device Traceability for the Supply Chain</i>	Traceability	NA
February 2019	SEMI PV89	<i>Test Method for Current-Voltage Measurement in Indoor Lighting for Dye-Sensitized Solar Cell and Organic Photovoltaic</i>	Photovoltaic	TW

- Connected@SEMI Community
 - Web link - <https://connect.semi.org>
 - Login using Standards account (username and password)
 - Program Member
 - Join any task forces
 - Post discussion thread
 - TF Leader/Community Admin
 - Add member
 - Upload meeting minutes
 - Communicate TF members
 - Contact your staff if a TF Site is desired
 - Details: www.semi.org/standards → Committee Info → Collaboration Community

- New Forms, *Regulations & Procedure Manual*
 - *Regulations* (Feb 28, 2019)
 - Latest version clarifies procedures applicable for Copyrighted Items and trademarks
 - *Procedure Manual* (Feb 28, 2019)
 - SNARF (Feb 2019)
 - www.semi.org/standards
 - Bottom left, under **Resources!**

- *Style Manual* Update (New version 6 issued March 25, 2019)



- Additions and revisions to harmonize with updated *Regulations* and *Procedure Manual*
- Updates
 - *Company or Organization Trademarks (Table 1, #1-24)*
 - *Active vs. Passive Voice (Table 4, #4-4)*
 - *Word Usage (Table 4, #4-5)*
 - *New Safety Guideline Conformance Notice (Table 8, #8-1)*
- www.1semi.org/standards/standardspublications : **Under Document Authoring Tools**

- *SNARF(s) and TFOF approved by GCS in between TC Chapter Meetings*
 - **None**
- *SNARF three-year status TC Chapter may grant a one-year extension:*
 - **None**
- *Nonconforming Titles*
 - **None**

NOTE: Refer to *Procedure Manual (PM)* Appendix Table A4-1 and A4-2

- *Documents due for 5-Year Review*
 - **None**
- *ATE Committee leadership change*
 - ATE Committee was inactive since 2011 and current Committee. Chair of the Committee, Ajay Khoche – Khoche Consulting is stepping down. Effective this meeting, ATE Committee is resuming its activities effective this meeting under the new leadership.

Motion: Approve appointment of new co-Chairs for the ATE TC: Mark Roos (Roos Instruments) and Stacy Ajouri (Texas Instruments).

By / 2nd: Bill Fitzsche (Cohu) / Atacy Ajouri (Texas Instruments)

Discussion: None

Vote: 2/0. Motion passed.

- *ATE Committee reviewed the proposal to revise current Charter and Scope of ATE Committee for alignment with current industry requirements:*
 - Current Charter
 - This committee explores, evaluates and formulates consensus-based specifications that through voluntary compliance will enhance the manufacturing capability of the semiconductor industry as it relates to back-end test equipment and it's associated procedures and method.
 - Revised Charter
 - This committee explores, evaluates and formulates consensus-based specifications that through voluntary compliance will enhance the manufacturing capability of the semiconductor industry as it relates to test and it's associated environment.



- Current Scope
 - The scope is limited standards, electrical, and standards, guidelines, practices, and spatial equipment specifications for test equipment and test related equipment.
 - This committee also discuss total infrastructure related with Final Testing and process such as Design for Testability, Process Optimization, Test Method, Analysis/Diagnostics Technology and etc.
- Revised Scope
 - The scope is standards, guides, recommendations, practices, and specifications for processes, methods, equipment and infrastructure related to the test operations of semiconductor manufacturing.
 - Included are Adaptive test, System Level Test, Machine Learning, AI, Design for Testability, Process Optimization, Analysis/Diagnostics Technology as they impact or are impacted by test.

Motion: To approve revision of the ATE Committee Charter and Scope

By / 2nd: Stacy Ajouri (Texas Instruments) / Bill Fzsche (Cohu)

Discussion: None

Vote: 2/0. Motion passed.

Attachment 02: SEMI Staff Report ATE TC (Spring 2019).ppt

4 Liaison Reports

As part of SEMI Staff Report, Inna Skvortsova (SEMI) presented summary of SEMI Test Initiatives, Programs, and SEMI Standards activities as related to the scope of ATE Committee. For details, please refer to the Attachment 02: SEMI Staff Report ATE TC (Spring 2019).

5 Ballot Review

NOTE 1: TC Chapter adjudication on ballots reviewed is detailed in the Audits & Review (A&R) Subcommittee Forms for procedural review. The A&R forms are available as attachments to these minutes. The attachment number for each balloted document is provided under each ballot review section below.

- NONE during Spring 2019 Metrics TC Meeting.

6 New Business

6.1 The proposal to transform the ATE Committee organizational structure was reviewed and approved at the Committee meeting to support current needs of semiconductor testing. Proposal details are listed below, including disbandment of existing and authorization of new Task Forces.

- **Standard Test Data Format (STDF) Task Force** completed its efforts and will be disbanded.
- **Test Cell Communications Task Force** activities will be transferred to the new **Tester Event Messaging for Semiconductors (TEMS) Task Force**

Motion: To disband STDF and Test Cell Communications Task Forces.

By / 2nd: Stacy Ajouri (Texas Instruments) / Bill Fzsche (Cohu)

Discussion: None

Vote: 2/0. Motion passed.



- Rich Interactive Database (RITdb) Introduction:
 - The support of Industry 4.0 in semiconductor test requires the inclusion of IOT, M2M, Analytics and Machine learning. RITdb defines a data collection and delivery standard for semiconductor test which leverages worldwide standards in IOT messaging and real time data streaming. Moving away from a people oriented, client server approach to a machine oriented data cloud requires a change in how test data is defined and distributed. New attributes of quality, trust and security are needed to support this change. RITdb addresses these needs by standardizing the data structure, content and distribution while supporting the needs of both legacy and new equipment

- Committee reviewed and approve the proposal to form RITdb Task Force under the leadership of Stacy Ajouri (Texas Instruments) and Mark Roos (Roos Instruments)

Motion: Authorize new RITdb Task Force under the leadership of Stacy Ajouri (Texas Instruments) and Mark Roos (Roos Instruments)

By / 2nd: Stacy Ajouri (Texas Instruments) / Bill Fitzsche (Cohu)

Discussion: None

Vote: 2/0. Motion passed.

- RITdb Task Force Charter:
 - To create a standardized architecture that supports smart adaptive testing for semiconductor makers by providing ready access to integrated, consistent, easy-to-use data across the entire manufacturing and test process.

- RITdb Task Force Scope:
 - The support of Industry 4.0 in semiconductor test requires the inclusion of IOT, M2M, Analytics and Machine learning. RITdb defines a data collection and delivery standard for semiconductor test which leverages worldwide standards in IOT messaging and real time data streaming. Moving away from a people oriented, client server approach to a machine-oriented data cloud requires a change in how test data is defined and distributed. New attributes of quality, trust and security are needed to support this change. The RITdb TF will address these needs by standardizing the data structure, content and distribution while supporting the needs of both legacy and new equipment.

- Tester Event Messaging for Semiconductors (TEMS) Introduction:
 - TEMS is an activity focused on establishing a vendor-neutral way to collect test cell data by standardizing ATE data messaging system based on industry-standard internet communication protocols between a test cell host and a server. This effort aims to address the surging demand for real-time data analysis, real-time ATE input and control of the test flow to improve test yield, throughput, efficiency, and product quality.

- Committee reviewed and approve the proposal to form TEMS Task Force under the leadership of Laurent Bonneval (Teradyne)

Motion: Authorize new TEMS Task Force under the leadership of Laurent Bonneval (Teradyne)

By / 2nd: Stacy Ajouri (Texas Instruments) / Bill Fitzsche (Cohu)

Discussion: None

Vote: 2/0. Motion passed.

- TEMS Task Force Charter:
 - To develop a standardized ATE data messaging system based on standard internet communication protocols between a Test Cell host and a server.
- TEMS Task Force Scope:



- Activities will only address ATE data interface requirements and not seek to address other data communication interface requirements in semiconductor test operations, such as those involving handlers, test communications, test instrumentation, and other systems.

RITdb and TEMS are initiatives originated from the SEMI Collaborative Alliance for Semiconductor Test (CAST) Technology Community. SEMI Standards ATE Technical Committee is responsible for driving these technical proposals through the formal standardization process.

6.2 *New SNARFs*

- New SNARFs proposals were presented by RITdb and TEMS TFs during ATE Committee meeting. These new SNARFs will be authorized via GCS after mandatory 2 week member review.

6.3 *New Ballots*

- None

7 Action Items Review

7.1 *Previous Meeting(s) Action Items*

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

7.2 *New Action Items*

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

8 Next Meeting and Adjournment

The next meeting is tentatively planned for July 8, 2019 at Moscone Center, San Francisco, CA. See <http://www.semi.org/en/events> for the current list of meeting schedules.

Having no further business, a motion was made to adjourn at 12:56PM.

Respectfully submitted by:

Inna Skvortsova

Sr. Standards Coordinator

SEMI North America

Phone: 408-943-6996

Email: iskvortsova@semi.org

Minutes tentatively approved by:

Mark Roos (Roos Instruments) Cochair	5/2/2019
Stacy Ajouri (Texas Instruments, Cochair	5/7/2019

Table 13 Index of Available Attachments#1

<i>Title</i>	<i>Title</i>
(Attachment 01) SEMI Standards Required Meeting Elements.ppt	
(Attachment 02) SEMI Standards Staff Report ATE TC	



(April 2019).ppt	
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#1 Due to file size and delivery issues, attachments must be downloaded separately. A .zip file containing all attachments for these minutes is available at www.semi.org. For additional information or to obtain individual attachments, please contact Inna Skvortsova at the contact information above.