



SEMI® INTERNATIONAL STANDARDS

# Standards Staff Report

September 15, 2015







R0.1

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# SEMI Global 2015 Calendar of Events

Event Name		Event Details
	<b>SEMICON West</b>	<b>July 14-16</b> <b>San Francisco, California</b>
	<b>SEMICON Taiwan</b>	<b>September 2-4</b> <b>Taipei</b>
	<b>European MEMS Summit</b>	<b>September 17-18</b> <b>Milan, Italy</b>
	<b>Strategic Materials Conference (SMC)</b>	<b>September 22-23</b> <b>Mountain View, California</b>
	<b>SEMICON Europa</b> <b>Plastic Electronic Conference</b>	<b>October 6-8</b> <b>Dresden, Germany</b>
	<b>SEMICON Japan</b>	<b>December 16-18</b> <b>Tokyo</b>

# SEMI Global 2016 Calendar of Events

Event Name		Event Details
 European 3D Summit 2016 18–20 January 2016 • Grenoble, France	<b>European 3D Summit</b>	<b>Jan 18-20, 2016</b> <b>Grenoble, France</b>
	<b>Advanced Semiconductor Manufacturing Conference (ASMC)</b>	<b>May 16-19, 2016</b> <b>Saratoga Spring, NY</b>
	<b>SEMICON West</b>	<b>July 12-14, 2016 (tentative)</b> <b>San Francisco, California</b>



# Global Standards Meeting Schedule

<http://www.semi.org/en/node/9051>

As of September 15, 2015  
Please make sure most updated  
information in the above URL

- Sep. 16, 2015  
I&C Japan TC Chapter Meeting  
Tokyo, Japan
- Sep 18, 2015  
HB-LED China TC Chapter Meeting  
Anhui, China
- Sep. 18, 2015  
Silicon Wafer Japan TC Chapter Meeting  
Tokyo, Japan
- Sep 18, 2015  
Gases / Facilities Japan TC Chapter Joint Meeting  
Tokyo, Japan
- Sept. 18, 2015  
I&C Korea TC Chapter Meeting  
Soule, Korea
- Sep. 24, 2015  
EHS Japan TC Chapter Meeting  
Tokyo, Japan
- Sep. 30, 2015  
Automation Technology Japan TC Chapter Meeting  
Tokyo, Japan
- Sep 30, 2015  
Physical Interfaces & Carriers Japan TC Chapter Meeting  
Tokyo, Japan
- Oct 5-7, 2015  
SEMICON Europa Standards Meetings  
Dresden, Germany
- Oct. 15, 2015  
Mircorpatterning Japan TC Chapter Meeting  
Tokyo, Japan
- Oct. 16, 2015  
Assembly & Packaging Japan TC Chapter Meeting  
Tokyo, Japan
- Oct. 16, 2015  
3DS-IC Japan TC Chapter Meeting  
Tokyo, Japan
- Oct. 16, 2015  
I&C Korea TC Chapter Meeting  
KSIA, Korea
- Oct. TBD, 2015  
EHS Taiwan TC Chapter Meeting  
Hsinchu Science Park Admin Building, Taiwan
- Nov. 1-5, 2015  
North America Standards Fall 2015 Meetings  
San Jose, CA
- Dec. 15-18, 2015  
SEMICON Japan Standards Meetings  
Tokyo, Japan

# SEMICON Europa 2015

## Messe Dresden 6 - 8 October, 2015.

Monday, 5 October

13:00 - 15:00 PV Materials Degradation (TF)

Tuesday, 6 October

10:00 - 13:00 Automation Technology (TC)

10:00 - 11:00 International Test Methods (TF)

11:00 - 12:00 Int'l Polished Wafer (TF)

12:00 - 13:00 Silicon Wafer GCS - (By Invitation Only)

14:00 - 17:00 Gases and Liquid Chemicals (TF)

14:00 - 15:00 Int'l Advanced Surface Inspection (TF)

15:00 - 16:00 Int'l Advanced Wafer Geometry (TF)

Wednesday, 7 October

10:00 - 13:00 Gases and Liquid Chemicals (TC)

10:00 - 13:00 Compound Semiconductor Materials (TF & TC)

14:00 - 16:00 Silicon Wafer (TC)

14:00 - 15:30 Metrics/PIC/IC (TC + TF)

16:30 - 18:00 ERSC - European Regional Standards Committee Meeting - (By Invitation Only)

<http://www.semiconueuropa.org/ProgramsandEvents/Standards>

# NA Fall Standards Meetings

- November 1 - November 5 in San Jose, California.
- Meeting Schedule
  - Check the following URL

<http://www.semi.org/en/node/57096>



NA Fall 2015



## 開催概要

日時： 2015年12月16日（水）～ 18日（金）

会場： 東京ビッグサイト 東展示棟、会議棟

規模： 700社 1,700小間

延べ来場者： 65,000名

\*延べ来場者数は、日毎の入場登録者と出展者を含む延べ人数です。

## テーマ



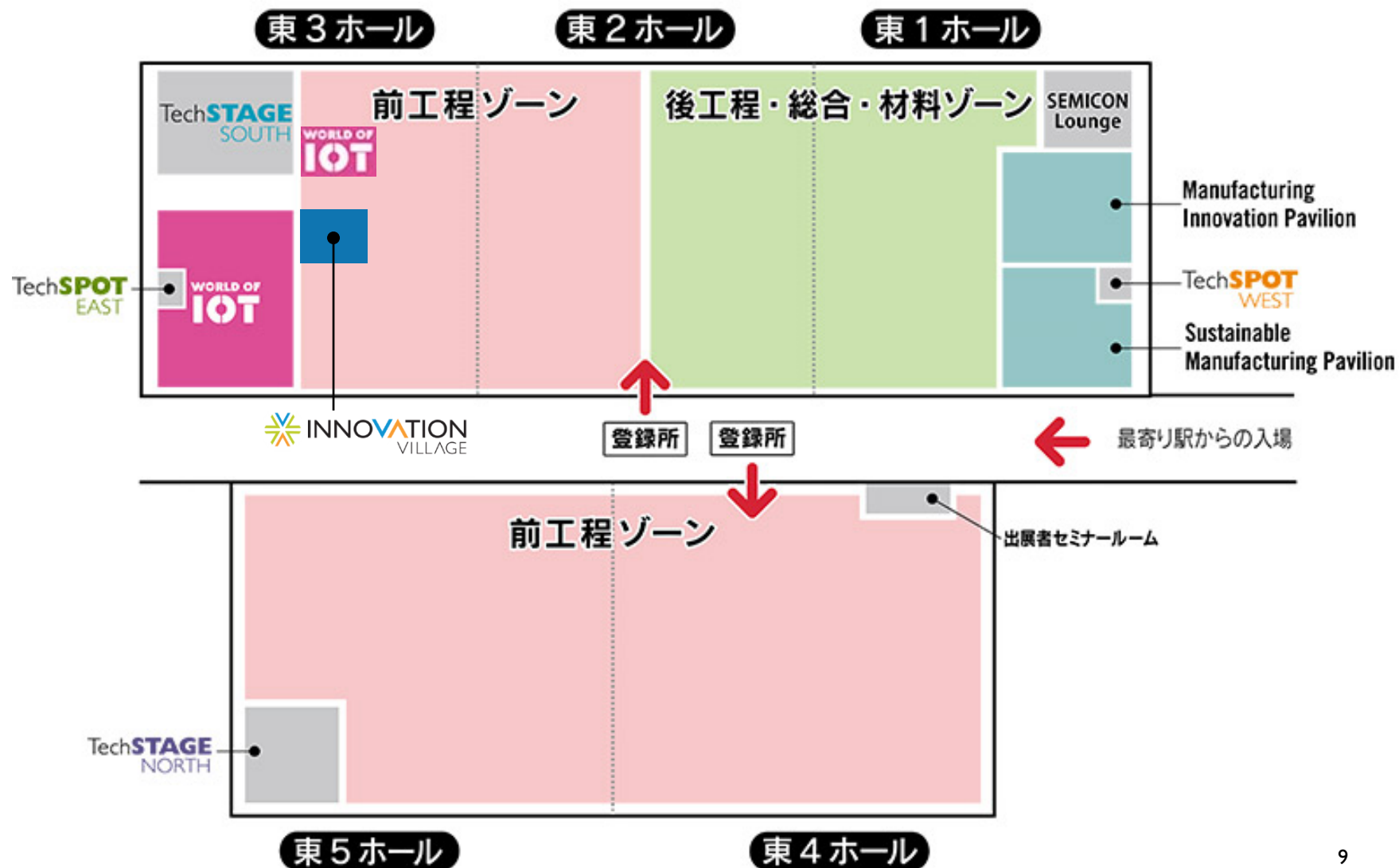
without limits

限界を突き破れ。

テクノロジーが導くわたしたちの未来、  
あるいは、わたしたちが導くテクノロジーの未来に、  
限界はありません。



# レイアウトプラン



世界のエグゼクティブが登壇する基調講演級の無料プログラム

12月16日	12月17日	12月18日
オープニング キーノート	米国大使館協賛 ITフォーラム	リソグラフィー ビジネス フォーラム
半導体 エグゼクティブ フォーラム	Digital Society フォーラム	製造イノベーション フォーラム
SEMIマーケット フォーラム	Smart Life & Smart Car フォーラム	GSA協賛 グランドフィナーレ パネル

# オープニングキーノート

- IoTがもたらす未来 -



富士通（株） 代表取締役会長  
山本 正已



日本タタ・コンサルタンシー・サービス（株）  
代表取締役社長 アムル ラクシュミナラヤナン



楽天（株）  
執行役員 兼 楽天技術研究所長 森 正弥



# 半導体エグゼクティブフォーラム

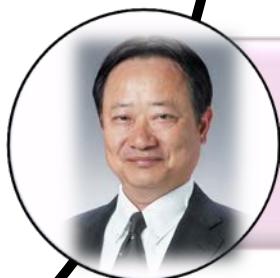
- 限界を突き破れ -



Micron Technology, Inc., President,  
Mark Adams



ルネサスエレクトロニクス（株）  
執行役員 兼 CTO 日高 秀人



ソニー（株）業務執行役員 SVP デバイス  
ソリューション事業本部副本部長 清水 照士

# 技術セミナー:100時間を上回る情報発信

展示会場から最先端技術情報を発信。全セッション無料

12月16日		12月17日		12月18日	
Tech <b>STAGE</b> SOUTH	Tech <b>STAGE</b> NORTH	Tech <b>STAGE</b> SOUTH	Tech <b>STAGE</b> NORTH	Tech <b>STAGE</b> SOUTH	Tech <b>STAGE</b> NORTH
パワー デバイス (1)	MEMS・ センサ(1)	先端 リソグラ フィー (1)	半導体 中古	IoT 未来	先端 デバイス (1)
パワー デバイス (2)	MEMS・ センサ(2)	先端 リソグラ フィー (2)	若手エン ジニア	TSV/2.5D /3D	先端 デバイス (2)
IoT/IV ジョイント 企画	テスト	特別	DFM	パッ ケー ジング	学生 企画

# SEMICON Japan期間中 スタンダード関連スケジュール

Dec. 15 (Tue.) ----@SEMI Japan Office  
11:30-13:00 Gases/Facilities (Joint)  
14:30-19:00 JRSC

Dec. 16 (Wed.)  
14:00-17:00 PI&C

Dec. 17 (Thu.)  
08:30-12:30 Silicon Wafer  
08:30-12:30 Packaging/3DS-IC (Joint)  
13:30-16:30 ISC  
17:00-18:30 Standards Reception (Friendship Party)

Dec. 18 (Fri.)  
10:00-12:00 TR  
10:00-17:00 I&C  
TBD EHS



2015 STD  
東割当 2015.08.17

Check the meeting schedule plan  
in the separate file and confirm  
your TC Chapter and task force  
meetings



# JRSC Highlight

- 3DS-IC Japan TC Chapter
  - approved by JRSC on Aug. 31
  - Held Kick-off Meeting and workshop on Sep. 7
  - Workshop, drew more than 60 attendees
- Planning Meeting on August 31
  - Industries 4.0
    - Mr. Kawano/ Beckhoff Japan
    - Mr. Ogi /Mitsubishi UFJ Research and Consulting
    - Ms. Mashiro/ Tokyo Electron

## 2015 Critical Dates for SEMI Standards Ballots

	Ballot Submission Due Date	Voting Period Starts	Voting Period Ends
Cycle 6	July 22	July 29	August 28
Cycle 7	August 17	August 31	September 30
Cycle 8	October 16	October 23	November 23
Cycle 9	November 16	December 1	December 31

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

# SEMI Standards Publications

Cycle	New	Revised	Reapproved	Withdrawn
January 2015	5	2	0	1
February 2015	3	7	3	0
March 2015	1	5	2	0
April 2015	3	2	0	0
May 2015	1	5	1	0
June 2015	4	3	15	0
July 2015	4	0	0	0
Aug 2015	3	9	8	0

- Total SEMI Standards in portfolio: **944**
  - Includes **113** Inactive Standards



# SEMI Standards Publications

## New Standards

Cycle	Designation	Title	Committee	Region
March 2015	SEMI 3D12	Guide for Measuring Flatness and Shape of Low Stiffness Wafers	3D-IC	NA
April 2015	SEMI C86	Guide for Ethylene Glycol	Liquid Chemicals	NA
April 2015	SEMI E173	Specification for XML SECS-II Message Notation (SMN)	Information & Control	NA
April 2015	SEMI PV55	Data Definition Specification for a Horizontal Communication Between Equipment for Photovoltaic Fabrication System	Automation Technology	EU
May 2015	SEMI C87	Test Method for Determining Roughness of Polymer Surfaces Used in Ultrapure Water and Liquid Chemical Distribution Systems by Contact Profilometry	Liquid Chemicals	NA

# SEMI Standards Publications

## New Standards Cont.

Cycle	Designation	Title	Committee	Region
June 2015	SEMI 3D14	Guide for Incoming/Outgoing Quality Control and Testing Flow for 3DS-IC Products	3D-IC	TA
June 2015	SEMI HB5	Test Method for Measurement of Saw Marks on Crystalline Sapphire Wafers by Using Optical Probes	HB-LED	NA
June 2015	SEMI HB6	Test Method for Measurement of Thickness and Shape of Crystalline Sapphire Wafers by Using Optical Probes	HB-LED	NA
June 2015	SEMI HB7	Test Method for Measurement of Waviness of Crystalline Sapphire Wafers by Using Optical Probes	HB-LED	NA

# SEMI Standards Publications

## New Standards Cont.

Cycle	Designation	Title	Committee	Region
July 2015	SEMI 3D13	Guide for Measuring Voids in Bonded Wafer Stacks	3D-IC	NA
July 2015	SEMI PV64	Test Method for Determining B, P, Fe, Al, Ca Contents in Silicon Powder for PV Applications by Inductively Coupled Plasma Optical Emission Spectrometry	PV	C
July 2015	SEMI PV65	Test Method Based on RGB for Crystalline Silicon (C-Si) Solar Cell Color	PV	C
July 2015	SEMI PV66	Test Method for Determining the Aspect Ratio of Solar Cell Metal Fingers by Confocal Laser Scanning Microscope	PV	C








# SEMI Standards Publications

## New Standards Cont.

Cycle	Designation	Title	Committee	Region
August 2015	SEMI PV67	Test Method for the Etch Rate of a Crystalline Silicon Wafer by Determining the Weight Loss	PV	C
August 2015	SEMI PV68	Test Method for the Wire Tension of Multi-Wire Saws	PV	C
August 2015	SEMI C88	Specification for Dimensions of Sandwich Components for 1.125 Inch Type Surface Mount Gas Distribution Systems	GASES	NA

<http://ams.semi.org/ebusiness/standards/StandardsPublicationsList.aspx>

# A&R Ballot Review

A&R Cycle	Result	Notes
February 2015	 A&R Feb 2015	
March 2015	 A&R Mar 2015	
May 2015	 A&R May 2015	<p>Documents failed</p> <p>5621B: (NA Liquid Chemical) due to the lack of SNARF revision and no legitimate consideration of the negatives.</p> <ul style="list-style-type: none"> <li>• Subtype changed from Test Method to Guide without SNARF revision/approval</li> <li>• Normative statements from Test Method retained</li> <li>• Negatives found not persuasive based on inappropriate application of PM 2.11.3.1.6</li> </ul> <p>5816: (NA Gases) due to not correcting the non-conforming title</p> <ul style="list-style-type: none"> <li>• It was not balloted for a title change from a non-conforming title</li> </ul>
July 2015	 A&R July 2015	
August 2015	 A&R August 2015	

# Committee Staff Reports – new content

- Published Standards due for 5-year review
- 3-year SNARF project period
  - Regs § 8.3
- Nonconforming titles
  - Procedure Manual Appendix 4



# New Requirements/Process Reminders for TC Chapter Meetings [1/2]

- Standards Document Development Project Period
  - Project period shall not exceed 3 years (Regs 8.3.2)
    - SNARF approval to TC Chapter approval
  - If document development activity is found to be continuing, but cannot be completed with the project period, TC Chapter may grant 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. (PM 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. (Regs 8.2.1)
    - If the SNARF is submitted at a TC Chapter meeting, the committee can review and approve, but the SNARF will need to be distributed for two weeks and then approved via GCS.
- New SNARF & TFOF Form



Microsoft Word  
17 - 2003 Document



Microsoft Word  
17 - 2003 Document

# New Requirements/Process Reminders for TC Chapter Meetings [2/2]

- Procedures for Correcting Nonconforming Titles of Published Standards Document (PM 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.

# ⇒ 5 Year Review



5years 150918



## ⇒ Nonconforming Titles

- Refer to Procedure Manual (PM) Appendix Table A4-I for details on nonconforming titles

All documents are conformed.

## ⇒ SNARF 3 year status

- TC Chapter may grant a one-year extension

5026	2011/12/6	Revision to SEMI FI-96, Specification for Leak Integrity of High-Purity Gas Piping Systems and Components
5372	2011/12/7	Reapproval of SEMI F44-0307, Specification for Machined Stainless Steel Weld Fittings
5373	2011/12/7	Reapproval of SEMI F45-0307, Specification for Machined Stainless Steel Reducing Weld Fittings
5390	2012/3/23	Reapproval of SEMI FI06-0308, Test Method for Determination of Leak Integrity of Gas Delivery Systems by Helium Leak Detector
5490	2012/9/20	Reapproval of SEMI FI02-0306, Guide for Selecting Specifications for Dimension of Components for Surface Mount Gas Distribution Systems
5686	2013/9/27	Reapproval of SEMI F80-0309, Test Method for Determination of Gas Change/Purge Efficiency of Gas Delivery System

# Staff Contact Information from March 1, 2015

Committee	Staff
Gases, Facilities, FPD M&C, FPD Meteorology, Liquid Chemical SIG: SEA, CGMG	<i>Naoko Tejima</i> Manager, Standards & EHS <a href="mailto:ntejima@semi.org">ntejima@semi.org</a>
PI&C, I&C, Metrics, Traceability, PV, PV Materials, Packaging, 3DS-IC	<i>Chie Yanagisawa</i> Sr. Coordinator, Standards & EHS <a href="mailto:cyanagisawa@semi.org">cyanagisawa@semi.org</a>
JRSC, SPI TF, Compound, Micropatterning, Silicon Wafer, EHS, AT, Test, EHS SIG: ESG, SMG, EHS	<i>Junko Collins</i> Director, Standards & EHS <a href="mailto:jcollins@semi.org">jcollins@semi.org</a>
Others	Staff
Standards Products General Information, SEMIViews	<i>C. Yanagisawa</i>
Other Standards Operation,	<i>J. Collins</i>



# BACKUP

# New Regulations and Procedure guide

- New Regulations and Procedure Guide become effective in December
- Significant changes to SNARF approval process
- New TFOF and SNARF forms
- 3-year project period for SNARF
- Request leadership to familiarize themselves with changes

# ISC Ballot (Group I) - Standards Document Development Project Period

- Standard Document Development Project Period shall not exceed three years.
- Exception
  - If the document development activity is found to be continuing, but cannot be completed within the three-year project period, the TC Chapter may grant a one-year extension.



# ISC Ballot (Group 2) - SNARF Review Period

- TC Members have at least 2 weeks to review prior to approval.
  - 2 weeks before TC, SNARF will be reviewed by TC Members, and it will be approved by TC.
  - At TC, SNARF will be approved tentatively, and it will be approved officially by GCS after 2 weeks of review by TC members.

# ISC Ballot (Group 3) – Official Virtual TC Chapter Meetings

- Necessary changes to the Regs/PG to accommodate Official Virtual TC Chapter Meeting, in which virtual participant will have equivalent rights as in-person participant to the TC Chapter meeting.
- However, the rules for Official Virtual TC Chapter Meeting become effective only after infrastructure is in place.

# ISC Ballot (Group 4) – Minority Report Handling by GCS

- Redefine requirements for GCS voting on Minority Report to encourage consensus
  - Template for Minority Report handling process was created and will be used to guide Minority Report process



# ISC Ballot (Group 5) – Clarify Voting Interest Definition

- A parent organization and all of its affiliates worldwide constitute a single Voting Interest
  - For example, since the both Hitachi High Technologies and Hitachi Kokusai Electronics are affiliates of Hitachi, they have a single voting right.



# ISC Ballots (Group 6,7,8, 9 and 12) – Non Controversial Maintenance Type Changes

- Group 6, 7: Clarifications for Type/Subtype of Standards
- Group 8: Harmonization of TFOF/SNARF to GTC Charter/Scope
- Group 9: Clarification for Usage of Originating vs. Responsible TC Chapter
- Group 12: Miscellaneous Editorial Changes

# ISC Ballot (Group 10) - Adjudication Procedural Improvement

- Rejected by ISC ballot
- Group 10 included:
  - Tougher Letter Ballot/Ratification Ballot voting requirement for TC members
  - Introduction of new procedure (optional) to make Technical Change to address “technically persuasive Negative” and approve the passage of the Document at the TC Chapter meeting during adjudication of Document having received one or more “persuasive Negative”.
  - Introduction of Ratification Ballot to ratify the Document approved by the TC Chapter with modifications (technical and editorial)

# ISC Ballot (Group I I) – TC Chapter Formation

- Working Group, currently defined as a group to create new TC Chapter, will be renamed to TC Chapter Formation Group (CFG)
  - Other working groups are not currently defined as official bodies, but may continue to use “working group” in their names
- Formation and disbandment procedures are defined