

**APPROVED MINUTES**  
**ANSI ASC C63® SC1: Techniques and Development**  
**WebEx Meeting**  
**Friday, October 2, 2020**

**Members Present:**

Nicholas Abbondante  
Mark Arthurs  
David Chamberlain  
Zhong Chen (Chair)  
Bob DeLisi  
Mac Elliott  
Andy Griffin  
Tim Harrington  
Dan Hoolihan  
Steve Jones  
Greg Kiemel  
Jeff Klinger  
Doug Kramer  
Rick Lombardi  
Randy Long  
Nima Molaei  
Michael O'Dwyer  
Janet O'Neil (Secretary)  
David Schaefer  
Jeff Silberberg  
Dennis Ward  
David Zimmerman

**Members Absent:**

Mike Antola  
Don Heirman  
Victor Kuczynski  
Jason Nixon  
Nate Potts  
Mits Samoto  
Dan Sigouin  
Khairul A. Zainal

**Guests:**

Jens Medler  
Horia Popovici  
Mark Terrien

**Employer:**

Intertek  
Sony  
ISED Canada  
ETS-Lindgren  
Underwriters Laboratories Inc. (UL)  
TUV Sud America  
Cisco  
FCC  
Hoolihan EMC Consulting  
FCC  
Apple  
Compatible Electronics  
ETS-Lindgren  
Visteon  
ANAB  
PCTEST  
Apple  
ETS-Lindgren  
Element Materials Technology  
FDA Center for Devices & Radiological Health  
PCTEST  
Spectrum EMC, LLC

**Employer:**

UL  
Don HEIRMAN Consultants  
Vican Electronics  
ISED Canada  
Keysight  
Liberty Labs Asia  
Timco  
Laird Connectivity

**Employer:**

Rohde & Schwarz  
ISED Canada  
Keysight

## 1.0 Call to Order: Chair

Chair Zhong Chen called the meeting to order at 8:00 am PDT. A round of introductions was made.

## 2.0 Approval of the Meeting Agenda and SC1 Scope: Chair

Zhong Chen presented the draft agenda for the October 2, 2020 meeting for review. Secretary Janet O'Neil amended the agenda to add recognition of new member Nima Molaie of PCTest under item 3.2. The agenda was approved as amended. (See Attachment A for the approved agenda.) The SC1 Scope was reaffirmed as follows:

Subcommittee 1 provides the technical expertise and resources necessary for maintaining existing and newly proposed C63<sup>®</sup> approved standards documents. Subcommittee 1 addresses new or existing measurement methods, site qualification methods, calibration methods, associated instrumentation, and limits development as assigned by the Main Committee ASC C63<sup>®</sup>.

## 3.0 Presentation of [patent slides](#): Chair

Zhong Chen gave a presentation to review the status of the meeting fees, the ANSI policy related to Intellectual Property (IP), inappropriate topics for IEEE Working Group meetings and the Working Group meeting slide template. (See Attachment B.) **Mr. Chen moved to confirm everyone present agreed to abide by the procedures outlined in the patent slides. The motion was seconded. All confirmed compliance.**

## 4.0 Approval of Minutes of Previous Meeting: Secretary

Secretary Janet O'Neil presented the minutes of the June 5, 2020 meeting held via WebEx. **Jeff Silberberg moved to approve the June 5, 2020 minutes as presented. The motion was seconded and approved.** (See Attachment C.)

## 5.0 Review of [Subcommittee Membership](#): Secretary

**5.1 Review of membership – Members at risk.** Secretary Janet O'Neil advised that the affiliation of Mike Antola has changed from Residio to UL. See Attachment D for the updated SC1 Membership Roster.

The secretary reviewed the Member Attendance Log included in the agenda (see Attachment A). There are no members at risk.

### 5.2 Consideration of New Members – Working Group Rosters

The secretary advised a membership application for SC 1 was received from Nima Molaie with PCTest. The membership application and resume was circulated to all members in July 2020 for review. The motion to accept the membership application of Nima Molaie was approved by SC1. The updated Working Group Roster is included in Attachment E.

**ACTION ITEM: All Working Group Chairs need to complete their rosters and indicate their officers (Vice-Chair and Secretary) and submit to SC1 Chair prior to the next meeting.**

## 6.0 Working Group Reports

**C63.2: Field Strength Measuring Instrumentation** – At the last meeting, Mark Terrien of Keysight had provided a report that summarized activity on this document. He noted the last PINS for C63.2:2009 was opened in October 2012. At the time, C63.2 needed significant updating since it had not been updated in many years and contained references to outdated equipment types. C63.2:2016 was updated and published February 2017. This version was more aligned with CISPR 16-1-1 (through 18 GHz) and modern 40 GHz receiver information was included. At the SC1 meeting on November 20, 2019, a suggestion was made to consider an update to ANSI C63.2:2016. The main issue for the update is that C63.2:2016 refers to CISPR 16-1-1:2010, AMD 2010, 2014. CISPR 16-1-1:2019 is available.

Jens Medler of Rohde & Schwarz said he is interested in helping out with the document. He would like to align CISPR 16-1-1-2019 with C63.2 and harmonize these standards. Jens is a member of CISPR A so he is very familiar with the CISPR 16-1-1 documents. Nick Abbondante and Andy Griffin volunteered to be members of this new working group. Mark Terrien indicated he he would like to remain involved as a member of the working group. Jens agreed to chair the working group for C63.2 with the support of Mark, Nick, and Andy as members of the working group.

**ACTION: Janet O’Neil to send Jens a PINS form to get this work started.**

**ACTION: Jens Medler to create a PINS to initiate the update to C63.2:2016.**

### **C63.4: Emissions Measurements**

Working Group Chair: Don Heirman

Status: C63.4: Current-2014. New PINS approved by WG, SC1 and C63 in Nov. 2017

Andy Griffin has taken over as vice-chair of this working group replacing Harry Hodes. He reported on the status of this activity in the absence of Don Heirman. (See Attachment F.) As a reminder on the recent history of this document, Andy noted that the vote on sending the latest edition of C63.4 to the parent committee for balloting closed on Feb. 21, 2020 and passed (the votes were 14 yes, 10 no, and three abstain). Eight members submitted 122 comments. A sizable portion of these were repeated comments, i.e. they were submitted at previous stages; the resolution to these are the same as before since these were already discussed at length and decided upon in the working group. On the proposed resolutions to these comments, three were noted, 63 were not accepted, 32 were accepted, and 24 were partially accepted. The draft C63.4 document was updated per the accepted and partially accepted comments.

Andy noted that the copyright letter has been addressed as all the necessary copyright releases have been received.

As requested by Dan Hoolihan, the working group has done further work on the document in an attempt to accommodate the opinions of the SC1 members. However, one difficult point is the 2 dB rule, where consensus amongst the working group members can not be reached. In the end, if consensus cannot be reached, the working group will be forced to revert to the current text, or provide similar text.

The working group is considering retaining the three existing options in the document:

1. Delta test
  - Investigation of measurements and analysis (possibly include an informative annex on some of the available methods)
  - Atypical EUT setup
2. Include the current text as is, i.e. include Annex K and Annex L.
3. Same as option 2, but streamlined with a minimum set of shall requirements in Annex K.

There will be a meeting next week of the working group to address the problems with reaching the committee consensus. Nick Abbondante mentioned the working group should clarify the date of 2003 or 2014 when mentioning “going back” to the original approved standard since the FCC accepts both editions. Steve Jones suggested further review of NSA in the document. Horia Popovici did not like the idea of looking at the topic Steve mentioned in C63.4 as this is addressed in the amendment, C63.4a. Tim Harrington suggested NSA be removed from the new edition of C63.4 and referenced in C63.25. Dan Hoolihan recommended publishing C63.25.2 first and then publishing the new edition of C63.4.

Andy thanked the SC1 members for their comments. After the working group meeting next week and the document has been developed further, he intends to take another vote in the working group to approve passing it along to SC 1 for review.

**ACTION: Andy Griffin to send the working group approved draft of C63.4 to the SC1 committee.**

#### **C63.5: Antenna Calibration**

Working Group Chair: Doug Kramer

Status: Current-2017

Doug Kramer presented his report. (See Attachment G.) Doug provided the current list of Working Group members and summarized their activity. He noted there has been no major activity since the last SC1 meeting in June; however, many good comments have been received from the new working group member based in China. Note the frequency range was removed from the title of the document at the last SC1 meeting since the limit of 40 GHz is no longer realistic. Currently the comments on the document are just editorial at this point. He expects to send this to SC1 for review shortly.

Nick Abbondante will distribute the latest version of CISPR-16-1-6-2020 to the working group. The RVC was just approved and will be published as a new standard in a few months. Andy Griffin requested that Nick send the CDV to all working group members. Doug will then task the working group to harmonize the C63 document with the IEC document. Doug will post the document to iMeet so the working group can review this.

**ACTION: Doug Kramer to send latest draft of C63.5 to SC1 for review by November 10.**

**ACTION: Nick Abbondante to send the CDV of CISPR-16-1-6-2020 to all working group members; Doug Kramer to post it to iMeet.**

#### **C63.7: Construction of Test Sites**

Status: Published update on March 9, 2015; working group disbanded

Zhong Chen commented that this document is a guide and very helpful. Dan Hoolihan recommended SC1 reaffirm this document since it was published in 2015.

**ACTION: SC1 to reaffirm C63.7**

**C63.22-2004: Guide for Automated EMI Measurements**

Status: Published in 2004

Zhong advised that this standard is active, but it has not been revised or reaffirmed since 2004. The listing is shown here from the IEEE SA website: [https://standards.ieee.org/standard/C63\\_22-2004.html](https://standards.ieee.org/standard/C63_22-2004.html). The standard should be reviewed or withdrawn as it is now over 15 years since original publication. Jennifer Santulli with IEEE confirmed the document was set to expire in 2020. Dan Hoolihan advised that was fine and to let the document expire as scheduled.

**C63.23-2012: Guide for Computations and Treatment of Measurement Uncertainty**

Working Group Chair: TBD

Jennifer Santulli advised shortly after the last SC1 meeting on June 5 that the BSR9 for C63.23 would be approved soon. It has since been approved; IEEE will have this document posted to Xplore in early October 2020.

**C63.25: Time Domain Applications for Test Site Validation**

Working Group Chair: Dan Sigouin

Status: New Standard. Draft being written. PINS approved by SC1 on October 27, 2014

This work addresses the family of C63.25 standards:

- C63.25.1 (1 GHz to 18 GHz) TDR – Published Dec 2018. Future plan to address above 18 GHz.
- C63.25.2 (30 MHz to 1000 MHz) NSA - Work began in January 2019.

Tim Harrington reported on C63.25.2 activity in the absence of Dan Sigouin. He reviewed the status of editing C63.25.2. Comments from the working group are due back to the chair on October 6. Greg Kiemel noted he withdrew from this working group. Zhong Chen said he would be happy to take over the vice-chair position from Greg Kiemel. Zhong asked if the C63.4a issues are being addressed in C63.25.

Zhong noted the C63.25.3 above 18 GHz study item needs to be addressed. He asked if anyone was interested in leading the effort to move this document forward. Nick Abbondante noted this is being addressed in C63.10 and C63.26 in looking at mmWave measurements. Bill Paxman is the chair of this working group addressing these measurements. There is no sense in duplicating efforts between C63.25 and C63.10/.26. The working group is also speaking with 3GPP.

**ACTION ITEM – Nick Abbondante to connect the C63.26 and C63.10 working group with the C63.25 working group so they can coordinate efforts.**

**7.0 Old Business – Chair**

There are no old business to discuss.

**8.0 New Business – Chair**

**8.2 Coordination with SC3 for Harmonization**

In the absence of the SC3 Chair, Don Heirman, Zhong Chen reminded SC1 that before any Working Group draft may be submitted to SC1 for approval, the document must be provided to the SC3 Chair for evaluation and coordination of any harmonization effort. See the table below for the activity status updated during the meeting

**Reviewer Actions**

RA #	Task	Responsible party	Due Date	Status
RA-1	Compare C63.2 to CISPR 16-1-1	Harry Hodes	2/1/20	Closed
RA-2	Compare C63.4 to CISPR 16-2-X	Horia Popovici	2/1/20	Closed
RA-3	Compare C63.4 to CISPR 16-1-4	Horia Popovici	2/1/20	Closed
RA-5	Compare C63.5 to CISPR 16-1-6	Nate Potts	2/1/20	Open
RA-6	Compare C63.5 to SAE ARP 958 Rev D	Doug Kramer	5/1/19	Closed
RA-7	Compare C63.5 to CISPR 16-1-4	Doug Kramer	5/1/19	Closed
RA-14	Compare C63.23 to CISPR 16-4-2	Bob DeLisi	5/1/19	Closed
RA-17	Compare C63.25 to CISPR 16-1-4 (two freq. ranges under C63.25.1 and C63.25.2)	Dan Sigouin	5/1/19	Open

**ACTION ITEM: SC1 Members to contact Doug Kramer if they have comments on the CISPR document comparisons to the ANSI C63 equivalent standards.**

**9.0 Review of Interpretation Requests:** Zhong Chen reviewed the following open and new interpretation requests received since the last meeting on June 5, 2020.

- a) **C63.4 (2014) “D3 NSA Vertical 3 Meters”** from Charles Wang, request dated 8-29-17. Subgroup members include Heirman (Chair) and Khairul Zainal. At the June 5, 2020 meetings, Dan Hoolihan advised that given the submittal date of this interpretation request and lack of activity, it would be addressed in the next edition of C63.4. This interpretation request is closed.
- b) **C63.5 (2017) Annex J.2.1.2(d) “Ground Plane Size”** from Carlos Juarez, request dated June 9, 2020. Task Group members included D. Kramer (Chair), B. DeLisi, N. Potts, V. Kuczynski, D. Knight. Response approved by SC 1 for sending to parent committee on Sept 7, 2020.
- c) **C63.4 (2014) Clause 8.2.3 “Measurement Antenna Distance”** from Bill Stumpf, request dated Sept 9, 2020. Task Group members include H. Popovici (Chair), G. Pettit, D. Zimmerman, B. DeLisi, N. Abbondante. Status – response in process.

[Click here for more information about interpretation request procedures](#) (see pages 12-14).

Dan Hoolihan reminded the committee that responses to interpretation requests are informative, NOT normative, in nature.

**10.0 [C63.org](#) Website Use and Updates**

Zhong requested on behalf of Jerry Ramie that SC1 members be specific with any requests for postings to the website. Zhong asked SC1 members to be sure to update or confirm with Jerry directly that they are correctly listed on the website.

### **11.0 Review of the Action Items from Previous Meetings: Secretary**

Secretary O'Neil advised that an updated action item list would be distributed to the SC1 members along with the draft minutes from this meeting.

**ACTION ITEM: O'Neil to distribute the updated consolidated action items and draft minutes from the October 2, 2020 meeting to the committee.**

### **12.0 Time and Place of Next Meeting: Chair**

Zhong Chen advised that SC1 would meet via WebEx on Friday morning, December 11, from 8:00 am – 10:00 am PST.

### **13.0 Closing Remarks and Adjournment: Chair**

With no further business, Zhong Chen adjourned the meeting at 10:00 am PDT. He thanked everyone for attending the meeting.

Minutes submitted by:



Janet O'Neil  
Secretary, SC1

### ATTACHMENTS

- Attachment A: Approved Agenda for October 2, 2020 SC1 Meeting
- Attachment B: Patent Slides Required Meeting Template Slides for ASC C63<sup>®</sup>, IP Info
- Attachment C: Approved Minutes from November 20, 2019 SC1 Meeting
- Attachment D: SC1 Membership Roster
- Attachment E: SC1 Working Group Roster
- Attachment F: Griffin Report on C63.4
- Attachment G: Kramer Report on C63.5