



American National Standards Committee C63[®] on Electromagnetic Compatibility

Nov 10, 2022 – 8:00 AM to 5:00 PM-PST
Keysight Technologies, Santa Rosa, CA

Chair: [Dan Hoolihan](#)

Vice-Chair: [Dan Sigouin](#)

Secretary: [Jerry Ramie](#)

Approved Minutes

1. **Call to Order - Chair** - The meeting was called to order at 8:30AM-PST.

1.1. **Introductions (roll call) - Secretary** (Revised: 10/6/2022) ([Absent](#))

MEMBER	PRIMARY	ALTERNATE
A2LA (American Assoc. for Laboratory Accreditation)	McConnell, Megan	Miller, Rob
ACIL (American Council of Independent Laboratories)	Cardenas, Javier	Reitz, Richard
ANAB (ANSI National Accreditation Board)	Long, Randy	Quan, Ross
Apple, Inc.	Kiemel, Greg	Kanter, Jon
ARRL – The National Assoc. for Amateur Radio	Hare, Ed	Carlson, Kermit
CISCO Systems	Griffin, Andy	Castro, Louie
Element Materials Technology	Schaefer, David	House, Jody
Element Materials Technology Washington DC LLC	Snyder, Greg	Molaei, Nima
Elite Electronic Engineering Inc.	Fanning, Craig	Cardenas, Javier
Ericsson AB	Skoglund, Kenth	Bria, Aurelian
ETS – Lindgren	Chen, Zhong	Vacant
Federal Communications Commission	Jones, Steve	Vacant
Food and Drug Administration	Silberberg, Jeffrey L	Vacant
Google, LLC	Wong, Warwick	He, George
Hearing Industries Association	Becker, John	Gjerde, Ken
IEEE – EMC Society	Norgard, John	Benitez, Henry
Information Technology Industry Council	Hirvela, John	Barrett, Stephanie
Innovation, Science & Economic Development Canada	Nixon, Jason	Popovici, Horia
Intertek	Abbondante, Nick	Vacant
Keysight Technologies	Potts, Nate	Vacant
Motorola Solutions, Inc.	Zakharia, Deanna	Ho, Sze Khian
National Institute of Standards & Technology	Coder, Jason	Vacant
Qualcomm Technologies, Inc.	Forrester, John	White, Andy
Rohde & Schwarz	Cline, Jeremy	Arceneaux, Wally
TCB Council, Inc.	Harvey, Chris	Vacant
TIMCO Engineering Inc.	Royer, Tim	Clavier, Bruno

TÜV Rheinland of North America	Graff, William	Fagley, Bruce
TÜV SÜD America, Inc.	Elliott, William (Mac)	Vacant
UL LLC	DeLisi, Bob	Michael Antola
US Department of Defense - Joint Spectrum Ctr.	Shellman, Marcus	Duncanson, Michael
Individual Members:		
INDIVIDUAL Member	Hoolihan, Daniel	None
INDIVIDUAL Member	Lichtig, John	None
INDIVIDUAL Member	Schaefer, Werner	None
INDIVIDUAL Member	Zimmerman, Dave	None
INDIVIDUAL Member	Berger, Stephen	None
INDIVIDUAL Member	Case, Dave	None
INDIVIDUAL Member	Hodes, Harry	None

Observers: Jerry Ramie,

Quorum: 30 organizations + 7 individual members = 37 total. A quorum is 50% (rounding up); which is **19** or more members in attendance. Quorum was **not achieved** with **18** members attending the meeting. Harry suggested that we return to hybrid Main Committee meetings to reduce costs and achieve quorum. The Chair thanked Harry for the suggestion and noted that we have an election for Chair later today.

2. Approval of the Agenda

2.1 Approval of [agenda](#) - Chair - Hare moved, seconded by Coder, to accept the Agenda as shown. The agenda was approved.

2.2 Presentation of [Patent](#) slides – Chair - The patent slides were shown and no patent issues were raised.

2.3 Consideration of new members - Chair – none [Application for C63® Membership](#)

3. [Chairman's Report](#) – Hoolihan

3.1 - General – See PowerPoint slides

4. Vice-Chairman's Report - Sigouin - Estimated completion date of new procedures is January - 2023

5. Secretary's Report – Ramie

5.1 Minutes of the last Meeting ([20190519 Main Mins 2.doc](#)) – Ramie - Hare moved, seconded, to approve the previous Minutes. The minutes were [approved](#) by acclamation.

5.2 Disposition of Interpretation Requests since last meeting – Ramie - All the items listed below are posted. The two items with ***** in the last column used the 2/5/2021 David Waitt interpretation and were posted the same day (4/22/2021) as the Waitt interpretation.

Date	Requestor	e-mail address	Project name	SC #	Rec by Sec	Sent to SC	Back fm SC
6/9/2020	Carlos Juarez	carlos@com-power.com	C63.5 (2017) Annex J.2.1.2(d) ground plane size	SC1	6/9/2020	6/11/2020	9/7/2020
9/9/2020	Bill Stumpf	bstumpf@dlsemc.com	C63.4 (2014) Clause 8.2.3 measurmnt ant. distance	SC1	9/9/2020	9/10/2020	12/2/2020
						12/4/2020	12/21/2020
2/5/2021	David Waitt	david@waitt.us	C63.4 (2014) Annex N.1 Cl. B.4 Antenna Calibration	SC1	2/5/2021	2/8/2021	3/5/2021
2/26/2021	Steve Behm	Steve.Behm@ckc.com	C63.4 (2014) Clause 4.5.1 Accredited antenna calib	SC1	2/26/2021	3/1/2021	N/A
2/26/2021	Steve Behm	Steve.Behm@ckc.com	C63.10 (2013) Clause 4.3.1 Accredited antenna calib	SC4	2/26/2021	3/1/2021	N/A
6/18/2021	James Wooten	jwooten@tdkrf.com	C63.5 (2017) Annex I.2 Biconical horizontal calib.	SC1	6/18/2021	6/21/2021	8/27/2021
7/26/2021	David Waitt	david@waitt.us	C63.4 (2014) Clause 8.3.2.2 Measurement Distance	SC1	7/26/2021	7/27/2021	2/16/2022
8/8/2021	Grace Lin	grace.lin@intertek.com	C63.10 (2013) Clause 6.9.2 & 6.9.3 re/ RBW	SC4	8/9/2021	8/9/2021	11/10/2021
							11/12/2021

5.3 Open Interpretation requests - Ramie ([Interpretations Log 20220405](#)) Open item is in red:

Date	Requestor	e-mail address	Project name	SC #	Rc'vd by	Sent to SC	Back fm SC
12/21/2021	Jeong Hwan Kim	jeonghwankim54@gmail.com	C63.5 (2017) Clause M.4 Uncertainty contributors	SC1	12/21/2021	12/26/2021	open

5.4 Electronic Motions since last meeting - Ramie ([electronic motions log](#))

Date	Main Committee motion or action	Source	Result	Comments
6/7/2022	Circulated new Transition Text to Main Comm. For discussion	D. Hoolihan	Ended 6/28	Voting began 6/29
6/16/2022	Voting began on C63.10 Amendment PINS @ Main Committee	D. Hoolihan	Passed 7/7	Yes=25; No=0; Abstain=2
6/29/2022	Voting on new Transition Text @ Main Committee for 3 weeks	D. Hoolihan	Passed 7/20	Yes=25; No=0; Abstain=3

5.5 Membership Changes since last meeting - Ramie

Date	Membership changes	Source	Result	Comments
5/23/2022	All SC rosters updated with changes from Main Comm. Reports	SC Chairs	Updated 5/23	All Subcommittee rosters
5/27/2022	Added J. House and G. Kiemel to C63.31 roster	G. Kiemel	Added 5/27	to C63.31 roster only
5/27/2022	Added J. House to C63.26 roster	J. House	Added 5/27	to C63.26 roster only
5/27/2022	Added H. Hodes to Main, SC1, SC2, SC3, SC4, SC6	J. Ramie	Added 5/27	to Main roster & vmc63 email list
6/1/2022	Added T. Royer to Main Committee as TIMCO-Primary	D. Sigouin	Added 6/1	to Main, vmc63, pub & priv rosters
6/13/2022	Added N. Lim & H. Mellberg to C63.4 WG roster	J. Ramie	Added 6/13	to C63.4 roster only
6/16/2022	Removed Alex Yuffa from Massive MIMO roster	A. Yuffa	Removed 6/16	from Massive MIMO roster only
6/20/2022	Added Z. Chen to C63.25.3 roster	D. Hoolihan	Added 6/20	to C63.25.3 roster only
6/28/2022	Removed Noel Lim from C63.4 roster	A. Griffin	Removed 6/28	from C63.4 roster only
6/30/2022	Changed UL to UL Solutions (Antola, DeLisi, Briggs, Heckrotte)	B. DeLisi	Changed 7/1	on Main, Pub, Priv, SC1 thru SC8
7/8/2022	Removed R. Lombardi from C63.16 roster	R. Lombardi	Removed 7/11	from C63.16 roster only
8/5/2022	Voted on adding M. Parry (Wilson Elect.) to the C63.26 roster	M. Parry	Added 9/9	to C63.26 roster only
8/25/2022	Removed D. Mansergh from SC4 and C63.26 rosters	D. Mansergh	Removed 8/25	from SC4 & C63.26 rosters only
8/25/2022	Added S. Frierson (SGS) to C63.31 roster	B. DeLisi	Added 9/12	to C63.31 roster only
9/9/2022	Removed D. Ward from all rosters	D. Ward	Removed 9/12	from SC1, C63.26 & SC4 rosters
9/15/2022	Changed M. Duncanson email address	Duncanson	Changed 9/15	on vmc63 & Private Roster only
9/16/2022	Added T. Royer to SC4 and C63.26 roster	J. Ramie	Added 9/16	to SC4 and C63.26 rosters only
10/6/2022	Changed UL Solutions to UL LLC (Antola, DeLisi)	B. DeLisi	Changed 10/6	on Main, Pub, Priv, SC1 thru SC8
10/6/2022	UL Solutions to UL Verification Services Inc. (Briggs & Heckrotte)	B. DeLisi	Changed 10/6	on Main, Pub, Priv, SC1 thru SC8
10/6/2022	Removed D. Kramer from all rosters (left ETS Lindgren)	D. Kramer	Removed 10/6	Main, Pub, Priv, SC6, 5, 4, 3 & 1
10/11/2022	Changed D. Schaefer to Member, S. Berger to Chair of C63.33	S. Berger	Changed 10/17	on C63.31 roster & Status Matrix
10/17/2022	Added T. Royer to SC1, C63.4, C63.25.2 & C63.25.3 rosters	J. O'Neil	Added 10/18	SC1, C63.4, C63.25.2 & C63.25.3
10/28/2022	Restored D. Kramer to former rosters (joined Apple)	D. Kramer	Restored 10/28	SC1, SC3, SC4 & SC6 rosters
11/1/2022	Changed C63.14 Chair to M. Duncanson	Duncanson	Changed 11/1	on Status of Stds. Matrix only

6. [Secretariat Report](#) – IEEE –

6.1 - Status of C63[®] published standards

6.1.1 Fourth Anniversary standards

6.1.2 Eight-years or older standards

6.2 – Status of PINS and PINS-C ([currently posted list](#)) (see [AI-83](#).)

7. Subcommittee reports (Brief written reports to include actions needed by C63[®], and items of particular interest during SC meetings). **Note:** A short report from each Subcommittee using either the [C63 PowerPoint template](#) or the [C63 PowerPoint template wide](#). (no password required)

NOTE – EACH COMMITTEE REPORT WILL BE LIMITED TO A MAXIMUM OF 15 MINUTES.

- 7.1. **SC1: Measurement and Instrumentation - Chen** [AI-88](#): Harry to contact NASA components to see if there is interest in developing a design guide for anechoic chambers suitable for use in testing commercial payloads and spacecraft radars and communications equipment.
- 7.2. **SC2: Definitions – Shellman** - no report
- 7.3. **SC3: International Standardization – Carlton** - Bob DeLisi showed the SC3 proposed new Scope, which was shown. The ASC will be changed to ANSC. Discussion ensued. Harry Hodes moved to approve the "new" Scope, seconded by Ed Hare. No opposition, no abstentions. The motion carried to implement the amended Scope on the SC3 landing page.

- 7.4. **SC4: Wireless and ISM Equipment Measurements - DeLisi -**
- 7.5. **SC5: Immunity testing – Hare -** Mr. Hare gave a verbal report of no changes in Scope or Membership. We are looking for a Vice Chair and additional members interested in immunity testing Standards. We will have a January webinar on C63.9, possible inclusion of C63.16 if it's ready. **AI-89:** Jerry to add Harry as an observer to the SC5 webinar invitation list.
- 7.6. **SC6: Laboratory Accreditation – McConnell -** No scope changes, no duty changes, no membership changes. No working group report on their only Standard; C63.34. Harry offered a verbal report on Proficiency Testing, noting that the 8th PT round was completed for release to the accreditation bodies. A third of the labs are proficient, a third are challenged and a third are very poor. (they blew up the artifact)
- 7.7. **SC7: Wireless Coexistence – Coder -** Mr. Coder moved to accept the reelection of the Chair and the Vice Chair, no objections, the Chair and Vice Chair of SC7 were confirmed.
- 7.8. **SC8: Medical Equipment Testing – Berger**

8. New Business

- 8.1. **Election of officers -** A motion was made (at the last meeting) to suspend the rules so that current officers can remain in position until the next Main meeting. No objections, the motion had passed unanimously. This meeting is that "next" meeting.

After lunch, the Chair addressed the election using Webex, as we needed one more Member for a quorum. The additional members were David Schaefer, Deanna Zakharia, John Lichtig, Randy Long, Stephen Berger. We have now **achieved quorum**. Harry nominated Bob DeLisi, seconded by Ed Hare. No further nominations were forthcoming. Bob left the room during our discussion. Ed noted "he's ready." Harry said "he'll make a great Chair." Randy noted that "Bob is a good candidate, level headed, reasonable." Deanna agreed that Bob was "very personable, intelligent." The question was called. No opposition, no abstentions. **Bob was elected as the new Chair, beginning 1/1/23.** (3 yrs)

Dan Sigouin agreed to stay on as Vice Chair for a year, if needed. Jennifer stated that a time limit forces action, whereas an open term eliminates the need for any further action. We can suspend the rules and extend his term, or we can just leave the Vice Chair position vacant. The consensus was to leave the Vice Chair position open for now. We have made four motions today before the additional members arrived. Randy Long, Steve Berger, David Schaefer and Deanna all agreed. Ed moved, seconded by Harry to accept the four motions from earlier this morning. No opposition, no abstentions. All previous Motions are accepted.

Harry moved to leave the Vice Chair position open until a Chair finds a candidate. Seconded by Deanna. No discussion, no opposition. The motion carried. The Vice Chair position will remain open for now. Mr. Hoolihan suggested we stay with two 3-year terms maximum. There was no opposition to this suggestion.

8.2.

9. Other Administrative Matters

9.1. Web Page – Ramie

9.1.1 The Generic Agendas for Subcommittees include a review of the Membership roster, a Quorum check, review of Membership Guidelines, Attendance Log and Members at Risk at each meeting. Spring meeting requires approval of the SC Membership. At each Spring meeting, a review is conducted for all PINS content, the Status Matrix text and the "Learn more" text for each Standard covered by that SC. **AI-90:** Jerry to place shared meeting calendar link on the Home Page near the Upcoming Meeting Schedule link. Change name of Upcoming Meeting Schedule to Bi-annual Meeting Schedule. **AI-91:** Jerry & Megan to modify the generic agendas to show "newsletter editor" instead of Dave Zimmerman, with a

link to the Officers page.

9.2. Administrative matters from the Steering Committee - none

10. Other Business

10.1 Future Seminars and Workshops – There may a webinar in the spring with M. Heckrotte on C63.26. Grand Rapids symposium to host a webinar on C63.4 and C63.25.x series.

10.2 Newsletter report – Chair – latest Newsletter was August of 2022. Available [here](#).

10.3 Next meeting – Chair - we're meeting **May 9-12 at A2LA headquarters**.

11. Old Business

11.1 Action item review on items not covered elsewhere on Agenda – (as time permits) - **Secretary**

Consolidated Action Items from Main Committee Meeting 5/19/22¹

Action Item #	Subject	Responsible Person	Status	Delivery Date	Comments
AI-73:	Mr. Hare will solicit volunteers to become the new SC5 Chair and Mr. Ramie will hold an electronic vote within SC5 to choose the next Chair of SC5	Ed Hare Jerry Ramie	Closed	Next meeting	
AI-75:	Mr. Long to provide the changes required in the SC6 roster for posting by Mr. Ramie	Randy Long Jerry Ramie	Closed	Next meeting	Posted updated roster 5/23
AI-82:	Jerry to add Harry Hodes to Main Committee roster.	Jerry Ramie	Closed	Next meeting	Added to Main roster & vmc63 list 5/27
AI-83:	Jennifer to review current PINS form to see if all required questions are included; Jerry to post new PINS form. New blank PINS form for posting	Jennifer Santulli Jerry Ramie	Closed	Next meeting	Sent to Shannon for posting on 5/27
AI-84:	Harry to write a PINS-C for incorporating EMC procurement guidance for Government purchases of COTS equipment PINS-C form	Harry Hodes	Open	Next meeting	Working with Marshall and Goddard re/ requirements
AI-85:	Investigate recognition of a corrigendum by the FCC & ISED	Steve Jones Jason Nixon	Open	Next meeting	Reminder sent 5/27 All Stds. are voluntary so recognition is also voluntary. Corr. is a stand-alone document(s) and must be recognized together with the base document.
AI-86:	Jason Coder to supply C63.27 info for the web " News " page	Jason Coder	Closed	Next meeting	Reminder sent 5/27
AI-87:	Jennifer to include transition statement into future documents during MEC review	Jennifer Santulli	Closed	Next meeting	Transition text is in new Template.

¹ Consolidated (re-numbered) action items are included here for reference, but are not a part of the minutes.

12. Adjournment - Chair - Ed moved to close the meeting, seconded by Bob. No opposition. The Chair thanked Keysight Technologies, Nate Potts, Alyse Sexton and the Members for their efforts and adjourned the meeting at 1:26PM-PST.

***** End of Meeting *****

Consolidated Action Items from Main Committee Meeting 11/10/22²

Action Item #	Subject	Responsible Person	Status	Delivery Date	Comments
AI-84:	Harry to write a PINS-C for incorporating EMC procurement guidance for Government purchases of COTS equipment PINS-C form	Harry Hodes	Open	Next meeting	Working with Marshall and Goddard re/ requirements
AI-85:	Investigate recognition of a corrigendum by the FCC & ISED	Steve Jones Jason Nixon	Open	Next meeting	Reminder sent 5/27 All Stds. are voluntary so recognition is also voluntary. Corr. is a stand-alone document(s) and must be recognized together with the base document.
AI-88:	Harry to contact NASA components to see if there is interest in developing a design guide for anechoic chambers suitable for use in testing commercial payloads and spacecraft radars and communications equipment	Harry Hodes	Open	Next meeting	
AI-89:	Jerry to add Harry as an observer to the SC5 webinar invitation list.	Jerry Ramie	Closed	Next meeting	(added 11/23)
AI-90:	Jerry to place <u>shared meeting calendar</u> link on the Home Page near the Upcoming Meeting Schedule link. Change name of Upcoming Meeting Schedule to Bi-annual Meeting Schedule.	Jerry Ramie	Closed	Next meeting	Posting order sent 11/28/22
AI-91:	Jerry & Megan to modify the generic agendas to show "newsletter editor" instead of Dave Zimmerman, with a link to the Officers page.	Jerry Ramie Megan McConnell	Closed	Next meeting	Modified all generic agendas 11/28/22

Attachments from Main Committee Meeting 11/10/22³

Item	Description	URL
2.1	Draft agenda	http://www.c63.org/documents/misc/minutes/2022_Nov/20221110_Main_Agenda_2.doc
2.2	Patent slides	http://www.c63.org/documents/misc/patents/C63_Patent_Call_slideset_final_1.pdf
2.3	Application for C63 Member	https://www.c63.org/documents/c63/Main_Committee_Application_Form_20220118.pdf
3.0	Chairman's Report	http://www.c63.org/documents/misc/minutes/2022_Nov/20221110%20-%20C63_Main%20Committee%20-%20Chairman's%20Report.ppt
4.0	Vice Chair's Report	

² Consolidated (re-numbered) action items are included here for reference, but are not a part of the minutes.

³ Attachments are included here for reference, but are not a part of the Minutes

5.1	Approved previous Minutes	http://www.c63.org/documents/misc/minutes/2022_Nov/20220519_Aproved_Main_Mins.doc
5.3	Interpretation log	http://www.c63.org/documents/misc/minutes/2022_Nov/Interpretations_log_20220405.xls
5.4	Electronic motions	http://www.c63.org/documents/misc/minutes/2022_Nov/Electronic_motions_2022_3Q.xls
6.0	Secretariat Report	http://www.c63.org/documents/misc/minutes/2022_Nov/Secretariat%20report%20q4%202022.ppt
6.2	Status of PINS & PINS-C	https://www.c63.org/documents/misc/matrix/c63_standards.htm
6.2	New blank PINS form	http://www.c63.org/documents/misc/minutes/2022_May/Blank%20PINS%20form.doc
7.0	Slide Template (4:3)	http://www.c63.org/documents/misc/temp/C63_PowerPoint_template.ppt
7.0	Slide Template (16:9)	http://www.c63.org/documents/misc/temp/C63_PowerPoint_template_wide.ppt
7.1	SC1 Report	http://www.c63.org/documents/misc/minutes/2022_Nov/SC1%20update.ppt
7.2	SC2 Report	
7.3	SC3 Report	http://www.c63.org/documents/misc/minutes/2022_Nov/SC3_Report_to_Steering_2022_11.ppt
7.4	SC4 Report	http://www.c63.org/documents/misc/minutes/2022_Nov/SC4%20Main%20Committee%20Report%20-%20Fall%202022%20Meetings-R1.ppt
7.5	SC5 Report	
7.6	SC6 Report	http://www.c63.org/documents/misc/minutes/2022_Nov/SC6%20Main%20Report%20Nov2022.ppt
7.7	SC7 Report	http://www.c63.org/documents/misc/minutes/2022_Nov/SC7%20Main%20Committee%20Meeting%20-%20November%202022.ppt
7.8	SC8 Report	http://www.c63.org/documents/misc/minutes/2022_Nov/SC8%20Main%20Committee%20Report-%20221104%20-%20v1.pptx
10.2	Newsletters page	http://www.c63.org/documents/c63/list_of_newsletters.htm