

American National Standards Committee C63[®] on Electromagnetic Compatibility

May 19, 2022 – 8:00 AM to 5:00 PM-CDT ETS-Lindgren, Cedar Park, TX

Chair: Dan Hoolihan

Vice-Chair: Dan Sigouin

Secretary: Jerry Ramie

Approved Minutes

- 1. Call to Order Chair The meeting was called to order at 8:06AM-CDT. This is our first "hybrid" meeting.
 - 1.1. Introductions (roll call) Secretary (Revised: 29 March, 2022) (Absent)

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

TCB Council, Inc.	Harvey, Chris	Vacant
TIMCO Engineering Inc.	<u>Sigouin, Dan</u>	<u>Clavier, Bruno</u>
TÜV Rheinland of North America	Graff, William	Fagley, Bruce
TÜV SÜD America, Inc.	Elliott, William (Mac)	Vacant
UL-LLC	<u>DeLisi, Bob</u> *	Michael Antola
US Department of Defense - Joint Spectrum Ctr.	<u>Shellman, Marcus</u>	Duncanson, Mike
Individual Members:		
INDIVIDUAL Member	<u>Hoolihan, Daniel</u> *	None
INDIVIDUAL Member	Lichtig, John	None
INDIVIDUAL Member	<u>Schaefer, Werner</u>	None
INDIVIDUAL Member	Zimmerman, Dave	None
INDIVIDUAL Member	<u>Berger, Stephen</u>	None
INDIVIDUAL Member	Case, Dave	None

Observers: Jerry Ramie, Allen Crumm, Jeremiah Darden*, Amanda McDonald, Steven Frierson*, Harry Hodes*, Jens Medler*, Richard Wambua*, Janet O'Neil*, Pay Thao*

NOTE – an asterisk means the person was on-site in Austin-Cedar Park, Texas; no-asterisk indicates that the person was on-line on the video conference

Quorum: 31 organizations + 6 individual members = <u>37 total</u>. A quorum is 50% (rounding up); which is <u>19</u> or more members in attendance. <u>Quorum was achieved</u> with **25** members attending the meeting.

2. Approval of the Agenda

2.1 Approval of agenda - Chair - Ms. Zakharia moved, seconded by Mr. DeLisi, to accept the <u>Agenda</u> 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 – Harry Hodes Application / CV-resume There was no opposition, unanimous approval. AI-82: Jerry to add Harry Hodes to Main Committee roster.

3. Chairman's Report – Hoolihan

3.1 - General – See PowerPoint slides -

3.2 - C63.12 – Move to SC2? – Chair - There was consensus at the Steering Committee meeting that more study was required for this idea.

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

5. Secretary's Report – Ramie

- **5.1 Minutes of the last Meeting Ramie -** Mr. Coder moved, seconded by Ms. McConnell to approve the <u>previous Minutes</u>. The 20191121 minutes were <u>approved</u> by acclamation.
- 5.2 Disposition of Interpretation Requests since last meeting Ramie All the items listed below are posted. The two items with N/A 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
1/7/2020	lan Watch	lan.Watch@ul.com	C63.10 (2013) Clause 6.4.6 Loop orientation	SC4	1/7/2020	1/7/2020	3/30/2020
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

5.3 Open Interpretation requests - Ramie (Interpretations Log 20220405)

Open a	Open are in red:						
Date	Requestor	e-mail address	Project name	SC #	Rc'vd by Se	Sent to SC	Back fm SC
12/21/2021	Jeong Hwan Kim	jeonghwankim54@gmail.com	C63.5 (2017) Clause M.4 Uncertainty contributors SC1	12/2	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
2/15/2022	Vote on motion to approve C63.25.2 / v021 for formal balloting	Z. Chen	Passed 3/15	Afrm=17, Afrm/c=3, Neg=1,Abs=4
3/4/2022	Vote on draft Interp for C63.4 (2014) Clause 8.3.2.2	J. Ramie	Passed 3/18	Afrm=10, Afrm/c=3, Neg=5,Abs=19

5.5 Membership Changes since last meeting - Ramie

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Date	Membership changes	Source	Result	Comments
2/25/2022	Restore R. Carlton as SC3 Chair	D. Hoolihan	Restored 2/25	to SC3 roster only
3/10/2022	Remove R. Carlton from C63.9 Working Group	R. Carlton	Removed 3/10	from C63.9 WG roster only
3/10/2022	Remove R. Carlton from C63.16 Working Group	R. Carlton	Removed 3/10	from C63.16 WG roster only
3/11/2022	Move A. Crumm to C63.16 Chair, R. Worley to Vice Chair	E. Hare	Moved 3/14	on C63.16 roster only
3/29/2022	Replaced B. Liska w/ A. Bria as Ericsson Alternate rep.	K. Skoglund	Replaced 3/29	on Main, Public, Private rosters
4/19/2022	Remove B. Fagley from C63.9 roster (remains as observer)	B. Fagley	Removed 4/19	from C63.9 roster only (observer)
4/25/2022	Remove N. Lim from C63.4 Working Group roster	N. Lim	Removed 4/25	from C63.4 roster only
4/25/2022	Changed H. Hodes affiliation to Consultant on C63.25.3	J. Ramie	Changed 4/25	on C63.25.3 roster only
5/10/2022	Changed G. Lin affiliation to HYTORC	G. Lin	Changed 5/13	C63.4, .29, .31,MIMO & C63.26
5/11/2022	Remove C. Dilay from Main, SC2, SC3 & SC7 rosters	C. Dilay	Removed 5/11	Main, SC2, SC3 & SC7 rosters
5/11/2022	Add H. Mellberg to C63.4 roster	J. Ramie	Added 5/13	to C63.4 roster only
5/12/2022	Remove R. Lombardi from SC5 roster & Webex list	R. Lombardi	Removed 5/12	from SC5 roster only (not WGs)
5/17/2022	Added H. Hodes to SC4 roster	B. DeLisi	Added 5/17	to SC4 roster only
5/17/2022	Added H. Hodes to SC3 roster	R. Carltom	Added 5/17	to SC3 roster only

6. <u>Secretariat Report</u> – IEEE – C63.2 will be going to ballot in a few days.

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 (<u>currently posted list</u>) AI-83: Jennifer to review current PINS form to see if all required questions are included; Jerry to post new PINS form. <u>New blank PINS form for posting</u>.

- 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 <u>15 MINUTES</u>.
 - 7.1. <u>SC1</u>: Measurement and Instrumentation Chen The Scope, Duties and Roster were approved.
 - **7.2.** <u>SC2</u>: **Definitions Shellman -** AI-84: Harry to write a PINS-C for incorporating EMC procurement guidance for Government purchases of COTS equipment. The new Scope, Duties and Roster were approved.
 - **7.3. SC3: International Standardization Carlton** Unchanged Scope, Duties & new Membership roster were approved.

Lunch break ******[BOMB SCARE - Building was evacuated]***[meeting moved to Hotel]***

- **7.4.** SC4: Wireless and ISM Equipment Measurements DeLisi Scope, Duties and Roster were approved by acclamation. AI-85: Steve Jones to investigate recognition of corrigendum by the FCC.
- **7.5. SC5**: **Immunity testing Hare** The Scope, Duties and Roster was approved.
- **7.6. SC6**: Laboratory Accreditation Long The Scope, Duties and Roster was approved. The new slate of officers was approved.
- **7.7.** SC7: Wireless Coexistence Coder The Scope, Duties and Roster was approved.
- **7.8. SC8: Medical Equipment Testing Berger** see slides: The Scope, Duties and Roster was approved.

8. New Business

8.1. Election of officers - The Steering Committee met to discuss the election of officers. Dan is overdue. Bob DeLisi has expressed a "moderate" interest in the position. <u>A motion</u> was made by Bob Delisi to suspend the rules so that current officers can remain in position until the next Main meeting. This can give the Committee the time to develop preferences for the Chair. Secretary and Treasurer can remain in place. The Procedures require direct election of the Chair and Vice Chair. Bob noted that if elected Chair he would resign as SC4 Chair. Harry felt that Allen could improve his performance. Harry suggested that if a volunteer for a position could not be found to allow the Chair to appoint Members to open positions. No objections, the motion passed unanimously.

9. Other Administrative Matters

- **9.1.** Web Page Ramie The <u>Generic Agendas for Subcommittees</u> 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.
- **9.2.** Administrative matters from the Steering Committee Maintenance Teams and Working Group dissolution: When finished, a C63 Working Group is disbanded. Other SDOs keep the Working Group intact to maintain the Standard. Do we want to do this? Harry pointed out that keeping the group intact would preserve the history and maintenance path forward. Nick proposed that Working Group members be made Subcommittee members to retain legacy knowledge. Dan mentioned that the Steering Committee discussed paying Working Group chairs. (honorarium?) Bob thought that the WG rosters could be left in place with a note that the work is suspended. (easy to maintain continuity) Harry suggested that the WG immediately issue a new PINS (or PINS-C) to retain interest and momentum for continuity. Jason Coder agreed that this was done with C63.27.

10. Other Business

10.1 Future Seminars and Workshops – Janet noted that we will have two workshops in Spokane at the EMC Symposium. We're looking for new topics for webinars to be given in Silicon Valley.
10.2 Newsletter report – Chair - We will have a C63 booth at the Symposium. Richard Stoddart's nephew will present the Stoddart award. Newsletter page

10.3 Next meeting – Chair - Nov. 7-11, 2022 – Keysight – Santa Rosa, CA, Nate Potts (Host)

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 11/21/19 ¹					
Action Item #	Subject	Responsible Person	Status	Delivery Date	Comments
AI-59:	Harry to forward the reviewed and approved Reviewer Action reports to SC2	Harry Hodes	Closed	5/8/20	
AI-68:	Jerry to change SPAWAR affiliation to NAVWAR - US Navy on Main, Public, Private and SC2 rosters	Jerry Ramie	Closed	5/8/20	Changed 11/25/19
<mark>AI-69:</mark>	Jerry to contact the Interpretation Requestors after 1/1/20 and offer to re-submit their requests for our consideration	Jerry Ramie	Closed	5/8/20	
<mark>AI-70:</mark>	Dan H to write the FCC petition draft with Terry Mahn regarding C63.25.1	Dan Hoolihan Terry Mahn	Closed	5/8/20	
AI-71:	Jerry to circulate the C63.14 draft provided by Marcus to the Main Committee for a vote to approve the document for formal balloting at the IEEE	Marcus Shellman Jerry Ramie	Closed	5/8/20	
<mark>AI-72:</mark>	Soo Kim to research how to publish this <u>NIST paper</u> as a C63 technical report	Soo Kim	Closed	5/8/20	
<mark>AI-72A:</mark>	Harry will provide the <u>TCB</u> <u>Council C63.30 PowerPoint file</u> (<u>VTOL video</u>) to Jerry to attach to these Minutes and to Mr. Crumm to post in the private SC4 area for C63.30	Harry Hodes Jerry Ramie Allen Crumm	Closed	5/8/20	Posted 11/30/19
<mark>AI-73:</mark>	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	<mark>Open</mark>	5/8/20	
<mark>AI-74:</mark>	Mr. Ramie will circulate the comment resolution and the draft C63.24 at the Main Committee for voting approval	Don Heirman Jerry Ramie	Closed	5/8/20	Published 3/31/2021. Working Group disbanded.
<mark>AI-75:</mark>	Mr. Long to provide the changes required in the SC6 roster for posting by Mr. Ramie	Randy Long Jerry Ramie	<mark>Open</mark>	5/8/20	
<mark>AI-76:</mark>	Mr. Coder to provide wide-screen version of C63 template to Mr. Ramie for posting with existing template	Jason Coder Jerry Ramie	Closed	5/8/20	Posted 11/25/19
<mark>AI-77:</mark>	Mr. Coder or Mr. Berger to inform Mr. Ramie about the required changes needed in the SC8 rosters	Jason Coder Stephen Berger Jerry Ramie	Closed	5/8/20	
AI-78:	SC6 to generate another "example" statement for transition period. Andy to supply text for such statement	Andy Griffin Randy Long	Closed	5/8/20	
<mark>AI-79:</mark>	Mr. Hoolihan will set up a meeting with IEEE personnel to express	Dan Hoolihan	Closed	5/8/20	

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

	our concern with this Normative figure requirement				
AI-80:	Mr. Griffin to send a note to Mr. Windler asking for twice/yearly billing to keep his fees below the credit card limit	Andy Griffin	Closed	5/8/20	
AI-81:	Mr. Hoolihan will communicate with Mr. Windler about allowing the option of paying ahead up to three years	Dan Hoolihan Mike Windler	Closed	5/8/20	

AI-86: Jason Coder to supply C63.27 info for the web "News" page.

Harry moved, seconded by Dave Z. to <u>include our established transition statement in future</u> <u>documents reviewed during MEC review</u>. Discussion? The motion carried unanimously. (see C63.30 transition text below)

The following referenced documents are indispensable for the application of this standard (i.e., they must be understood and used; therefore, each referenced document is cited in text and its relationship to this standard is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies. However, for undated references, unless otherwise stated by the regulatory authority or purchasing agency, a transition period of one year applies, starting from the date a new edition of such a reference is published, within which either the previous or the new edition shall apply.

AI-87: Jennifer to include transition statement into future documents during MEC review.

12. Adjournment - Chair - The Chair thanked ETS-Lindgren and the Members for their efforts and adjourned the meeting at 2:21PM-CDT.

*****	End of Meeting	*********
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	Consolidated Action Items from Main Committee Meeting 5/19/22 ²				
Action Item #	Subject	Responsible Person	Status	Delivery Date	Comments
<mark>AI-73:</mark>	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	<mark>Open</mark>	Next meeting	
<mark>AI-75:</mark>	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
<mark>AI-82:</mark>	Jerry to add Harry Hodes to Main Committee roster.	Jerry Ramie	Closed	Next meeting	Added to Main roster & vmc63 list 5/27
Al-83:	Jennifer to review current PINS form to see if all required questions are included; Jerry to post new PINS form. <u>New blank</u> <u>PINS form for posting</u>	Jennifer Santulli Jerry Ramie	Closed	Next meeting	Sent to Shannon for posting on 5/27
Al-84:	Harry to write a PINS-C for incorporating EMC procurement guidance for Government purchases of COTS equipment <u>PINS-C form</u>	Harry Hodes	<mark>Open</mark>	Next meeting	

Consolidated Action Items from Main Committee Meeting 5/19/22²

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

<mark>AI-85:</mark>	Steve Jones to investigate recognition of corrigendum by the FCC	Steve Jones	<mark>Open</mark>	Next meeting	Reminder sent 5/27
<mark>AI-86:</mark>	Jason Coder to supply C63.27 info for the web "News" page	Jason Coder	<mark>Open</mark>	Next meeting	Reminder sent 5/27
<mark>AI-87:</mark>	Jennifer to include <u>transition</u> <u>statement</u> into future documents during MEC review	Jennifer Santulli	<mark>Open</mark>	Next meeting	

Attachments from Main Committee Meeting 5/19/22³

Item	Description	URL
2.1	Draft agenda	http://www.c63.org/documents/misc/minutes/2022_May/20220519_Main_Agenda_3.doc
2.2	Patent slides	http://www.c63.org/documents/misc/patents/C63 Patent Call slideset final 1.pdf
2.3	New Member application	http://www.c63.org/documents/misc/minutes/2022 May/Main Committee Application Form(Hodes).pdf
2.3	New Member CV/resume	http://www.c63.org/documents/misc/minutes/2022 May/H.%20Hodes%20CV%20%20(04-22-2022).pdf
3.1	Chairman's Report	http://www.c63.org/documents/misc/minutes/2022_May/20220519%20-%20C63_Main%20Committee%20report.ppt
4.0	Vice Chair's Report	
5.1	Approved previous Minutes	http://www.c63.org/documents/misc/minutes/2022_May/20191121_Approved_Main_Mins.doc
5.3	Interpretation log	http://www.c63.org/documents/misc/minutes/2022 May/Interpretations log_20220405.xls
5.4	Electronic motions	http://www.c63.org/documents/misc/minutes/2022 May/Electronic motions 2022 2Q.xls
6.0	Secretariat Report	http://www.c63.org/documents/misc/minutes/2022_May/Secretariat%20report%20q2%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 May/SC1%20update.ppt
7.2	SC2 Report	http://www.c63.org/documents/misc/minutes/2022 May/SC2 Committee%20Report 20220519%20Rev%202.pptx
7.3	SC3 Report	http://www.c63.org/documents/misc/minutes/2022 May/SC3 Report to Steering 2022_05.ppt
7.4	SC4 Report	http://www.c63.org/documents/misc/minutes/2022_May/Main%20Committee%20Report%20-%20SC4%2020220518.pptx
7.5	SC5 Report	http://www.c63.org/documents/misc/minutes/2022 May/C63 SC5 Meeting Report 20220519.ppt
7.6	SC6 Report	http://www.c63.org/documents/misc/minutes/2022_May/20220519%20SC6%20Main%20Report.ppt
7.7	SC7 Report	http://www.c63.org/documents/misc/minutes/2022_May/SC7%20Main%20Committee-%20May%202022.ppt
7.8	SC8 Report	http://www.c63.org/documents/misc/minutes/2022_May/Main%20Committee%20Report%20-%20SC8%20- %20200517%20-%20v1.pptx
10.2	Newsletters page	http://www.c63.org/documents/c63/list_of_newsletters.htm

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