C63®

Accredited Standards Committee C63®

Electromagnetic Compatibility

Subcommittee 3: International Standardization

Chair: Don Heirman   **Vice Chair: Harry Hodes**   **Secretary: Jerry Ramie**

Keysight Technologies, Santa Rosa, CA

November 20, 2019; 3:00 PM – 5:15 PM - PST

Approved Minutes

1. **Call to Order: Chair** - The meeting was called to order at 3:00PM-PST

   1.1   **Announcements: Chair's remarks –** The Chair will be joining the meeting via webinar; the Vice Chair will be present at the meeting. We're going to see the Reviewer Actions Table 2 today. We'll meet **2/13/20 @ 2:00PM-EST** by webinar as our first meeting in 2020. At that time we will further review progress on the action items.

   1.2   **Meeting logistics announcements: Host -** There were no announcements

   1.3   **Introductions: Secretary – roll call** (attending members with their affiliations and guests shown below) **Report any roster errors to the ASC-C63® Secretary**

   1.4   **Present membership:** The SC3 Roster is shown below: AI-113: Jerry to make corrections indicated below on the SC3 roster page   **Mr. Berger resigned 1/22/20**

Subcommittee 3 Membership Roster Shaded names are not present.

Name	Role within Subcommittee 3	Affiliation
Berger, Stephen	Chair Subcommittee 8	TEM Consulting
Coder, Jason	Chair Subcommittee 7	NIST
DeLisi, Bob	Chair Subcommittee 4	UL LLC
Dilay, Chris	Member	Naval Info. Warfare Center Pacific
Griffin, Andy	Member US CISPR/H Technical Advisor	CISCO Systems
Hare, Ed	Chair Subcommittee 5	ARRL
Heirman, Don	Chair Subcommittee 3 Past Chair CISPR US CISPR/A Deputy Technical Advisor US CISPR Technical Advisor	Don HEIRMAN Consultants
Hodes, Harry	Vice Chair Subcommittee 3	Bay Area Compliance Laboratories Corp.
Hoolihan, Dan	Chair ASC-C63®	Hoolihan EMC Consulting
Klinger, Jeff	Member	Compatible Electronics
Kramer, Doug	Member	ETS-Lindgren
Long, Randy	Chair Subcommittee 6	ANAB (ANSI National Accreditation Board)
Mendoza, Ernesto	Member US CISPR/F Tech. Advisor	Signify
Popovici, Horia	Member	Innovation, Science and Economic Development Canada
Potts, Nate	Member	Keysight Technologies
Samoto Mits	Member	Liberty Labs Asia
Shellman, Marcus	Chair Subcommittee 2	DOD – Joint Spectrum Center (JSC)
Thul, Travis	Member	Minnesota State College Southeast
Non-Voting Members		

Arnett, Dave	Liaison Member **US** CISPR/I Technical Advisor	Garmin
Fanning, Craig	Liaison Member **US** CISPR/D Technical Advisor	**Elite Electronic Engineering**
Hofmann, H.R.	**Emeritus Member**	**Hofmann EMC Engineering**
Jones, Steve	**Liaison Member**	**FCC Laboratory**
Mahn, Terry	Liaison Member **US** CISPR/B Technical Advisor	**Fish and Richardson**
Cibulka, Michael	Liaison Member **TC77 & SC77B Technical Advisor**	**Rockwell Automation**

Guests and Observers: (non-voting) Ghery Pettit

1.5 **Quorum: (50% of roster) constitutes a quorum.** (rounding up) (17 roster members / 2 = 8.5 >> 9 (therefore 9 people are required for a quorum) **Was quorum achieved? (Yes)** 11 members were present. If not, any actions taken are subject to confirmation by electronic ballot or at a future meeting. (Quorum is not required for Working Group meetings)

2. **Approval of the Agenda: Secretary -** The Secretary scrolled through the Agenda line-by-line and asked for approval. It was approved by acclamation.

2.1 **Approval of the previous Minutes - 20190828** The previous Minutes were shown and approved by acclamation.

2.2 **Review of the patent slides –** The patent slides were shown and no patent issues were raised. All in attendance agreed to abide by the policy shown.

3. **Review of Subcommittee Membership, - Report any errors to the Secretary**

3.1 Review of Membership Guidelines

Subcommittees:
For an individual to remain a voting member of a Subcommittee, active participation in Subcommittee meetings and regular responses to Subcommittee email votes is required. Should a member fail to attend at least one of three consecutive scheduled meetings (in person or remotely via web conference (when used)) or respond to at least one of every two consecutive Subcommittee email votes, their membership in that Subcommittee may be at risk.

Note: Abstentions shall be treated the same as a "yes" or "no" vote regarding the requirement to respond to email votes.

Member Attendance Log: Any errors in the log?

9/7/16	11/7/16	5/10/17	8/21/2017	11/9/17	2/7/18	5/3/18	9/19/18	11/29/18	2/14/19	5/2/19	8/28/19	Full Name
				x		x	(red)	(red)	(red)	(red)	(red)	Berger, Stephen
						x	x	x		x		DeLisi, Bob
		x		x		x	x			x		Dilay, Chris
	x		x	x		x		x		x		Griffin, Andy
a	x	x		x		x		x		x		Hare, Ed
x	x	x	x	x	x	x	x	x	x	x	x	Heirman, Don
	x	x				x		x	x		x	Hodes, Harry
		x		x		x		x		x		Hoolihan, Dan
	x	x	x	x		x	x	x		x	x	Klinger, Jeff
					x	x	x	x	x	x		Kramer, Doug
	x			x		x				x		Long, Randy
		x	x	x	x	x	x	x	x		x	Mendoza, Ernesto
		x	x	x	x	x	x	(red)	(red)	(red)	(red)	Popovici, Horia
		x	x	x	x	x			x	x	x	Potts, Nate
	x	x					x	x	x	x	x	Samoto, Mits
										x	x	Shellman, M.
											a	Thul, Travis
x				a	x	x			x			Arnett, Dave
x	x	x	x	x	x	x			x	x		Fanning, Craig
		x		x	x	x	x		x		x	Hofmann, H.R.
									x		x	Jones, Steve
						x						Mahn, Terry
	x	x	x	x	x	x	x	x	x	x		Cibulka, Michael
x	x	x	x	x	x	x	x	x	x	x	x	Ramie, Jerry

Any members at risk? These members are at risk: **Stephen Berger, Horia Popovici** (Travis Thul is deployed overseas and will remain on the SC roster)

AI-114: Jerry to write the "at risk" form letter to Mr. Berger & Mr. Popovici. **Mr. Berger resigned 1/22/20.**

3.2 Consideration of new members? Application for C63® Subcommittee Membership

There is no application for membership pending.

4. Status of harmonization of all C63 Standards with international equivalents - Chair

C63 documents listed below in column 1 are to be compared with the standards indicated in the far-right column. The comparisons are to show where harmonization may or may not be possible and what action should be taken All this will be in the standardized template form for each standard shown . The link to the form is found in 4.1 below.

Table 1: Comparisons of ASC-C63® Documents and International Documents

C63® Document	SC #	Subject	International Document
C63.2	SC1	Test Instrumentation	CISPR 16-1-1 (Reviewer Action 1 (RA-1) - Doug)
C63.4	SC1	Measurements	CISPR 16-2-X; RA-2; CISPR 16-1-4 RA-3; CISPR 32 RA-4 Petit **Doug needs a reviewer for this**
C63.5	SC1	Antenna Calibration	CISPR 16-1-6 RA-5; SAE ARP 958 RA-6; CISPR 16-1-4 (RA-7)
C63.9	SC5	Office Equipment Immunity	IEC 61000-4-39 (RA-8) Griffin
C63.10	SC4	Unlicensed Transmitters	ETSI Wireless requirements? (need SC4 member's help) Bob Delisi indicated that there are so many ETSI standards that might apply that this review will not be done.
C63.15	SC5	Immunity	IEC 61000-4-x; RA-9; Heirman; CISPR 35 RA-10 Pettit

C63.16	SC5	ESD	IEC 61000-4-2; RA-11; Worley; ISO 10605; RA-12; Worley, SAE J1113-xx RA-13 Fanning
C63.23	SC1	Uncertainty	CISPR 16-4-2; RA-14; CISPR 16-1-4 RA-15
C63.24 draft	SC5	Generic In Situ Meas.	IEEE 473; RA-16;(Heirman-Kiger)
C63.25.1	SC1	Test Site Validation 1 GHz to 18 GHz)	CISPR 16-1-4 RA-17
C63.25.2	SC1	Test Site Validation 30 MHz to 1 GHz	CISPR 16-1-4 RA-17
C63.26	SC4	Licensed Transmitters	ETSI wireless requirements mmWave possible comparison. RA-18
C63.27	SC7	Co-existence	IEC 62657-2 RA-19 Berger
C63.28 draft	SC2	Best Practices	No equivalent; RA-20 Shellman
C63.29 draft	SC4	Lighting products	CISPR 15; Runway lighting under IEC 61827 RA-21 Ernesto Mendoza (waiting for maturity of C63.29 before comparison)
C63.30 draft	SC4	Wireless Power Transfer Products	Bob assigned Travis: Draft amendments to CISPR 11 (RA-22), CISPR 14-1 (RA-23), CISPR 32; (RA-24) update to CISPR 12 (RA-25)
C63.31 draft	SC4	ISM equipment (FCC MP-5)	CISPR 11; (RA-26) CISPR 14-1 induction cooking; (RA-27) DeLisi CISPR/B/672/DC (4/14/17) RA-28 CISPR/B/700/DC (2/2/18) RA-29

4.1 Review Actions:

These are the assignments for the 29 Reviewer Actions. The assignments have been given to the Subcommittee chairs (or WG chairs or their designee) noted below to find subcommittee reviewers to do the comparisons in the above table and to fill out the comparison reports using the template provided to the SC chairs.

Harry Hodes is assigned follow up on these Reviewer Actions (RA) : The "comparison report" template that reviewers should use is available here.

AI-115: Harry to check the accuracy of the names on this assignment list (Table 1) These are the initial assignments. It has to be updated as to who ended up with the RA action if different than what is shown here.

RA-1 thru RA-7: Kramer (all SC1 content)
RA-8: Griffin
RA-9: Heirman
RA-10: Pettit
RA-11 thru 13: Worley
RA-14 & 15: Kramer
RA-16: Heirman / Kiger
RA-17 Kramer
RA-18: DeLisi
RA-19: Berger
RA-20: Shellman
RA-21: Mendoza
RA-22-25: Thul
RA-26-29: DeLisi

4.2 Status of naming reviewers and reports completed - This part of the agenda
identified the persons named for each RA and to update Table 2 for the minutes and going into 2020. For

those named, there will be time to review what is in their report using the comparison report template
Access to ASC-C63® documents is available here:https://app.box.com/s/tv8akgqrjncb3qwbbkdyobk6mgpiuwci
(read-only versions of our Standards)

IEC standards for the comparisons below are available for loan from Harry Hodes.

Table 2: Reviewer Actions from 5/2/19 Meeting of SC3

RA #	Task	Responsible party	Due Date	Status
RA-1	Compare C63.2 to CISPR 16-1-1	Harry Hodes	11/25/19	Open He has the file...
RA-2	Compare C63.4 to CISPR 16-2-X	H. Popovici	2/13/20	Open
RA-3	Compare C63.4 to CISPR 16-1-4	H. Popovici	2/13/20	Open
RA-4	Compare C63.4 to CISPR 32	Ghery Pettit	10/17/19	Closed
RA-5	Compare C63.5 to CISPR 16-1-6	Nate Potts	11/20/19	Closed
RA-6	Compare C63.5 to SAE ARP 958 Rev D (RDL) Compare C63.5 to SAE ARP 958 Rev D (DK)	R. Lombardi Doug Kramer	8/21/19	Closed There is no interest in C63.5 in this work.
RA-7	Compare C63.5 to CISPR 16-1-4	Doug Kramer	11/20/19	Closed
RA-8	Compare C63.9 to IEC 61000-4-39 & IEC 61000-4-3	Jeff Evans	11/20/19	Open
RA-9	Compare C63.15 to IEC 61000-4-x AI-116: Don to communicate with SC5 on this report Compare C63.15 to IEC 61000-4-x and provide it to Ed Hare	Don Heirman	11/20/19	Closed Subject to multiple people involved based on C63.15 - take to SC5 next meeting for further comparisons, if any
RA-10	Compare C63.15 to CISPR 35	Ghery Pettit	11/20/19	Open
RA-11	Compare C63.16 to IEC 61000-4-2	Mike Cibulka	11/20/19	Open
RA-12	Compare C63.16 to ISO 10605 (Automotive ESD)	Rich Worley R. Lombardi	9/12/19	Closed
RA-13	Compare C63.16 to SAE J1113-xx	R. Lombardi	5/31/19	Closed
RA-14	Compare C63.23 to CISPR 16-4-2	Bob DeLisi	11/20/19	Open
~~RA-15~~	~~Compare C63.5 to CISPR 16-1-6~~	~~Nate Potts~~	~~5/31/19~~	~~Duplicate of RA-5~~
RA-16	Compare C63.24 draft to IEEE 473	Don Heirman Chad Kiger	11/24/18	Closed Awaiting IEEE-473 for comparison..
RA-17	Compare C63.25 to CISPR 16-1-4 (two freq. ranges under C63.25.1 and C63.25.2)	Doug Kramer	11/20/19	Open
RA-18	Compare C63.26 to ETSI wireless requirements mmWave possible	Bob DeLisi	9/25/18	Closed but, ongoing work in C63.26, revisit at next meeting of C63 meeting
RA-19	Compare C63.27 to IEC 62657-2	Steve Berger resigned 1/22	11/20/19	Open need a report
RA-20	Compare C63.28 draft to "no equivalent"	Marcus Shellman	5/2/19	Closed No equivalents found and hence no report generated
RA-21	Compare C63.29 draft to CISPR 15; Runway lighting under IEC 61827	Ernesto Mendoza	2/14/19	Closed
RA-22	Compare C63.30 draft to Draft amendments to	Travis Thul	11/20/19	Open

	CISPR 11	Bob DeLisi		
RA-23	Compare C63.30 draft to CISPR 14-1	Travis Thul Bob DeLisi	11/20/19	Open
RA-24	Compare C63.30 draft to CISPR 32	Travis Thul Bob DeLisi	11/20/19	Open
~~RA-25~~	~~Compare C63.30 draft to CISPR 12~~	~~Travis Thul Bob DeLisi~~	~~11/20/19~~	~~Closed~~ no equiv?
RA-26	Compare C63.31 draft to CISPR 11	Bob DeLisi	11/20/19	Open
RA-27	Compare C63.31 draft to CISPR 14-1 induction cooking	Bob DeLisi	11/20/19	Open
RA-28	Compare C63.31 draft to CISPR/B/672/DC (4/14/17)	Bob DeLisi	11/20/19	Open Hoolihan to provide CISPR
RA-29	Compare C63.31 draft to CISPR/B/700/DC (2/2/18)	Bob DeLisi	11/20/19	Open Hoolihan to provide CISPR

AI-117: Dan Hoolihan to provide CISPR documents shown in RA-28 and RA-29

Table 2 will used to measure progress on receiving the comparison reports at the next webinar in February 2020

5 Other Old Business: Chair

5.1   Written reports - Written reports of this Subcommittee meeting shall be presented by the Subcommittee Chair at the Main Committee meeting. These reports shall be made using the PowerPoint template. Prior to the Main Committee meeting, the SC report and approved previous meeting minutes shall be provided to the projectionist for showing on the screen at the Main meeting. The Presentation and any written report shall also be sent by the Subcommittee Chair to the ASC-C63® Newsletter editor

5.2 Coordination with SC2 for definitions - Before any Working Group draft can be submitted to the Subcommittee for approval, the document must be provided to the SC2 Chair for evaluation and coordination of the definitions used.

Since there is no activity on C63.12, there are no definitions to forward to SC2 as no other standard is being developed in this Subcommittee.

6. **New Business: Chair - SC3 report to Main** - Harry noted that we did not consider RTCA-DO-160 / EA-14 for aircraft in Table 2. Don wanted us to finish up our Table 2 assignments first before considering adding any new Standards.

7. C63.org website use and updates: Secretary - We normally post documents to the SC3 protected area. If any SC or WG needs help with this posting, a Technical Secretary is available to assist.

8. Review of the Action Items: Secretary

8.1 Review of Action Items from this meeting: The Action Items from this meeting were shown and agreed upon.

8.2 Review of Action Items from previous meeting: Results of review are shown below:

Consolidated Action Items from 8/28/19 Meeting of SC3

AI #	Task	Responsible party	Due Date	Status
AI-20:	Look at modulation in C63.9 with potential for introduction into SC77B through the US National Committee.	Andy Griffin	11/20/19	OPEN Unique test, possible in 61000-4-3? Modulation is not AM but more varied.

AI-26:	Review CISPR 11, CISPR 14-1 & CISPR-32 for consideration for use in C63.30.	Travis Thul	11/20/19	CLOSED
AI-27:	Review CISPR 11, 14-1 for consideration for use in C63.31. CISPR 11 totally addresses Industrial, Scientific, and Medical device emission tests, both radiated and conducted. Maybe Derek can use the comparison template to show what is covered and not covered in CISPR 11 or in C63.31 so it is clear where we are and where the FCC MP-5 can be bolstered with the info from at least CISPR 11 and possibly 14-1 and 14-2 (if anything) Horia advocating for C63.4 test methods.	Bob DeLisi	11/20/19	OPEN C63.31 Draft needs to mature
AI-36:	Supply note on progress of IEC 61000-4-3. What is happening between 1 & 6GHz? (immunity)	Andy Griffin	11/20/19	OPEN New CDV 77B-798 has replaced old one, voting in mid-May
AI-57:	Generate comparison table to summarize requirements from 1-6 GHz. (emissions)	Andy Griffin	11/20/19	OPEN
AI-58:	Form TG with Andy, Zhong & Nate to identify a single antenna calibration requirement. (Std. Site method in ANSI, Section 5?)	Bob DeLisi Andy Griffin Zhong Chen Nate Potts	11/20/19	CLOSED CISPR 16-1-6 (Cl. 8.4) is same as C63.5 (Cl 5.1.3)
AI-96A	Identify what is similar, different, or not considered per the categories in the report form and place that information into the form	Richard Worley	11/20/19	OPEN
AI-100A	Send to the SC3 secretary the list of those from SC1 that are assigned the reviewer action items noted just above.	Doug Kramer	11/20/19	CLOSED
AI-100B	Review reports to see if they are sufficient and importantly show the need for action to harmonize.	Subcommittee members	11/20/19	OPEN
AI-102:	Jerry & Don to look at reports already received and list in a table the conflicts, similarities and identical ones	Jerry Ramie Don Heirman Harry Hodes	11/20/19	OPEN
AI-105:	Jerry to add Marcus Shellman to member attendance log (upper portion) as SC2 Chair	Jerry Ramie	11/20/19	Closed added 8/28
AI-106:	Jerry to send "at risk" note to Mr. Berger & Mr. Thul	Jerry Ramie	11/20/19	Closed sent 8/28
AI-107:	Jerry to e-mail C63.15 read-only, report template & credentials to Ghery Pettit. https://app.box.com/s/tv8akgqrjncb3qwbbkdyobk6mgpiuwci	Jerry Ramie	11/20/19	Closed Template & credentials sent 8/28
AI-108:	M. Duncanson to send Jerry links to Read-Only C63.xx standards for forwarding to a Reviewer. https://app.box.com/s/tv8akgqrjncb3qwbbkdyobk6mgpiuwci	Michael Duncanson	11/20/19	Closed
AI-109:	Jerry to e-mail Doug Kramer re/ assignment of RA-2 & RA-3 (see AI-100A)	Jerry Ramie	11/20/19	Closed sent 8/28

AI #	Task	Responsible party	Due Date	Status
AI-110:	Jerry to place Jeff Evans on SC3 distribution & WebEx invitation lists	Jerry Ramie	11/20/19	Closed added 8/28
AI-111:	Jerry to drop Steve's info into our report format	Jerry Ramie Don Heirman	11/20/19	Closed Jerry posted file on 9/4
AI-112:	Jerry to send C63.12 - 2015 to SC3 Members and Guests. (do not forward or duplicate) https://app.box.com/s/tv8akgqrjncb3qwbbkdyobk6mgpiuwci	Jerry Ramie	11/20/19	Closed Link forwarded 9/4

9. Time and place of next meeting: Chair – 2/13/20 @ 2:00PM-EST (2 hours) (webinar set 1/23)

10. Closing remarks and Adjournment: Chair - Don will update Table 2 and update the Main slides, copying Harry. The meeting was adjourned at 4:53PM-PST.

** End of Meeting **

Consolidated Action Items from 11/20/19 Meeting of SC3

AI #	Task	Responsible party	Due Date	Status
AI-20:	Look at modulation in C63.9 with potential for introduction into SC77B through the US National Committee.	Andy Griffin	Next meeting	OPEN Unique test, possible in 61000-4-3? Modulation is not AM but more varied.
AI-27:	Review CISPR 11, 14-1 for consideration for use in C63.31. CISPR 11 totally addresses Industrial, Scientific, and Medical device emission tests, both radiated and conducted. Maybe Derek can use the comparison template to show what is covered and not covered in CISPR 11 or in C63.31 so it is clear where we are and where the FCC MP-5 can be bolstered with the info from at least CISPR 11 and possibly 14-1 and 14-2 (if anything) Horia was advocating for C63.4 test methods.	Bob DeLisi	Next meeting	OPEN C63.31 Draft needs to mature
AI-36:	Supply note on progress of IEC 61000-4-3. What is happening between 1 & 6GHz? (immunity)	Andy Griffin	Next meeting	OPEN New CDV 77B-798 has replaced old one, voting in mid-May
AI-57:	Generate comparison table to summarize requirements from 1-6 GHz. (emissions)	Andy Griffin	Next meeting	OPEN
AI-96A	Identify what is similar, different, or not considered per the categories in the report form and place that information into the form	Richard Worley	Next meeting	OPEN
AI-100B	Review reports to see if they are sufficient and importantly show the need for action to harmonize.	Subcommittee members	Next meeting	OPEN
AI-102:	Jerry & Don to look at reports already received and list in	Jerry Ramie	Next	OPEN

	a table the conflicts, similarities and identical ones	Don Heirman Harry Hodes	meeting	
AI-113:	Jerry to make corrections indicated below on the SC3 roster page	Jerry Ramie	Next meeting	Closed done 1/23
AI-114:	Jerry to write the "at risk" form letter to Mr. Berger & Mr. Popovici.. **Mr. Berger resigned 1/22/20**	Jerry Ramie	Next meeting	Closed sent 1/22
AI-115:	Harry to check the accuracy of the names on this assignment list (Table 1)	Harry Hodes	Next meeting	OPEN
AI-116:	Don to communicate with SC5 on this report Compare C63.15 to IEC 61000-4-x and provide it to Ed Hare	Don Heirman	Next meeting	OPEN
AI-117:	Dan Hoolihan to provide CISPR documents shown in RA-28 and RA-29	Dan Hoolihan	Next meeting	OPEN