C63[®]

Accredited Standards Committee C63®

Electromagnetic Compatibility <u>Subcommittee 3</u> - International Standardization

Chair: Heirman, Don
Vice Chair: Schaefer, Werner
Secretary: Ramie, Jerry (non-voting)
May 10, 2016 - 1:00 to 3:00 pm EDT
Approved Minutes

- 1. Call to Order: Chair The meeting was called to order at 1:00PM-EDT.
 - 1.1 Opening remarks and Announcements: Chair Poul Anderson is no longer the Chair, but all recognized him for his leadership in chairing the subcommittee and especially for his efforts on getting C63.12 published. The chair asked that the SC continue its important equivalency activity with vigor to coordinate the C63 standards work with International standards bodies and vice versa.
 - 1.2 Meeting logistics announcements: Host
- 1.3 Introductions: (roll call) Secretary Don Heirman, Jerry Ramie, Jeff Silberberg, Dan Hoolihan, Steve Whitesell, Al Crumm, Nate Potts, Megan McConnell, Randy Long, Vladimir Bhazanov, Michael O'Dwyer, Tom Wojtesak, Chris Dilay, Andy Griffin, John Lichtig, Werner Schaefer, Craig Fanning, Dave Zimmerman, Mark Arthurs, Dave Arnett, Mike Cibulka
- 2. Approval of the Agenda: Chair The agenda was shown and approved by acclamation.
- 3. **Presentation of <u>patent slides</u>: Secretary -** The call for essential patents was shown and no patent issues were raised.
- 4. Approval of <u>previous minutes from 2/18/16</u>: Secretary The previous Minutes from 2/18/16 were shown and approved by acclamation. Credentials required for access to the <u>SC3 private area</u>: subcomite3 43sta43
- 5. Review of <u>Subcommittee Membership</u>: Chair current SC3 roster from website: Al-16: Jerry to correct <u>SC3 roster</u> for Dilay affiliation to DoD-Spawar; Whitesell no longer with TIA
 - **5.1. New chairman Chair -** We would like to hold meetings quarterly by webinar.
 - 5.2. Review of subcommittee membership

Membership Guidelines for 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 <u>one of three consecutive scheduled meetings</u> (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. Non-voting members are urged to be present or on webinars but do not have to strictly adhere to the above guidelines that voting members have to follow.

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

Subcommittee 3 Membership Roster (updated 1 May 2016)

Name	Role within Subcommittee 3	Affiliation
Andersen, Poul	Member—Past chair	Poul Andersen Consulting
Berger, Stephen	MemberChair Subcommittee 8	TEM Consulting
Chen, Zhong	MemberChair Subcommittee 1	ETS-Lindgren
Delisi, Bob	Member	Underwriters Laboratory
Griffin, Andy	Member	CISCO Systems
	CISPR/H Technical Advisor	
Hare, Ed	Member	ARRL
Heirman, Don	MemberChair SC3; Chair	Don HEIRMAN Consultants
	CISPR, CISPR/A Deputy	
	Technical Advisor	
Hoolihan, Dan	MemberChair C63®	Hoolihan EMC Consulting
<u>Hurst, Bill</u>	Member	FCC
16	CISPR Technical Advisor	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Kuczynski, Victor	Member	Vican Electronics
Long, Randy	MemberChair Subcommittee 6	Laboratory Accreditation Bureau
Potts, Nate	Member	Liberty Labs
Schaefer, Werner	MemberVice Chair	Schaefer Associates
	CISPR/A Technical Advisor	
Dilay, Chris	MemberChair Subcommittee 2	DoD – SPAWAR
Whitesell, Steve	MemberChair Subcommittee 5	Whitesell Consulting
Wall, Art	MemberChair Subcommittee 4	Radio Regulatory Consultants
	Non-Voting Members	
Arnett, Dave	Liaison Member	Hewlett Packard
	CISPR/I Technical Advisor	
Fanning, Craig	Liaison Member	Elite Electronic Engineering
	CISPR/D Technical Advisor	
Hofmann, H.R. (Bob)	Emeritus Member SC3	Hofmann EMC Engineering
Mahn, Terry	Liaison Member	Fish and Richardson
	CISPR/B Technical Advisor	
Cibulka, Michael J	Liaison Member	Rockwell Automation
	TC77 & SC77B Technical	
	Advisor	
Yandek, Ed	Liaison Member	Edward Yandek LLC
	CISPR/F Technical Advisor	

5.3 Members at risk? - The Members who have missed three consecutive meetings (as shown in Attendance Spreadsheet below) are:

Steve Berger, Zhong Chen, Bill Hurst, Victor Kuczynski, Nate Potts, Werner Schaefer, Art Wall, Michael Cibulka, Ed Yandek,

Michael Cibulka is newly appointed as liaison member; Art Wall is newly elected SC/4 chair and hence their attendance records start from this meeting.

Al-17: Jerry to send a note to Steve Berger, Zhong Chen, Bill Hurst, Victor Kuczynski, Ed Yandek notifying them that their membership in SC3 is at risk.

Full Name	E-mail address	4/29/14	11/11/14	<u>5/5/15</u>	11/10/15	2/18/16
Andersen, Poul	anderpoul@comcast.net	Χ	Χ	X	Χ	а
Berger, Stephen	Stephen.Berger@ieee.org					
Chen, Zhong	Zhong.Chen@ets-lindgren.com		Χ			
	vladimir.bazhanov@ericsson.com					Χ
Griffin, Andy	agriffin@cisco.com	Х	Χ		Χ	X
Hare, Ed	W1RFl@arrl.org	Х	Χ		Х	
Heirman, Don	d.heirman@ieee.org	Х	Χ	X	Х	X
Hoolihan, Dan	danhoolihanemc@aol.com	Х	Χ	X	Х	
Hurst, Bill	William.hurst@fcc.gov					
Kuczynski, Victor	vican@on.aibn.com		X			
Long, Randy	rlong@l-a-b.com			Χ	X	
Potts, Nate	npotts@liberty-labs.com		X			
Schaefer, Werner	wernerschaefer@comcast.net					
Dilay, Chris	chris.dilay@navy.mil	Χ	Χ	X	Χ	
Whitesell, Steve	swhitesell@ieee.org		Х	Х	Χ	
Wall, Art	awall@atlanticbb.net					
	Non-voting members					
Arnett, Dave	dave.arnett@hp.com				Х	
Fanning, Craig	cfanning@elitetest.com				X	X
Hofmann, H.R.	hrhofmann@att.net					X
Mahn, Terry	mahn@fr.com					Χ
Cibulka, Michael	mjcibulka@ra.rockwell.com					
Yandek, Ed	EYandek@aol.com					
Ramie, Jerry	jramie@arctechnical.com	Х	Х	Х	Х	X
Daliai Dah	Non-members					
DeLisi, Bob		X	.,		.,	
Silberberg, Jeff		X	Х		X	
O'Neil, Janet		X	v			
Shellman, Marcus	_	X	X			
Moongilan, Dheena	d	X	X	v		
Hackett, Beth		X	X	Χ		
Zimmerman, Dave		X	v	v		
Duncanson, Mike		X	X	X		
O'Dwyer, Mike		X				
Kaute, Richard		X				
Southworth, Dave		Х	v			
Carrigan, Ken			X			
Wojtaszek, Tom			X	X	X	
Schaefer, David			X			
Mills, Jim			X	v	v	
Moore, Brad				X	X	
Attayi, Masud					X	

5.4 Approval of new members— none

6. Review of Scope and Tasks - The Scope, Duties and Tasks statement from the website:

6.1 Scope:

Subcommittee 3 provides a forum for comparing international standards activities to ASC C63[®] membership standards activities and makes recommendations to the C63[®] Main Committee on possible US positions on international EMC matters, to facilitate harmonization of national and international standards, considering US regulatory as well as commercial requirements. Subcommittee 3 may make recommendations to the C63[®] Main Committee about introducing the work of C63[®] to the US National Committee Technical Advisory Groups for submission to international standards committees.

6.2. **Approval of Scope** (above) - The Scope was approved by acclamation.

6.3 Links

- Subcommittee 3 and Working Group Membership List
- Standards Developed by Subcommittee 3
- Approved Meeting Minutes
- Meeting Schedule
- Generic Agenda

6.3.1 Duties:

SC 3 shall review international EMC standards for technical issues that **could** affect C63[®] membership standards development. These reviews **could** lead to recommendations for action by C63[®] to promote harmonization of C63[®] standards with international standards. Via the SC 3 liaison representatives of the USNC TAGs for international standards organizations with EMC activities (e.g., CISPR, TC77, ISO), information is shared in both directions with the following expectation:

To take action in the form of recommendations to the parent committee (C63[®]) of possible US positions on international EMC matters with the focus of striving for harmonization of national and international standards, considering US regulatory as well as commercial requirements. Conversely, recommendations can be made to the parent committee for introducing the work of C63[®] to the USNC TAGs.

Maintain ANSI C63.12 - American National Standard Recommended Practice for Electromagnetic Compatibility Limits and Test Levels

Approval of Duties

Duties as shown above and modified in red font were approved by the SC3 membership by acclamation.

6.3.2 General Tasks:

- 1) For each PINS already in force or newly-prepared by C63[®] or its subcommittees, SC 3 shall prepare a statement on the relation of the proposed or existing standard to existing international standards or those in development.
- 2) When requested by the parent committee to review a specific C63[®] member standard, SC 3 shall prepare a statement on the relation of the proposed or existing member standard to existing international standards or those in development.

- 3) In cases where harmonization with an international standard is not considered appropriate, SC 3 shall summarize the differences in technological applications, government regulations, or practical considerations that justify differences between US standards and international standards.
- 4) SC 3 shall make recommendations to C63[®] regarding which international standards should be adopted directly as US national standards.
- 5) SC 3 may recommend to C63[®] that the standards work of C63[®] be used as input (via the liaisons with the USNC TAGs) to appropriate international standards for which the liaison members are responsible.

7. Analysis of equivalencies between ASC-C63® and IEC/IEEE standards

The Chair went through each row updating the information. The purpose of this matrix is to show where there are opportunities for C63.4 documents to serve as references or inputs to the IEC document shown in the 4th column. Conversely, it shows where there may be material to enter or reference in the C63 documents shown in the first column.

C63 [®]	SC	Subject	International	Review Leader
Document			Document	(WG Chair)
C63.4	SC1	Measurements	CISPR 16-2-X	Heirman
			CISPR 32	
C63.5	SC1	Antenna Calibration	CISPR 16-1-6	DeLisi
C63.9	SC5	Office Equipment	IEC 61000-4-3	Griffin
		Immunity	IEC 61000-4-	
		-	39	
C63.15	SC5	Immunity	IEC 61000-4-X	Heirman
		-	CISPR 35	
C63.16	SC5	ESD	IEC 61000-4-2	Whitesell
C63.23	SC1	Uncertainty	16-4-2	DeLisi
C63.24	SC5	Generic On-Site Meas.	IEEE 473	Heirman
C63.25	SC1	Test Site Validation	CISPR 16-1-4	Sigouin
C63.10	SC4	Licensed Transmitters	ETSI wireless	Wall
			requirements	
C63.26	SC4	Unlicensed transmitters	ETSI wireless	Wall
			requirements	
C63.27	SC7	Co-existence	IEC 62657-2	Berger
C63.28	SC2	Best Practices	No equivalent	Dilay

The following relate to the discussion of the material in the above matrix

Al-18: Heirman and Arnett to review anything that can be moved between C63.4 and CISPR 32.

Al-19: DeLisi to notify us when C63.5 is published and how it relates to CISPR 16-1-6

Al-20: Griffin will look at modulation in the applied immunity signal and identified in C63.9 with potential for introduction into SC77B (IEC 61000-4-3) through the US National Committee.

Al-21: Heirman and Arnett to review anything that can be moved between C63.15 and CISPR 35.

Al-22: Whitesell / Cibulka / Worley to develop a proposal for the USNC to take into IEC SC77B on ESD from the newly published C63.16. It was noted that the new material in C63.16 such as EDS when PCs plug into docking stations can be one of the main inputs to changing 61000-4-2.

AI-23: Heirman / DeLisi to prepare for the CISPR-A USNC TAG to add the details of applying the statistical approach to CISPR 16-4-2 on measurement uncertainty.

The C63.24 WG leadership will meet with IEEE-473 leadership in Ottawa to discuss a path forward for complimentary work on in-situ measurements and application. Dave Arnett has indicated that CISPR I WG2 is

looking into a committee draft for in-situ measurements and may be able to work with C63.24WG.

Dan S. has indicated all work on NSA is suspended because it is being updated in C63.4a Ltd. Amendment. Instead it will focus on site validation in C63.25 above 1 GHz with focus on the time domain approach.

A report will be available C63.10 and C63.26 at our next webinar.

A balloting group will be formed to consider C63.27.

Al-24: Mr. Berger to provide a report on C63.27 at our next meeting.

Mr. Dilay noted that C63.28 on EMC best practices will be used in developing MIL and commercial Standards. It is geared towards product developers or managers as a guideline. Verification testing is emphasized.

New standards for consideration:

C63.29-draft	Lighting products	<u>SC 4</u>	Mendoza,	<u>C63.29</u>	New standard. Draft being
Learn more			<u>Ernesto</u>	<u>PINS</u>	written.
C63.30-draft	Wireless Power	<u>SC 4</u>	Thul, Travis	<u>C63.30</u>	New standard. Draft being
Learn more	Transfer Products			<u>PINS</u>	written.
C63.31-draft	ISM equipment (FCC	<u>SC 4</u>	Walton, Derek	<u>C63.31</u>	New standard. Draft being
Learn more	MP-5)			<u>PINS</u>	written.

Publication status of the above three C63 documents to determine the appropriate time to review in more depth their content with that of international equivalents to lead to harmonization where possible.

AI-25: Heirman / Mendoza to go over CISPR14-1 & 15-1 for consideration for use in C63.29.

AI-26: Heirman / Thul to go over CISPR 11, 14-1 & 15-1 for consideration for use in C63.30.

AI-27: Heirman / Walton to go over CISPR 11, 14-1 & 15-1 for consideration for use in C63.31.

AI-28: Fanning / Thul / Heirman to schedule 3-way <u>CISPR/SAE task group</u> telecon/webinar to discuss getting more inputs from CISPR and SAE.

Note while Heirman is shown in the above 4 action items, the equivalency action is with the chairs of the WGs for C63.28, C63.29, C63.30, and C63.31 (C63.31 is to place the work of the FCC MP-5 into a C63 standard)

The following was shown without further discussion

C63 Standard	Publication status
C63.4 (Heirman)	Published in 2014
C63.4a (Heirman)	Published by November 2016
C63.5 (DeLisi)	2006 edition under revision
C63.9 (Griffin)	2008 edition; PINS to be approved
C63.15 (Heirman)	2010 edition; PINS to be approved
C63.23 (DeLisi)	2012 edition not under revision
C63.24 (Heirman)	New standard (joint task with IEEE 473)
C63.25 (Sigouin)	New standard under preparation
C63.26 (Wall)	2013 edition not under revision

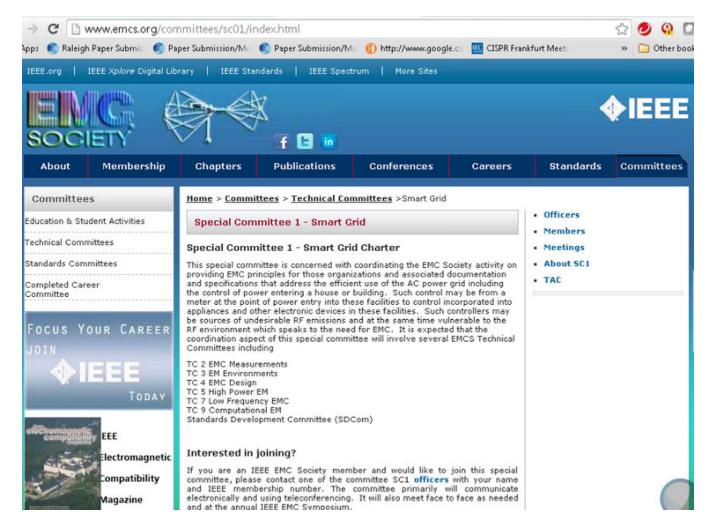
DeLisi noted that 2017 is the target for C63.5

The <u>PINS for C63.9</u> was approved in the Subcommittee 5 for submission to the Main committee. C63.15 PINS should be ready for the next Main meeting in Costa Mesa.

- C63.27- Discuss after publication Berger SC7 has voted to submit C63.27 to the Main for balloting.
- C63.28- Discuss after publication Dilay draft in March 2017
- C63.29- Discuss after publication Mendoza absent
- C63.30- Discuss after publication -Thul absent
- C63.31- Discuss after publication Walton absent
 - 8. Further Standards Analysis
 - 8.1 ASC-C63[®] member standards that need possible SC3 analysis All Nothing presented
 - 8.2 Issues from IEC (incl. CISPR & TC77), ISO and other international standards activity potentially affecting US standards development: Chair None was reported
 - 9. Old Business and discussions
 - 9.1 Smart Grid Proposals: Heirman Special Committee 1 on Smart Grid

The chair introduced where the Smart Grid activity is in IEEE EMC Society. Here is what you see when you type in this URL:

http://www.emcs.org/committees/sc01/index.html



10. New Business:

10.1 Status of website The amended scope needs to be placed on the website by the secretary

10.2 Others? None were reported

11. Review of the action items from previous meetings: Secretary

Consolidated Action Items from 2/18/16 Webinar Meeting of SC3

Al #	Task	Responsible party	Due Date	Status
Al-2:	Don Heirman to pursue whether there are things in C63.4 that it would be advantageous to include in CISPR 32 and vice-versa. The question of what to display on a video screen when making measurements is of particular interest	Don Heirman	CLOSED	C63.4 WG is considering a) video display B) site validation
Al-6:	Approved 11/10/15 Minutes posted under "Approved SC3 Meeting Minutes" in PDF	Jerry Ramie	5/10/16	CLOSED 2/21/16
Al-7:	Jerry to add Michael Cibulka to SC3 roster page	Jerry Ramie	5/10/16	CLOSED posted 2/18
Al-8:	Jerry to start Attendance Spreadsheet with previous attendance populated from 2014 forward	Jerry Ramie	5/10/16	CLOSED sent 2/18
Al-9:	Jerry to send reminder to all SC3 Members to review Scope statement by 4/15/16	Jerry Ramie	4/15/16	CLOSED sent 3/2

AI-10:	At the May meeting, all SC chairs will be asked to present their SC Scopes for C63 Main Committee approval	All SC Chairs	CLOSED	
Al-11:	Don asked for a co-leader for those standards activity noted in (6) above with his name assigned in the past.	All SC Chairs	CLOSED	
Al-12:	Jerry to check status of "limited amendment" PINS for C63.4 submitted by Don. (circulated to SC1 yet?)	Jerry Ramie	5/10/16	CLOSED sent 2/18
AI-13:	Jerry to pull Annex C out of the new draft of C63.15 and post it so SC3 members can use it as an example of how to prepare for seeking releases.	Jerry Ramie	5/10/16	CLOSED posted 2/18
Al-14:	Jerry to send Craig a copy of the most recent draft of C63.15	Jerry Ramie	5/10/16	CLOSED sent 2/18
AI-15:	Jerry to post the two slides that showed the C63 [®] standards that apply to emission measurements and immunity testing for Smart Grid applications	Jerry Ramie	5/10/16	CLOSED Docs sent to Don H.

12. Time and place of next meetings: Chair Webinar: 7 September 1500 to 1700 EDT

JOIN WEBEX MEETING

https://c63.webex.com/c63/j.php?MTID=mfb4f051a048fac24e060b18bb71e6f77

Meeting number: 629 574 477 Meeting password: knmmYZe7

JOIN BY PHONE

1-650-479-3208 Call-in toll number (US/Canada)

Access code: 629 574 477

Face to Face meeting: 8 November in Costa Mesa, CA

13. Closing remarks and Adjournment: Chair - Thanks for your efforts and the meeting was adjourned at 2:51PM-EDT

End of Meeting

Consolidated Action Items from 5/10/16 Webinar Meeting of SC3

Note that some of the actions showing Heirman as part of an action with another will be the ultimate responsibility of the others as Heirman moves to chair duties after initial help with the action items.

Al #	Task	Responsible party	Due Date	Status
AI-16:	Jerry to correct <u>SC3 roster</u> for Dilay affiliation to DoD-Spawar; Whitesell no longer with TIA	Jerry Ramie	9/7/16	CLOSED posted 5/28
AI-17:	Jerry to send a note to Steve Berger, Zhong Chen, Bill Hurst, Victor Kuczynski, Ed Yandek notifying them of membership risk.	Jerry Ramie	9/7/16	CLOSED sent 5/28
AI-18:	Heirman and Arnett to review anything that can be moved between C63.4 and CISPR32.	Don Heirman Dave Arnett	9/7/16	
AI-19:	DeLisi to notify us when C63.5 is published and how it relates to CISPR 16-1-6	Bob DeLisi	9/7/16	
AI-20:	Griffin will look at modulation in C63.9 with potential for introduction into SC77B through the US National Committee.	Andy Griffin	9/7/16	

AI-21:	Heirman and Arnett to review anything that can be moved between C63.15 and CISPR35.	Don Heirman	9/7/16
AI-22:	Whitesell / Cibulka / Worley to develop a proposal for TC77B on C63.16	Steve Whitesell Mike Cibluka Rich Worley	9/7/16
AI-23:	Heirman / DeLisi to prepare for the CISPR-A TAG adding statistical way of measurement uncertainty	Don Heirman Bob DeLisi	9/7/16
AI-24:	Mr. Berger to provide a report on C63.27 at our next meeting	Steve Berger	9/7/16
AI-25:	Heirman / Mendoza to go over CISPR14-1 & 15-1 for consideration for use in C63.29	Don Heirman Ernesto Mendoza	9/7/16
AI-26:	Heirman / Thul to go over CISPR 11, 14-1 & 15-1 for consideration for use in C63.30.	Don Heirman Travis Thul	9/7/16
AI-27:	Heirman / Walton to go over CISPR 11, 14-1 & 15-1 for consideration for use in C63.31.	Don Heirman Derek Walton	9/7/16
AI-28:	Fanning / Thul / Heirman to schedule 3-way CISPR/SAE task group telecon/webinar to discuss getting more inputs from CISPR and SAE	Craig Fanning Travis Thul Don Heirman	9/7/16