

Meeting Minutes

ANSI-Accredited Standards Committee C63[®]
Electromagnetic Compatibility

SUBCOMMITTEE 2 – E3 Terminology Definitions and EMC Best Practices

Wednesday, 02 May 2018, 1500 to 1700
IEEE Headquarters, Piscataway, NJ

1. **Call to Order.** Mr. Marcus Shellman, SC2 Chairman, called the meeting to order.
 - 1.1. **Opening Remarks:** The chairman welcomed everyone to the meeting and recognized the SC2 officers.
 - 1.2. **Meeting Logistics Announcements:** The chairman addressed meeting arrangements for the afternoon sessions.
 - 1.3. **Introductions:** Mr. Duncanson, SC2 Secretary conducted the roll call to record SC2 membership attendance and determine the establishment of a quorum. The meeting attendee list appears in Attachment 1.
 - 1.4. **Quorum:** Based on the number of SC2 member attendees the Secretary determined that a quorum was achieved.
2. **Review and Adoption of the Agenda.** The chairman presented the agenda, highlighting key areas of significance for the meeting. Motion to approve the agenda as written was passed by voice vote. See Attachment 2.
 - 2.1. **Approval of the Previous Minutes:** The chairman displayed draft minutes of the SC2 meeting held on 08 November 2017 at ETS Lindgren, Austin, TX. The minutes were approved as written.
 - 2.2. **Review of the Patent Slides:** The C63[®] Patent Policy slides were presented as they appear on the C63[®] public website and reviewed as required. There were no objections to the patent policy.
3. **Review of Subcommittee Membership.**
 - 3.1. **Membership.** The chairman displayed the SC2 membership as it appeared on the agenda, stating that after review of the membership list on the C63[®] website that some corrections are needed. He noted the following needed changes: Bob Hoffman should be removed from the membership list as was determined at the last meeting; also, Art Wall is no longer chairman of SC4

and should be replaced by Bob Delisi. He took an action to provide Jerry Ramie with the needed membership list changes. (see Action Item 20180502-1)

- 3.2. **Members at Risk.** The Chairman displayed the Member Attendance Log, with members at risk highlighted on the display. He addressed members at risk noting that Vladimir Bazhanov, chair of SC7 who was not in attendance, is currently at risk. He took an action to notify Mr. Bazhanov of his membership status. (see Action Item 20180502-2)
- 3.3. **Consideration of new members.** The chairman addressed the consideration of new members for SC2 stating that he has not received any new applications for membership. No new members have been added to the SC2 roster at this time.
4. **Scope and Duties.** The SC2 Scope was presented for review. The chairman stated his desire to modify the Scope to remove the last sentence, which identifies that SC2 maintains ANSI C63.14 and ANSI C63.28. After discussion there was agreement among attendees that the standards projects of the subcommittee belong under the subcommittee “Duties,” and should be removed from the scope. A motion to amend the SC2 Scope was approved by voice vote. The chairman will provide Jerry Ramie with the new wording for the SC2 Scope. (see Action Item 20180502-3)
5. **SC2 Status and Working Group Reports.**
 - 5.1 **Working Group 1 Report.** Mr. Duncanson provided an update of WG1 activities since the last meeting, noting that we are coming near to the end of the five year update period for ANSI C63.14-2014. He stated that the cutoff for the inclusion of new terms and definitions would occur in the fall. He displayed a flow diagram of the process and elaborated on the rules for terms and definitions inclusion distinguishing the treatment of those sourced from International standards, ANSI C63 standards, DoD standards, and individual terms and definitions developed within ANSI C63[®]. He discussed the SC2 coordination process for C63[®] standards noting the new C63[®] process rules change which mandates a SC2 terms/definitions review for all draft C63[®] standards prior to entrance to the balloting process. He went on to provide an SC2 coordination status update and showed the seven C63[®] standards addressed by SC2 since 2014. He addressed current coordination efforts noting that the initial review of draft ANSI C63.25.1 was just completed and the review of terms and definitions in draft ANSI C63.19 is just getting under way. He also identified the remaining draft standards that could potentially come up for review within the next year and possibly prior to the cutoff for inclusion in the projected ANSI C63.14-2019. He addressed the review of

military standards published since 2014 and inclusion of their terms and definitions. He provided a partial list of DoD standards to be evaluated during the current update process and additionally addressed updating of the Informative Annex of International terms.

He displayed a C63.14 change summary, 2014 – 2019, explaining that this extensive list is a running log that itemizes all the proposed changes to the document along with any unresolved issues. He noted that the summary will continue to be populated until the cutoff date for the inclusion of new terms and definition to draft .14. At that time plans are to distribute it to SC2 members for review, to address any open questions and work out remaining issues.

He displayed the ANSI C63.14 update schedule and pointed out key dates in the development process, noting that the deadline for the entry of new terms and definitions to the draft will be the end of August 2018. Plans are to bring the revised draft before the subcommittee for review by October 2018. The projected date for initiation of the ballot process will be in April 2019. Publication of ANSI C63.14-2019 is projected for October 2019.

- 5.2 **Working Group 2 Report.** Mr. Dilay provided a status update for the draft ANSI C63.28-20XX, Best Practices Guide development, noting that there has been a recent change in the focus of the effort. He explained that the working group’s intention is to revise the general EMC best practices focus to orient the effort to application of the ANSI C63[®] series of standards, stating that this change to the scope of the effort should make it more relevant to the C63[®] committee. He noted that the desired change would require changes to the .28 title and PINS. He displayed the proposed updates to the PINS, which specify guidance in the application of C63[®] standards for EMC compliance. Mr. Heirman questioned whether the word, “compliance,” should be part of the title since the topics covered address more than just compliance. After discussion it was agreed that the working group 2 would develop a .28 title change which does not include the word, “compliance.” (see Action Item 20180502-4)

Mr. Dilay addressed the needed changes in the PINS to comport with the change in focus of the effort and stated that although the scope of the effort has changed, there is no change to the stakeholders of the effort. Mr. Hoolihan noted that since the PINS change would not result in a change in stakeholders, that a vote by the C63[®] Main Committee on the change would not be needed. They merely need to be informed of the word changes agreed to by the subcommittee. (see Action Item 20180502-5)

In detailing the shift to the application of the C63[®] standards Mr. Dilay noted that all published ANSI C63[®] standards will be included in .28, and whereas before, the working group was considering comparisons between DoD and commercial EMC standards, the focus now will be in comparing ANSI C63[®] standards against other commercial, DoD, and International EMC standards.

He informed the group that WG2 is soliciting the help of the standards subcommittees working group chairs. He displayed a questionnaire to be distributed to each one and described how they are tailored to solicit supplementary information about the subject matter and topics addressed in the individual standards, including lessons learned and conformity to other commercial, International or DoD EMC standards. He stated that WG2 is open to suggestions to improve effectiveness of the questionnaires. Further discussion on the topic is planned for the next SC2 WebEx meeting. (see Action Item 20180502-6)

He displayed the current working draft .28 and went through the current sections detailing the treatment of each of the C63[®] standards under their specific topic area commensurate with the overall theme of EMC Best Practices. Mr. Shellman noted the relationship between the standards, as they appear in the table of contents, and discussed the role of the questionnaires to standards working group chairs as a critical means of providing relevant content, such as lessons learned or conformity to other standards, etc., to augment the standard's description, purpose and intended use. A significant amount of discussion followed with recommendations and suggestions and to clarify questions on needed SC support, with positive responses in general from attendees on the new direction of the effort.

6. **Other Old Business.** The chairman noted the SC2 action to coordinate with SC3 stating his intent to attend the SC3 meeting tomorrow.
7. **New Business.** Mr. Heirman brought up the need for assistance to SC5 to formulate a definition for the term, "office equipment," providing several examples of its application and stating that it has come up in regards draft C63.9, which addresses immunity characteristics of these devices. Mr. Shellman took an action for SC2 WG1 to review .9 for context and address formulation of a definition. (see Action Item 20180502-7)

Mr. Hodes addressed the need for assistance to SC4 to formulate a definition for the term, "vehicle," for ANSI C63.30, in the context of wireless power transfer. He stated that a unique definition is needed apart from usual treatment of the term that will help bound the scope of the standard. He also noted that the Europeans are working on the definition, as well, in coordination with C63[®]. Mr. Shellman agreed to take an action to support the effort. (see Action Item 20180502-8)

Mr. Hoolihan raised a question about the advent of ANSI C63.14, when it was initiated and how the transition from MIL-STD-463 took place. In response, Mr. Shellman recounted the "standardization reform," period within the DoD in the 1990s when only standards considered to be "performance-based" were allowed to continue. He stated that during that time an agreement between the DoD and ANSI C63[®] was reached resulting in transition of the content of MIL-STD-463A into the new ANSI-C63.14. Mr. Hoolihan then alluded to his attempts to find that information

somewhere in the current C63.14. He recommended that a place be provided somewhere in the forward of the document to impart this important historical information. Mr. Duncanson brought up the related matter of retaining pertinent definitions in .14 that are attributed to MIL-STD-463A, alluding to the SC2 decision to remove definitions attributed to standards that no longer exist. He argued that to do so in this case would impact a significant number of valuable EMC definitions that should be retained. He recommended that maybe the definitions in question could remain and be re-attributed to ANSI C63.14-2004, the initial version of the standard. After discussion, it was universally agreed that historical reference to MIL-STD-463 and the treatment of retained definitions attributed to it should be addressed in the front matter of the standard. WG1 will make a final determination on how to address terms and definitions attributed to MIL-STD-463. Mr. Shellman took an action for WG1 to address both historical aspects of .14 in the forward of draft ANSI C63.14-2019. (see Action Items 20180502-9 and 20180502-10)

8. **C63® Newsletter Input.** Mr. Shellman stated that preparation of the newsletter input is pending, but would be provided to Mr. Zimmerman.

9. **Action Item Review.**

9.1 **Newly assigned actions appear below:**

#	<u>ACTION ITEM</u>	<u>Disposition</u>
20180502-1	Mr. Shellman to provide Jerry Ramie with changes to SC2 membership roster for posting to the C63® website.	11/27/2018
20180502-2	Mr. Shellman to contact Vladimir Bazhanov, chair of SC7 about his at risk membership status based on SC2 meeting attendance.	11/27/2018
20180502-3	Mr. Shellman to provide Jerry Ramie with word changes to the SC2 Scope as agreed upon at the meeting.	11/27/2018
20180502-4	SC2 WG2 to develop title change for draft ANSI C63.28 which removes the word, "Compliance."	11/27/2018
20180502-5	Mr. Shellman to inform the C63 Main Committee of SC2 agreed upon word changes to the ANSI C63.28 PINS.	05/04/2018
20180502-6	Mr. Shellman to distribute ANSI C63.28 questionnaires to C63® standards working group chairs to obtain pertinent "lessons learned" and other data to inform preparation of ANSI C63.28.	ASAP
20180502-7	SC2 WG1 to review draft ANSI C63.9, coordinate with SC5 on development of a definition for the term, "office equipment."	11/27/2018
20180502-8	SC2 WG1 to coordinate with SC4 on development of a definition for the term, "vehicle," as the term will be applied in draft ANSI C63.30, within the context of wireless power transfer.	11/27/2018
20180502-9	SC2 WG1 to make final determination on how to address attributions in draft ANSI C63.14-2019 for definitions sourced from MIL-STD-463A.	11/27/2018
20180502-10	SC2 WG1 to prepare forward material for draft ANSI C63.14-2019 that historically documents the supersession of MIL-STD-463A by ANSI C63.14-2004 and explains the disposition of 463A attributions.	11/27/2018
20180502-11	Mr. Shellman to prepare C63® Newsletter input and provide to Mr. Zimmerman for publication.	ASAP

9.2 **Action items from the previous meeting were reviewed and resolved as shown below:**

#	<u>ACTION ITEM</u>	<u>Disposition</u>
20171108-1	Mr. Dilay to bring before the Steering Committee the SC2 membership guideline change to allow SC Chairs to designate an alternate to attend SC2 meetings for the purpose of maintaining their membership in good standing.	CLOSED
20171108-2	Mr. Dilay to provide Jerry Ramie with identified updates to the SC2 meeting agenda template, to reposition as discussed: (1) the action item review; and (2) the review and acceptance of minutes of the previous meeting.	CLOSED
20171108-3	Mr. Dilay to bring before the Steering Committee the proposal for a C63 [®] process rules change, to make the SC2 terms/definitions review and resolution of all related issues entrance criteria for the C63 [®] balloting process.	CLOSED
20171108-4	Mr. Ramie to update the SC2 membership list and other information on the C63 [®] website upon receipt needed changes from Mr. Dilay.	CLOSED
20171108-5	C63 [®] subcommittee chairs to coordinate with SC2 on development of their terms and definitions.	CLOSED

10. **Time and place of next meeting.** The next SC2 meeting is scheduled for 26 November to 30 November at NIST, Boulder, CO.
11. **Adjournment.** The SC2 meeting was successfully completed as scheduled. The chairman adjourned the meeting at 1700.

Attachment 1

**SC2 Meeting Attendance List (02 May, 2018)
IEEE Headquarters, Piscataway, NJ**

NAME	TITLE	EMAIL
Marcus Shellman	Chair, SC2	marcus.shellman.civ@mail.mil
Chris Dilay	Vice Chair, SC2	chris.dilay@navy.mil
Michael Duncanson	Secretary, SC2	michael.duncanson@aecom.com
Dan Hoolihan	Chair, C63 [®]	danhoolihanemc@aol.com
Jerry Ramie	Secretary, C63 [®]	jramie@arctechnical.com
Zhong Chen	Chair, SC1	zhong.chen@ets-lindgren.com
Don Heirman	Chair, SC3	d.heirman@ieee.org
Bob Delisi	Chair, SC4	bob.delisi@ul.com

Ed Hare	Chair, SC5	W1RFI@arrl.org
Randy Long	Chair, SC6	rlong@anab.org
Stephen Berger	Chair, SC8	stephen.berger@ieee.org
Janet O'Neil	Member	j.n.oneil@ieee.org
Harry A. Hodes	Member	harry.hodes@baclcorp.com
Jeffery Silberberg	Observer	Jeffrey.silberberg@fda.hhs.gov
Doug Kramer	Guest	douglas.kramer@ets-lindgren.com
Baleys Ayyaswamy	Guest	n/avail

Attachment 2

C63[®] Accredited Standards Committee C63[®]

Electromagnetic Compatibility

Subcommittee 2: E3 Terminology Definitions and Best Practices

Chair: Marcus Shellman Vice Chair: Chris Dilay Secretary: Michael Duncanson

May 02, 2018; 3:00 PM – 5:00 PM - EDT

IEEE Headquarters
Piscataway, NJ

Meeting Agenda

1. Call to Order: Chair

- 1.1 Announcements: Chair's remarks -**
- 1.2 Meeting logistics announcements: Host**
- 1.3 Introductions: Secretary – roll call**

Subcommittee 2 Membership Roster

Name	Role in SC	Affiliation
Marcus Shellman	Chair Subcommittee 2	DoD-Joint Spectrum Center (JSC)
Chris Dilay	Vice Chair Subcommittee 2	SPAWAR Systems Center, Pacific
Michael Duncanson	Secretary Subcommittee 2	DoD-Joint Spectrum Center (JSC)
Tomasz Wojtaszek	SC2 Web Coordinator	SPAWAR Systems Center, Pacific
Dan Hoolihan	C63 [®] Chair	Hoolihan EMC Consulting
Zhong Chen	Chair Subcommittee 1	ETS - Lindgren
Don Heirman	Chair Subcommittee 3	Don HEIRMAN Consultants
Bob DeLisi	Chair Subcommittee 4	Underwriters Laboratories
Ed Hare	Chair Subcommittee 5	ARRL
Randy Long	Chair Subcommittee 6	ANSI-ASQ National Accreditation Board d.b.a Laboratory Accreditation Bureau
Vladimir Bazhanov	Chair Subcommittee 7	VB Laboratory Services, LLC
Stephen Berger	Chair Subcommittee 8	TEM Consulting
Harry Hodes	Member	Bay Area Compliance Laboratories Corp.
Janet O'Neil	Member	ETS - Lindgren

Guests and Observers: (non-voting)

- 1.4 Determination of Quorum: (50% of roster + 1) constitutes a quorum.**

2. Approval of the Agenda: Secretary

2.1 Approval of the previous Minutes - [Minutes of the previous meeting](#)

2.2 Review of the [patent slides](#) –

3. Review of [Subcommittee Membership](#) - Report any errors to the ASC-C63® 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.

Working Groups:

For an individual to remain a member of a Working Group, active participation is required. Should a member fail to attend at least one of three consecutive scheduled meetings (in person or via web conference (when used)) their membership in that Working Group may be at risk. Individual Working Groups may establish additional participation criteria and/or modify this requirement. (insert Member Attendance Log as below)

Member Attendance Log:

Name	Role	05/05/2015	11/10/2015	05/11/2016	11/08/2016	05/09/2017	11/08/2017
Marcus Shellman	SC2 Chair	X	X	X	X	X	X
Chris Dilay	SC2 Vice Chair	X	X	X	X	X	X
Michael Duncanson	SC2 Secretary	X	X	X	X	X	X
Tomasz Wojtaszek	SC2 Webmaster	X	X	X	X	X	X
Dan Hoolihan	C63 Chair	X	X		X		X
Zhong Chen	SC1 Chair						
Don Heirman	SC3 Chair	X	X	X		X	X
Bob DeLisi	SC4 Chair						X
Ed Hare	SC5 Chair					X	X
Randy Long	SC6 Chair	X	X	X	X		X
Vladimir Bazanov	SC7 Chair			X			
Stephen Berger	SC8 Chair			X			
Janet O'Neil	Member			X	X		X
Harry Hodes	Member			X			

Any members at risk? These members are at risk: (send letter to each member at risk)

3.2 Consideration of new members? [Application for C63® Subcommittee Membership](#)

4. Approval of [Scope and Duties](#)

Scope

Subcommittee 2 (SC2) is responsible for developing electromagnetic environmental effects (E3) terminology for C63® publications, and harmonizing the use of E3 terms with U.S. military and international standardization bodies. SC2 is also responsible for developing guidelines and best practices for application of C63®, other commercial, and U.S. military E3 standards. The subcommittee will maintain ANSI C63.14, "American National Standard, Dictionary of Electromagnetic Compatibility (EMC) including Electromagnetic Environmental Effects (E3)" and ANSI C63.28, "American National Standard, Guide for Best Practices for EMC".

5. Working Group reports

5.1 C63.14 – Definitions - Duncanson

5.2 C63.28 – Best Practices for Electromagnetic Compatibility - Dilay

5.3 Coordination with other ASC-C63® Subcommittees on terms/definitions

SC1: C63.2, [C63.4](#), [C63.5](#), [C63.7](#), C63.22, C63.23, [C63.25](#), C63.27

SC3: C63.12

SC4: C63.10, [C63.26](#), C63.29, C63.30, C63.31

SC5: C63.9, [C63.15](#), [C63.16](#), C63.20, C63.24

SC6: C63.8, C63.11

SC7: C63.17, C63.27

SC8: C63.18, C63.19

6. Other Old Business: Chair

6.1 Written reports -

6.2 Coordination with SC2 prior to standard balloting – Process change for standards publication to include draft submission to SC2 for review of definitions prior to the balloting process.

6.3 Coordination with SC3 for harmonization - Before any Working Group draft can be submitted to the Subcommittee for approval, the document must be provided to the SC3 Chair for evaluation and coordination of any harmonization effort.

7. New Business: Chair

8. [C63.org](#) website use and updates: Secretary - We normally post documents to the [SC2 protected area](#). If any SC or WG needs help with this posting, a Technical Secretary is available to assist.

9. Review of the Action Items: Secretary

- 9.1 Review of Action Items from this meeting: Secretary -**
- 9.2 Review of Action Items from previous meeting -**
- 9.3 Review Newsletter input:**

10. Time and place of next meeting: Chair

11. Closing remarks and Adjournment: Chair

***** End of Meeting

Attachment 3

SC2 Membership List
Chairman – Chris Dilay
ASC C63[®] / SC2 Membership Roster

NAME	TITLE	EMAIL
Mr. Chris Dilay	Chair, SC2 (WG1/WG2)	chris.dilay@navy.mil
Mr. Marcus Shellman	Vice Chair, SC2 (WG1/WG2)	marcus.shellman.civ@mail.mil
Mr. Michael Duncanson	Secretary, SC2 (WG1/WG2)	michael.duncanson@aec.com
Mr. Tomasz Wojtaszek	Web Coordinator, SC2 (WG1/WG2)	tomasz.wojtaszek@navy.mil
Mr. Dan Hoolihan	Chair, C63 [®] (WG2)	danhoolihanemc@aol.com
Mr. Zhong Chen	Chair, SC1	zhong.chen@ets-lindgren.com
Mr. Don Heirman	Chair, SC3 (WG2)	d.heirman@ieee.org
Mr. Art Wall	Chair, SC4	artwall43@gmail.com
Mr. Ed Hare	Chair, SC5	WIRFI@arrl.org
Mr. Randy Long	Chair, SC6	rlong@anab.org
Mr. Vladimir Bazhanov	Chair, SC7	vladimir.bazhanov@ericsson.com
Mr. Stephen Berger	Chair, SC8	stephen.berger@ieee.org
Mr. Harry Hodes	Member (WG1/2)	harry.hodes@baclcorp.com
Mr. Victor Kuczynski	Member	vican@on.aibn.com
Ms. Janet O'Neil	Member	j.n.oneil@ieee.org