

Meeting Minutes
ANSI-Accredited Standards Committee C63[®]
Electromagnetic Compatibility

SUBCOMMITTEE 2 – E3 Terminology Definitions and EMC Best Practices

Wednesday, 28 November 2018, 1500 to 1700
NIST, Boulder, CO.

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:** The chairman 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. The approved agenda will be provided to Ed Hare along with the SC2 report to the main committee. (see Action Item 20181128 -1)
 - 2.1. **Approval of the Previous Minutes:** The chairman displayed draft minutes of the SC2 meeting held on 02 May 2018 at IEEE Headquarters, Piscataway, NJ. 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 the following changes were required:

- Tomasz Wojtaszek should be removed from the membership list as he is no longer participating in the C63[®]
- Bob Delisi should replace Art Wall as the chairman of SC4.

The action remains open from the previous meeting for the chairman 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, which highlights members at risk. He noted that there were no members at risk at this time.

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. The SC2 membership list appears in attachment 3.

4. **Scope and Duties.** The SC2 Scope was presented for review as it appears on the C63[®] website. The chairman noted that amendments approved at the last meeting to separate SC2 Duties from the Scope still need to be implemented. Accordingly, the Scope should be modified to remove the last sentence, which identifies that SC2 maintains ANSI C63.14 and ANSI C63.28. The action remains open from the previous meeting for the chairman to 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 and provided a revised update schedule for the five year update period for ANSI C63.14-2014. He displayed a flow diagram of the process for inclusion of new terms and definitions 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 and made an acknowledgement of the commendable cooperation that SC2 has received from the C63[®] WG chairs, working through issues on definitions and coming to meaningful consensus on solutions. He noted that this was the case notwithstanding 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 addressed one prevailing issue noted by WG1 during the current update; a significant number of new terms and definitions that comprise slight variations from what are already in C63.14-2014, when definitions are updated from a previous version of the attributed standard. He discussed the WG1 rules process change put in place to address overly duplicative terms and definitions that meet this criteria; where differences are small enough that it would be counterintuitive to include both definitions, the new definition will now replace the existing one in C63.14-20XX.

He went on to explain that work remains to be done on the draft in the lead-up to balloting, to complete the incorporation of new terms and definitions, including military standard's terms and international terms. Mr. Hodes recommended the additions of MIL-STD-704G and MIL-STD-1275 to the list of military standards addressed, and also recommended the addition of UNECE Regulation 10, which addresses provisions for the approval of vehicles for electromagnetic compatibility, and CISPR 25. Mr. Hodes took an action to provide the appropriate version of UNECE Regulation 10 and a copy of CISPR 25 to WG1 for review. (See Action Item 20181128-2)

Mr. Duncanson provided an SC2 coordination status update and showed the nine C63[®] standards addressed by SC2 WG1 since 2014. He also identified the remaining draft standards that could potentially come up for review within the next year including C63.25.2, C63.29, C63.30 and C63. 31.

He addressed open actions as regards requests to WG1 from other subcommittees for assistance in drafting definitions needed to support preparation of their standards. These included the terms: "office equipment," associated with draft C63.9; "vehicle," associated with draft C63.30; and the terms "In-Situ," and "On-Site," with an emphasis on clarification of the distinction between the two test site conditions. He noted that in order to facilitate completion of the actions WG1 needs to obtain copies of the latest drafts of .9 and .30, to provide context for how the terms are used. Accordingly, Mr. Heirman and Mr. Hodes took actions to provide those drafts to WG1 for review. (See Action Items 20181128-3 and 20181128- 4)

He displayed the ANSI C63.14 update schedule and pointed out key dates in the development process, noting that the cutoff for the inclusion of new terms and definitions, originally planned to occur in the Fall 2018, would be extended to January 2019 because of slippage of the draft completion schedule to the right. It was noted that C63.25.1 will be in balloting by that time and

should be added to draft .14. In addition, C63.10 and C63.26 should be coming up for balloting soon and should be monitored for inclusion. Mr. Duncanson took an action to add the terms and definitions from C63.25.1 to the current draft. Plans are to bring the revised draft before the subcommittee for review by the end of January 2019. The projected date for initiation of the ballot process will be in late June 1 2019. Publication of ANSI C63.14-2019 is currently projected for April 2020. (See Action Item 20181128-5)

Mr. Heirman inquired about any progress in the effort to research the idea of transitioning C63.14 into an IEEE hosted database. Mr. Dilay stated that there had not been any contact with the IEEE since preliminary meetings held a couple of years ago, and at that time efforts were inconclusive because the IEEE database system was in transition. Mr. Dilay took an action to reestablish contact with the IEEE POC to determine the IEEE database status and revisit the feasibility of an ANSI C63.14 database. (See Action Item 20181128-6)

5.2 **Working Group 2 Report.** Mr. Dilay provided a status update for the draft ANSI C63.28-20XX, Best Practices Guide development. He reemphasized 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. He displayed the recently reworked combined Overview / Scope of the effort as it appears in current draft. Some discussion ensued concerning the concluding sentence which projected the standard's benefits (e.g., better performance, lower costs, and higher quality). Questions arose over the discussion of "costs" in an ANSI standard. It was recommended some other terminology would be more appropriate. It was also recommended that the product safety aspect of EMC compliance should be brought into the scope. After discussion it was agreed that the working group 2 would revisit wording of the Overview/Scope to address those two areas. (See Action Item 20181128-7)

He displayed the SC2 WG2 roster as it appears on the C63[®] website. It was noted that the list needs to be updated to include Frank Coleman, who supports the C63.28 development in his support role to the DoD Joint Spectrum Center (JSC). Mr. Dilay took an action to add him to the roster. (See Action Item 20181128-8)

Mr. Dilay provided the status of the .28 development effort, noting the monthly WebEx meetings that have been held since May 2018, and the slow, but steady development of the draft. He spoke through the working draft .28 detailing the major sections, the flow of the document and the areas where assistance is still needed to develop content. He specifically noted authorship assistance needed

in the sections addressing: product EMC design considerations; test instrumentation; EMC laboratory accreditation; and EMC compliance measurements.

He addressed the questionnaires previously distributed to standards development working group chairs and reemphasized their role 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. He noted that draft .28, version 1.33 is currently being prepared with the latest content decisions incorporated and should be completed during December. He stated that as a result of actions from yesterday's SC2, WG2 meeting, this latest draft will be distributed to all the standards development working group chairs, to provide some context to aid subcommittee responses to the .28 questionnaires. He concluded summing up the focus of the effort as being the application of the C63[®] standards, with a need for volunteers for authorship of some sections, and the need for input from SCs and WG chairs to provide write-ups for each published C63[®] standard.

6. **Other Old Business.** The chairman noted the SC2 action to coordinate with SC3 and expressed anticipation that the C63[®] / International standards comparison efforts underway within SC3 will be complementary to SC2's draft C63.28 EMC best practices effort. He stated that SC2 members will be present at the SC3 meeting tomorrow.
7. **New Business.** None.
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>
20181128-1	Mr. Shellman to provide Ed Hare with the approved agenda from today's meeting along with the SC2 report to the C63 [®] Main Committee.	ASAP
20181128-2	Mr. Hodes to provide copies of UNECE Regulation 10 and CISPR 25 to SC2 WG1 for review, with respect to draft C63.14.	05/01/2019
20181128-3	Mr. Heirman to provide draft C63.9 to SC2 WG1 for review with respect to developing a definition for "Office Equipment."	05/01/2019
20181128-4	Mr. Hodes to provide draft C63.30 to SC2 WG1 for review with respect to developing a definition for "Vehicle" within the context of wireless power transfer.	05/01/2019
20181128-5	Mr. Duncanson to add the terms and definitions from draft C63.25.1 to draft C63.14-20XX and possibly those from C63.10 and C63.26, based	05/01/2019

#	<u>ACTION ITEM</u>	<u>Disposition</u>
	on balloting dates.	
20181128-6	Mr. Dilay to reestablish contact with the IEEE database POC to follow-up on IEEE database status and revisit the feasibility of an ANSI C63.14 online database.	05/01/2019
20181128-7	SC2 WG2 to rework the Overview/Scope section of the C63.28 draft to address modifying “cost” consideration language and adding language for the “safety” aspects of EMC best practices.	05/01/2019
20181128-8	Mr. Dilay to add Mr. Frank Coleman to the SC2, WG2 roster.	05/01/2019

9.2 **Action items from the previous meeting were reviewed and resolved as shown 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.	Open
20180502-2	Mr. Shellman to contact Vladimir Bazhanov, chair of SC7 about his at risk membership status based on SC2 meeting attendance.	Closed
20180502-3	Mr. Shellman to provide Jerry Ramie with word changes to the SC2 Scope as agreed upon at the meeting.	Open
20180502-4	SC2 WG2 to develop title change for draft ANSI C63.28 which removes the word, “Compliance.”	Closed
20180502-5	Mr. Shellman to inform the C63 Main Committee of SC2 agreed upon word changes to the ANSI C63.28 PINS.	Closed
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.	Closed
20180502-7	SC2 WG1 to review draft ANSI C63.9, coordinate with SC5 on development of a definition for the term, “office equipment.”	Open
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.	Open
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.	Open
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.	Open
20180502-11	Mr. Shellman to prepare C63 [®] Newsletter input and provide to Mr. Zimmerman for publication.	Closed

10. **Time and place of next meeting.** The next SC2 meeting is scheduled for 29 April to 03 May 2019 at UL, LLC Research Triangle, NC.
11. **Adjournment.** The SC2 meeting was successfully completed as scheduled. The chairman adjourned the meeting at 1700.

Attachment 1

**SC2 Meeting Attendance List (28 November, 2018)
NIST Boulder, CO.**

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 [®]	danhoolihaneme@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	WIRFI@arri.org
Randy Long	Chair, SC6	rlong@anab.org
Vladimir Bazhonov	Chair, SC7	vladimir.bazhanov@ericsson.com
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
Victor Kuczynski	Member	vican@on.aibn.com
Jeffery Silberberg	Observer	Jeffrey.silberberg@fda.hhs.gov
Andy Griffin	Observer	n/avail
Doug Kramer	Guest	douglas.kramer@ets-lindgren.com
John Repella	Guest	n/avail
John Norgard	Guest	n/avail
Jason Coder	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

November 28, 2018; 3:00 PM - 5:00 PM - MDT

National Institute of Standards and Technology (NIST)

325 Broadway

Boulder, CO 80305-3326

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** (record attending members with their affiliations and guests separately below) **Report any roster errors to the ASC-C63[®] Secretary** (insert [SC2 membership roster](#) from the website as shown below)

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)
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
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 Quorum: (50% of roster + 1) constitutes a quorum. (rounding down) (Example: 9 roster members / 2 = 4.5 + 1 = 5.5 (therefore 5 people are required for a quorum) **Was quorum achieved? (Yes/No)** 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

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	11/10/2015	05/11/2016	11/08/2016	05/09/2017	11/08/2017	05/02/2018
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
Dan Hoolihan	C63 Chair	x		x		x	x
Zhong Chen	SC1 Chair						x
Don Heirman	SC3 Chair	x	x		x	x	x
Bob DeLisi	SC4 Chair					x	x
Ed Hare	SC5 Chair				x	x	x
Randy Long	SC6 Chair	x	x	x		x	
Vladimir Bazanov	SC7 Chair		x				
Stephen Berger	SC8 Chair		x				x
Janet O'Neil	Member		x	x		x	x
Harry Hodes	Member		x				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](#) (Spring meeting only) (Report approval or any changes to the Main Committee)

Scope: E3 Terminology, Definitions, and Best Practices

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.

Duties:

- (1) ANSI C63.14, "American National Standard, Dictionary of Electromagnetic Compatibility (EMC) including Electromagnetic Environmental Effects (E3)"
- (2) ANSI C63.28, "American National Standard, Guide for Best Practices for EMC."

4.1 Election of Officers (as required)

5. Working Group reports - Chair - [More information about each standard](#) is available on the Standards Status Matrix page of the [C63® web site](#). This information will be reviewed for accuracy at each Subcommittee meeting.

5.1 C63.14 – Definitions - Duncanson (insert link to [WG report](#).) Verify accuracy of document [status matrix](#) content and report any errors to the ASC-C63® Secretary.

Is this information correct? (Yes/No) (repeat this verification for all Standards covered by this Subcommittee)

5.2 C63.28 – Best Practices for Electromagnetic Compatibility - Dilay (insert link to [WG report](#)) Verify accuracy of document [status matrix](#) content and report any errors to the ASC-C63® Secretary.

Is this information correct? (Yes/No) (repeat this verification for all Standards covered by this Subcommittee)

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 - 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](#).

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 - (read Action Items to Members, who must agree that they understand their meaning)

9.2 Review of Action Items from previous meeting: (insert consolidated Action Item table from the previous meeting Minutes as shown below)

9.3 Review Newsletter input: The SC Presentation and any written report shall also be sent by the Subcommittee Chair to the ASC-C63® [Newsletter editor](#).

10. Time and place of next meeting: Chair

11. Closing remarks and Adjournment: Chair

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

Consolidated Action Items from today's Meeting of SC2

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
20180502-1					

Attachment 3

SC2 Membership List

Chairman – Marcus Shellman
ASC C63[®] / SC2 Membership Roster

NAME	TITLE	EMAIL
Mr. Marcus Shellman	Chair, SC2 (WG1/WG2)	marcus.shellman.civ@mail.mil
Mr. Chris Dilay	Vice Chair, SC2 (WG1/WG2)	chris.dilay@navy.mil
Mr. Michael Duncanson	Secretary, SC2 (WG1/WG2)	michael.duncanson@aecom.com
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. Bob Delisi	Chair, SC4	bob.delisi@ul.com
Mr. Ed Hare	Chair, SC5	W1RFI@arri.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

