Meeting Minutes

Accredited Standards Committee (ASC) C63[®] Electromagnetic Compatibility SUBCOMMITTEE 2 – E3 Terminology Definitions and EMC Best Practices

Tuesday, 17 May 2022, 1300, to 1430 EST ANSI C63® WebEx

- 1. Call to Order. Mr. Marcus Shellman, SC2 Chairman, called the meeting to order.
 - 1.1. **Opening Remarks:** Mr. Shellman welcomed members to the meeting, noting that Mr. Dilay, the SC2 Vice Chairman, was not in attendance.
 - 1.2. <u>Meeting Logistics Announcements:</u> None.
 - 1.3. <u>Introductions</u>: Mr. Duncanson 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 had been met.
- 2. **Review and Adoption of the Agenda.** Mr. Shellman called for a review of the agenda, highlighting key areas of significance for the meeting. A motion to approve the agenda was approved by voice vote.
 - 2.1. <u>Approval of the Previous Minutes:</u> Mr. Shellman called for a review of the minutes of the previous meeting. He stepped through minutes of the SC2 meeting held on 14 September 2021 via WebEx, addressing areas of significance. A motion to approve the minutes of the September meeting was passed via voice vote. The approved agenda and minutes will be provided to Jerry Ramie for posting to the C63® website. (See Action Item 2022517 1)
 - 2.2. Review of the Patent Slides: Mr. Shellman presented the C63® Patent Policy slides and polled attendees with respect to knowledge of patent related issues. There were no affirmations of patent issues or objections to the patent policy.
- 3. Review of Subcommittee Membership.
 - 3.1. <u>Membership.</u> Mr. Shellman displayed the SC2 membership as it appears on the Member Attendance Log which highlights member participation.
 - 3.2. <u>Members at Risk.</u> He discussed member attendance, noting that Janet O'Neil's attendance as a surrogate for Zhong Chen who is given credit for attendance. While no members are risk of being removed from SC2, it was noted that the attendance log indicates that Randy Long has missed three consecutive meetings. In accord with

established policy, the chairman will notify him of his status and the need to be represented by a surrogate if he cannot attend upcoming meetings. (See Action Item 2022517-2)

Later meeting discussion broadly addressed the issue of surrogates and policy surrounding any limits on their representation of SC chairs and voting. There was also discussion on whether the term "surrogate," or "proxy," is the most appropriate for subcommittee chair SC2 meeting stand-ins. It was decided that "surrogate" is the more technically appropriate term. Mr. Hoolihan noted that he has been intending a rewrite of the C63® procedures. He took an action to look at updating the procedures to address this specific area. As always, representation by a surrogate is encouraged for those committee chairs who cannot attend. (See Action Item 2022517-3)

- 3.3. Consideration of new members. Mr. Shellman reported receipt of an application for SC2 membership from longstanding C63® member, Mr. Harry Hodes. After some discussion of his extensive qualifications, a motion to approve the membership of Mr. Hodes was approved by voice vote. Mr. Shellman then, via motion, called for approval of the newly expanded SC2 membership which passed by voice vote. The SC2 membership list appears as Attachment 3.
- 4. <u>Display of Scope and Duties.</u> Mr. Shellman displayed recommended edits to the SC2 Scope resulting from an inquiry made by Mr. Hodes and subsequent action to expand the verbiage to include US Federal Government agencies. After discussion, a motion to approve final recommended edits, which had been discussed for the past couple of meetings, and subcommittee Duties, which have not changed, was passed by voice vote. The SC2 Scope and Duties approved by the subcommittee will be put before the C63[®] Main Committee for final approval. The approved Scope and Duties appear as Attachment 4.
 - 4.1 <u>Election of Officers.</u> Mr. Shellman, while noting the current SC2 officers have been reaffirmed through December 2023, informed the group he has been notified by Chris Dilay that he will not be able to participate in C63® activities this year. The situation may change in subsequent years. Mr. Shellman addressed the vice-chair vacancy in the meantime stating that he is looking for a volunteer to replace Mr. Dilay and inquired of C63® procedures. Mr. Delisi offered that the subcommittee chair can appoint the vice-chair. Mr. Shellman stated the position will remain vacant until a volunteer replacement is identified.

5. SC2 Status, Working Group Reports and C63® Standards Projects.

5.1. Working Group 1 Report. Mr. Duncanson provided an update of WG1 activities since the last meeting. He recounted his efforts utilizing the IEEE 100 database to find alternative sources of attribution for the two terms, "reflected power," and "net power, "noting that absent a universal terms search the cumbersome nature of searching standards individually has not produced the desired results. He stated that the difficulties experienced with the two terms was subsequently raised with the C63® Steering Committee which approved a motion to remove the terms from the .14 draft, thereby clearing the way for balloting. Mr. Hodes responded that the IEC Electropedia, the IEC's online dictionary

should have been consulted, as well, for the two terms. Mr. Shellman noted that the IEC dictionary is referenced in draft .14, so if the terms can be found there, we can re-incorporate them to the draft. Mr. Hodes took an action to research the IEC Electropedia for the two terms. (See Action item 2022517 - 4)

Mr. Duncanson proceeded to report that as a result of the Steering Committee decision to remove the two terms, an Invitation to Ballot was issued for draft .14 in December 2021. He reported the ballot period ended in April 2021 with the result of an 88% response rate from C63® members and 100% approval of the draft. He noted that a significant number of editorial comments were received from the FDA and C63® member Nicholas Abbondante which have been adjudicated and in his estimation were good comments that will result in a better document. He stated the draft will be recirculated once all edits are completed.

In other business potentially impacting the balloting of .14, Mr. Duncanson addressed the discrepancy in timing between the balloting of C63.14 and C63.4. He discussed the efforts that began in 2019 between SC2 and Don Heirman to get the 25 new terms and definitions in draft .4 into the current draft of .14, with the expectation that .4 would be shortly going to ballot. In consideration of the importance of .4 to the C63® and the fact that .4 has not yet gone to ballot, the issue was brought before the subcommittee for discussion. Mr. Duncanson also noted that he has attempted but has not yet been able to ascertain the current status of .4 from the SC1 chair. Mr. Hoolihan recommended, and it was agreed that SC2 would coordinate with SC1 on the status of .4 at their meeting to take place tomorrow.

He concluded the report summarizing the status of .14, with edits underway and needed coordination with SC1 for new content from draft .4. In addition, he reported anticipated coordination, also with SC1 on the terms and definitions in draft C63.25.2.

5.2. Working Group 2 Report. Mr. Shellman reported that because Mr. Dilay has not been able to participate and no WG2 meetings have been held this year, there is no WG2 report for this meeting.

5.3 C63® Subcommittees & EMC Standards Projects.

Mr. Shellman displayed the active status of C63® standards projects as maintained on the SC2 Agenda and inquired of the group to identify any needed updates. No new updates were identified.

6. Other Old Business.

- 6.1 <u>Written Reports</u> Mr. Shellman stated that the SC2 meeting report will be prepared for the Main Committee meeting and SC2 input for the newsletter will be prepared and provided to the C63[®] Chairman.
- 6.2 <u>Coordination with SC2 for definitions</u> Mr. Shellman noted the earlier discussion and reiterated the SC requirement for timely actions for coordination with SC2 on their terms and definitions.

- 6.3 <u>Coordination with SC3 for Harmonization</u> Mr. Shellman noted the responsibility of all subcommittees to coordinate SC3 as well, for international harmonization.
- 7. New Business. Mr. Hoolihan opened a discussion about the potential merits of moving ANSI C63.12, "American National Standard Recommended Practice for Electromagnetic Compatibility Limits and Test Levels," from SC3 to SC2. He reported the idea originated with Ross Carlton, SC3 chair, who recently started a job with a company supporting Navy acquisition projects and noted they are using C63.12 to facilitate requirements for commercial off-the-shelf (COTS) procurements. The thought is that SC2 traditional connections with the DoD may support a look at .12, which has not seen much interest among C63[®] customers, as something that may be of use to the DoD in its present or an updated form. Significant discussion resulted from the idea, some questioning whether the use of .12 is appropriate for DoD use given the nature of DoD requirements under MIL-STD-461, which sets requirement limits and ground rules for tailoring of those test levels. It was agreed that the main factor at play is a widespread lack of knowledge among DoD program managers about how to address E3 compliance requirements for COTS products in procurements. It was also agreed that DoD authorities such as the Tri-Services Working Group that has cognizance over MIL-STD-461 should have a say over whether DoD acquisition program use of .12 would be desirable. Mr. Hodes recommended that maybe a publication to provide guidance on COTS procurements would be of value to DoD program managers. Mr. Hoolihan noted that Mr. Carlton is really needed to contribute his thoughts to the discussion, and we're only in the discussion phase at this point. Action from SC3 would be needed to formalize any transition process. The discussion is to be continued.
- 8. <u>C63® SC2 Website Status.</u> Mr. Dilay had previously reported his inability to access the SC2 member website and his intention to seek assistance from Jerry Ramie to get the files up to date. In Mr. Dilay's absence Mr. Duncanson has assumed that action (See Action Item 2022517 5)

9. Action Item Review.

9.1. Newly assigned actions appear below:

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
2022517 - 1	Provide Jerry Ramie with the approved SC2 agenda from the 5/17/2022 meeting and the approved minutes from the 14 September 2021 meeting.	Mr. Duncanson		11/08/2022	
2022517 - 2	Reach out to Randy Long to inform him of his attendance record and request he provide a an SC6 member to represent him if he is unable to attend the next meeting.	Mr. Shellman		11/08/2022	
2022517 - 3	Explore new language for C63® Procedures to address pertinent aspects of policy for SC Chair surrogates who attend SC2 meetings.	Mr. Hoolihan		11/08/2022	
2022517 - 4	Research, using IEC Electropedia or other sources, definitions for "reflected power," and "net power."	Mr. Hodes		11/08/2022	
2022517 - 5	Reach out to Jerry Ramie for assistance in updating and maintaining the SC2 member	Mr. Duncanson		11/08/2022	

webcite		
website.		

9.2. Action Items from the previous meeting appear below:

AI#	ACTION ITEM	<u>Disposition</u>
20200624-4	Mr. Duncanson to explore the placement of all IEEE / C63® definitions preparation criteria on the C63® website with the standards development support materials.	OPEN
20210621-5	Mr. DeLisi to provide Mike Duncanson with the updated terms and definitions in draft ANSI C63.25.2 upon availability, for SC2 coordination.	OPEN
20210914-1	Mr. Duncanson to reach out to Dan Hoolihan for answer to policy fine points on those acting as surrogates for SC Chairs; (1) whether they have full voting rights, and (2) whether SC Chairs have an obligation to identify their surrogate prior to a meeting.	CLOSED (See 2022517-3)
20210914-2	Mr. Duncanson to distribute the draft minutes from the 06/21/2021 meeting and the draft agenda for today's meeting to SC2 membership for an email vote. Provide agenda and minutes to Jerry Ramie for posting, once approved.	CLOSED
20210914-3	Mr. Shellman to reach out to Dan Hoolihan and Steve Burger to ascertain Steve's projected SC2 participation going forward or identify a surrogate to cover SC8 interests.	CLOSED
20210914-4	Mr. Duncanson to distribute recommended changes to the SC2 Scope, as edited at today's meeting, to the SC2 membership for an email vote.	CLOSED
20210914-5	Mr. Duncanson to research alternative references, using IEEE Online database or other sources for definitions for "reflected power," and "net power."	CLOSED (See 2022517-4)
20210914-6	Mr. Dilay to reach out to Jerry Ramie for assistance in updating and maintaining the SC2 member website.	CLOSED (See 2022517-5)

- 9.3. **C63**[®] **Newsletter Input.** Mr. Shellman reiterated that SC2 input would be prepared for the C63[®] Newsletter after this meeting and be submitted to Dan Hoolihan.
- 10. <u>Time and place of next meeting.</u> The next SC2 meeting is anticipated for the November 2022 timeframe, pending decision of the SC2 Chairman, and is expected to be held via WebEx.
- 11. <u>Adjournment</u>. The SC2 meeting was successfully completed on the modified schedule. The chairman adjourned the meeting at 1430 EST.

Attachment 1

SC2 Meeting Attendance List (17 May 2022) ANSI C63® WebEx

NAME	TITLE	EMAIL
Marcus Shellman	Chair, SC2	marcus.shellman.civ@mail.mil
Michael Duncanson	Secretary, SC2	michael.duncanson@validatek.com
Dan Hoolihan	Chair, C63®	danhoolihanemc@aol.com
Bob DeLisi	Chair, SC4	bob.delisi@ul.com
Mr. Ed Hare	Chair, SC5	W1RFI@arrl.org
Jason Coder	Chair, SC7	jason.coder@nist.gov
Harry Hodes	Member	hhhodes@yahoo.com
Nicholas Abbondante	Guest	nicholas.abbondante@intertek.com

Attachment 2

C63[®] American National Standards Committee C63[®]

Electromagnetic Compatibility

Subcommittee 2: E3 Terminology Definitions and Best Practices

Chair: Marcus Shellman Vice Chair: Chris Dilay Secretary: Michael Duncanson May 17, 2022; 1:00 PM - 2:30 PM - EST

ANSI C63® WebEx

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	Naval Information Warfare 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
Ross Carlton	Chair Subcommittee 3	ETS - Lindgren
Bob DeLisi	Chair Subcommittee 4	Underwriters Laboratories
Ed Hare	Chair Subcommittee 5	ARRL
Randy Long	Chair Subcommittee 6	ANSI National Accreditation Board
Jason Coder	Chair Subcommittee 7	NIST
Stephen Berger	Chair Subcommittee 8	TEM Consulting
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: Secretary

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.

Member Attendance Log:

Name	Role	06/24/2020	09/29/2020	12/08/2020	03/09/2021	06/21/2021	09/14/2021
Marcus Shellman	SC2 Chair	Х		Х	Х	Х	
Chris Dilay	SC2 Vice- Chair	х	х	х	х	х	х
Michael Duncanson	SC2 Secretary	Х	х	х	Х	х	X
<u>Dan Hoolihan</u>	C63 Chair	x	x	x	x		
Zhong Chen	SC1 Chair	х*			х*	X*	
Ross Carlton	SC3 Vice- Chair			х		х	
Bob DeLisi	SC4 Chair	x	x	x	x	x	x
Ed Hare	SC5 Chair	Х	х	Х			
Randy Long	SC6 Chair	Х	Х	Х			
Jason Coder	SC7 Chair	х	х	х	х	х	х
Stephen Berger	SC8 Chair						
Janet O'Neil	Member	Х			Х	Х	

^{*} The SC1 Chair was represented by Janet O'Neil.

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

3.2 Consideration of new members? <u>Application for C63[®] Subcommittee</u> <u>Membership</u>

Subcommittee 2 (SC2) to consider the application of Harry Hodes for SC2 membership as an individual member. SC2 will vote to recommend Mr. Hodes' application for confirmation by the C63 Main Committee.

4. Display of the **Scope and Duties** (To Be Approved by SC2)

Scope: E3 Terminology, Definitions, and Best Practices

Subcommittee 2 (SC2) is responsible for developing and maintaining electromagnetic environmental effects (E3) definitions and terminology for C63® publications, and harmonizing their usages with DoD and other federal government agencies, national, and international standardization bodies. SC2 is also responsible for developing best practices for stakeholder's application of C63® standards during product design, development, test, and installation to optimize electromagnetic compatibility (EMC).

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 to Best Practice Methodologies, Processes, and Procedures for Electromagnetic Compatibility (EMC)."
- 4.1 Election of Officers No action required at this time.
 - Marcus Shellman, SC2 Chairman (12/31/2023)
 - Chris Dilay, SC2 Vice Chairman (12/31/2023)
 - Michael Duncanson, SC2 Secretary (12/31/2023)
- **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 <u>WG report</u>) Verify accuracy of document <u>status matrix</u> 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 - Shellman (insert link to <u>WG report</u>) Verify accuracy of document <u>status matrix</u> 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 ASC-C63[®] Subcommittees & EMC Standards Projects

SC1: C63.2, C63.4, C63.5, C63.7, C63.23, C63.25.1, C63.25.2, C63.25.3

SC2: C63.14, C63.28

SC3: C63.12

SC4: C63.10, C63.26, C63.29, C63.30, C63.31

SC5: C63.9, C63.15, C63.16, C63.24

SC6: C63.34

SC7: C63.17, C63.27

SC8: C63.18, C63.19, C63.33

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 either the C63 PowerPoint template or the C63 PowerPoint template wide. Prior to the Main Committee meeting, the SC report and approved previous SC 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 for definitions Before any Working Group draft can be submitted to Subcommittee for approval, the document must be provided to the SC2 Chair for evaluation and coordination of the definitions used.
- **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.** <u>C63.org</u> website use and updates: Secretary We normally post documents to the <u>SC2</u> <u>protected area</u>. 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: Secretary (insert consolidated Action Item table from the previous meeting Minutes as shown below)

Consolidated Action Items from previous Meetings of SC2

#		Disposition
	<u>ACTION ITEM</u>	
20200624-4	Mr. Duncanson to explore the placement of all IEEE / C63® definitions preparation criteria on the C63® website with the standards development support materials.	05/17/2022
20210621-5	Mr. DeLisi to provide Mike Duncanson with the updated terms and definitions in draft ANSI C63.25.2 upon availability, for SC2 coordination.	05/17/2022
20210914-1	Mr. Duncanson to reach out to Dan Hoolihan for answer to policy fine point on those acting as surrogates for SC Chairs; (1) whether they have full voting rights, and (2) whether SC Chairs have an obligation to identify their surrogate prior to a meeting.	05/17/2022
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20210914-4	Mr. Duncanson to distribute recommended changes to the SC2 Scope, as edited at today's meeting, to the SC2 membership for an email vote.	05/17/2022
20210914-5	Mr. Duncanson to research alternative references, using IEEE Online database or other sources for definitions for "reflected power," and "net power."	05/17/2022
20210914-6	Mr. Dilay to reach out to Jerry Ramie for assistance in updating and maintaining the SC2 member website.	05/17/2022

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.

ΙΟ.	time and place of next meeting: Chair	
1.	Closing remarks and Adjournment: Chair	
	******* End of Meeti	ng
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Consolidated Action Items from today's Meeting of SC2

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
20220517-1					

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)	christopher.a.dilay.civ@us.navy.mil
Mr. Michael Duncanson	Secretary, SC2 (WG1/WG2)	michael.duncanson@validatek.com
Mr. Dan Hoolihan	Chair, C63®	danhoolihanemc@aol.com
Mr. Zhong Chen	Chair, SC1	zhong.chen@ets-lindgren.com
Mr. Ross Carlton	Chair, SC3	ross.carlton@outlook.com
Mr. Bob DeLisi	Chair, SC4	bob.delisi@ul.com
Mr. Ed Hare	Chair, SC5	W1RFI@arrl.org
Mr. Randy Long	Chair, SC6	<u>rlong@anab.org</u>
Mr. Jason Coder	Chair, SC7	jason.coder@nist.gov
Mr. Stephen Berger	Chair, SC8	stephen.berger@ieee.org
Ms. Janet O'Neil	Member	j.n.oneil@ieee.org
Mr. Harry Hodes	Member	hhhodes@yahoo.com

Attachment 4

Approved SC2 Scope & Duties

E3 Definitions, Terminology, and Best Practices

Subcommittee 2 (SC2) is responsible for developing and maintaining electromagnetic environmental effects (E3) definitions and terminology for C63® publications, and harmonizing usage with federal government, national, and international standardization bodies. SC2 is also responsible for developing best practices for stakeholder's application of C63® standards during product design, development, test, and installation to optimize electromagnetic compatibility (EMC)."

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."