Approved Minutes

ANSI-Accredited Standards Committee C63 Electromagnetic Compatibility SUBCOMMITTEE 2 – E3 Terminology Definitions and EMC Best Practices

Tuesday, 08 December 2020, 1300 to 1430 ANSI C63® WebEx

- 1. Call to Order. Mr. Marcus Shellman, SC2 Chairman, called the meeting to order.
 - 1.1. **Opening Remarks:** Mr. Shellman welcomed everyone to the meeting and noted the absence of Mr. Duncanson, who was not in attendance due to the recent passing of his wife.
 - 1.2. <u>Meeting Logistics Announcements:</u> He addressed meeting arrangements and for the WebEx.
 - 1.3. <u>Introductions</u>: The chairman conducted the roll call to record SC2 membership attendance and determine the establishment of a quorum. Randy Long noted that his affiliation as it appears on the membership list needs to be edited to read, "ANSI National Accreditation Board," versus, "ANSI-ASQ National Accreditation Board." It was also noted that Mr. Ross Carlton is now chair of SC3. Mr. David Quasny, Amentum was in attendance as a proxy for Mr. Duncanson. The meeting attendee list appears in Attachment 1.
 - 1.4. **Quorum:** Based on the number of SC2 member attendees, the Chairman determined that a quorum had been met.
- 2. <u>Review and Adoption of the Agenda</u>. Mr. Shellman presented the agenda, highlighting key areas of significance for the meeting. A motion to approve the agenda, as written, was passed by voice vote. See Attachment 2. The approved agenda will be provided to Jerry Ramie. (see Action Item 20201208 1)
 - 2.1. <u>Approval of the Previous Minutes:</u> Mr. Shellman displayed minutes of the SC2 meeting held on 29 September 2020 via WebEx. The minutes were approved as written via voice vote.
 - 2.2. Review of the Patent Slides: The Chairman presented of patent 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, noting the changes identified earlier during the roll call. He took the action to provide Jerry Ramie with the needed membership list changes. (See Action Item 20201208-2)
- 3.2. <u>Members at Risk.</u> The Chairman displayed the Member Attendance Log, which highlights member participation. He identified Zhong Chen, SC1 as having missed the last two

- meetings and noted his absence from today's meeting, as well. He took as action to notify Mr. Chen of the current deficient representation of SC1 at SC2 meetings. (See Action Item 20201208-3)
- 3.3. <u>Consideration of new members.</u> The Chairman addressed the consideration of new members for SC2, soliciting interest from attendees not already on the roster. No new members have been added to the SC2 membership at this time.
- 4. <u>Display of Scope and Duties.</u> The Chairman displayed the SC2 Scope and Duties which were approved at the 24 June 2020 meeting. No action is needed at this time.
 - 4.1 <u>Election of Officers.</u> Mr. Shellman displayed the current SC2 officers and addressed the required election of new officers stating that the terms for all three positions is due to end on December 31st. In recognition of the fact that all three officers have agreed to remain in their positions for another term, Mr. Hoolihan put forth a motion, approved by voice vote, that the present SC2 officers remain in their positions for another three-year term. Accordingly, Marcus Shellman remains Chairman of SC2, Chris Dilay remains Vice-Chair, and Michael Duncanson remains SC2 Secretary.

5. SC2 Status and Working Group Reports.

5.1. Working Group 1 Report. Mr. Shellman provided an update of WG1 activities since the last meeting, specifically ballot activities for draft ANSI C63.14-20XX, "American National Standard Dictionary of Electromagnetic Compatibility (EMC) including Electromagnetic Environmental Effects (E3)." He reported the status of SC2 submission of responses to the IEEE MEC review, stating that with the exception of one minor additional change, all editorial issues with the document have been resolved. He also stated that all required copyright releases had been obtained and submitted by Mr. Duncanson. He went on to explain, however, that the IEEE responded that specific IEEE prepared language and evidence of authority to grant releases would be required of each standardization body signatory. He relayed that this is the only remaining issue with respect to the balloting of .14 and Mr. Duncanson is experiencing significant pushback to this requirement from standardization bodies. Mr. Shellman took an action to work with Mr. Hoolihan to expedite the matter with the IEEE editor. (See Action Item 20201208-4)

Mr. Shellman proceeded to provide the status of SC2 Pre-Ballot coordination with other subcommittees on the terms and definitions in their draft standards. He reported completion of the initial coordination review of draft C63.30 with SC4. Additionally, coordination remains underway with SC5 on draft C63.24, and coordination with SC7 has been initiated for draft C63.27. SC6 has indicated definitions for draft C63.8 will be provided shortly. He also addressed recent receipt of a request from Jerry Ramie for support in determining the existence of any established definition for the term, "Mass MIMO," "Massive MIMO," as noted by Mr. Hodes. During discussion it was noted that a task group in SC4 is looking at measurement procedures for far field and near field MIMO conditions. It was also noted that the FCC and ISED Canada are part of this effort and that this task group should be looked to for development of the definition assuming none exists. Mr. Shellman

agreed that SC2 will defer to SC4 for any efforts at developing a definition for the term. He concluded the report with a recap of WG1 issues regarding IEEE required copyright release language, noting the projected publication of .14 is moved to the right as a result.

5.2. Working Group 2 Report. Mr. Dilay provided a status update for draft ANSI C63.28-20XX," Best Practice Methodologies, Processes, and Procedures for Electromagnetic Compatibility (EMC)." He displayed the "Title," "Scope," and "Purpose," noting that these have not changed with the current version of the draft. He stated there has only been one WG2 meeting since the SC2 meeting in September. He showed the WG2 membership as it appears on the C63® website and inquired of Harry Hodes whether he will be able to continue participation as a working group member. Mr. Hodes responded that while he would like to participate, he is no longer a member of C63®. Mr. Dilay inquired as to whether C63® membership is required for membership in a working group to which Mr. Hoolihan responded that it is not. The WG2 membership roster will accordingly be updated to reflect Harry Hodes as an individual member and as noted, to remove Don Heirman.

Mr. Dilay went on to provide the status of draft C63.28, noting the WebEx meetings that have been held since June 2020, the most recent having been held on 20 October. The next meeting is scheduled for 15 December. He stated that the focus of current efforts is on current revision 1.41 where a detailed CRM review continues to be in progress for the entire document.

He stated the document currently consists of 11 clauses, 10 in progress with initial drafts, and 1 that still requires an initial draft or significant input prior to inclusion in the document. He displayed the table of contents of the standard and addressed the areas in the draft where assistance is still needed, focusing on the sections addressing "Product EMC Design Considerations," Test Instrumentation," and Annex B which addresses results of the SC3 International Standards Comparison Study. He stated he has obtained the latest comparison studies from Ross Carlton and these will be incorporated into the latest draft. He noted he plans to reach out specifically to SC1, SC5 and SC6 members for assistance in developing the "Test Instrumentation" section and plans to implement Don Heirman's recommendation to separate the section into emissions and susceptibility.

Mr. Dilay provided a general conclusion reiterating the status of the draft and the need for volunteers to assist in the development of several sections.

6. Other Old Business.

- 6.1 <u>Written Reports</u> Mr. Dilay stated that the SC2 report will be prepared for the main committee, to be addressed at the next Steering Committee meeting. Mr. Hoolihan stated the meeting is scheduled to be held on 17 December.
- 6.2 <u>Coordination with SC2 for definitions</u> Mr. Dilay addressed the C63 policy requiring coordination with SC2 on terms and definitions prior to entering the ballot process. He urged all SCs developing definitions to coordinate with SC2 as soon as practical. Mr. Shellman took the

opportunity to commend the SCs for their conformance with the requirement and timely actions for coordination of their definitions. He also assured SC2's commitment to respond to coordination requests in a timely manner to preclude delays in the ballot process.

- 7. New Business. None.
- 8. <u>C63[®] SC2 Website Status.</u> Mr. Dilay stated that the SC2 member website would be brought up to date following this meeting.

9. Action Item Review.

9.1. Newly assigned actions appear below:

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
20201208-1	Provide Jerry Ramie with the approved SC2 agenda from today's meeting.	Mr. Shellman		ASAP	
20201208-2	Provide Jerry Ramie with SC2 membership list changes to reinstate Stephen Berger as chair of SC8; add Ross Carlton, ETS Lindgren as Chair of SC3; and correct Randy Long's affiliation to be," ANSI National Accreditation Board."	Mr. Shellman		ASAP	
20201208-3	Provide notification to Zhong Chen, SC1 about the at-risk status of his SC2 membership.	Mr. Shellman		ASAP	
20201208-4	Follow-up with Dan Hoolihan, Mike Duncanson, and the IEEE Editor on .14 ballot issues arising from recently required IEEE copyright release language.	Mr. Shellman		ASAP	

9.2. Action Items from the previous meeting appear below:

AI#	ACTION ITEM	Disposition
20191119-5	Mr. Dilay to reach out to Rohde & Schwarz ANSI C63® members for assistance in development of the C63.28 clause addressing "test instrumentation."	OPEN
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
20200929-1	Mr. Dilay to provide Jerry Ramie with the approved SC2 agenda from today's meeting.	CLOSED
20200929-2	Mr. Dilay to provide Jerry Ramie with SC2 membership list changes; Provide Jerry Ramie with SC2 membership list changes; to reinstate Stephen Berger as chair of SC8, and add Ross Carlton, ETS Lindgren, Vice-Chair of SC3 in Don Heirman's role representing SC3.	CLOSED
20200929-3	Mr. Dilay to follow-up with Jerry Ramie about updates previously submitted for the update of the WG1 and WG2 areas of the C63® Website; Harry Hodes to be added to WG1 and WG2 membership rosters, Don Heirman to be removed from WG2.	OPEN
20200929-4	Mr. Duncanson to reach out to Lisa Perry, the IEEE Editor to determine the ballot	OPEN

AI#	ACTION ITEM	<u>Disposition</u>
	status of C63.14.	
20200929-5	Mr. Dilay to reach out to SC8 to determine if C63.32 is a development project that	OPEN
	should be listed in section 5.3 of the SC2 agenda.	
20200929-6	Mr. Duncanson to reach out to Jerry Ramie to determine update status of the status	OPEN
	of C63 standards page on the C63 Website.	

- 9.3. **C63**[®] **Newsletter Input.** Preparation of the newsletter input is pending outcome of the October Steering Committee meeting. Input will be provided to Mr. Hoolihan assuming the decision to publish by the end of the year.
- 10. <u>Time and place of next meeting.</u> The next SC2 meeting is scheduled for 09 March 2021 to be held via WebEx.
- 11. <u>Adjournment</u>. The SC2 meeting was successfully completed as scheduled. The chairman adjourned the meeting at 1400.

Attachment 1

SC2 Meeting Attendance List (08 December 2020) ANSI C63® WebEx

NAME	TITLE	EMAIL
Marcus Shellman	Chair, SC2	marcus.shellman.civ@mail.mil
Chris Dilay	Vice Chair, SC2	<u>chris.dilay@navy.mil</u>
Dan Hoolihan	Chair, C63®	danhoolihanemc@aol.com
Ross Carlton	Chair, SC3	Ross.Carlton@ets-lindgren.com
Bob Delisi	Chair, SC4	<u>bob.delisi@ul.com</u>
Ed Hare	Chair, SC5	W1RFI@arrl.org
Randy Long	Chair, SC6	<u>rlong@anab.org</u>
Jason Coder	Chair, SC7	jason.coder@nist.gov
Karen Burnham	Guest	<u>karen.burnham@ema3d.com</u>
Harry Hodes	Guest	<u>harry.h.hodes@nasa.gov</u>
David Quasny	Guest	david.quasny@amentum.com

Attachment 2



Accredited Standards Committee C63®

Electromagnetic Compatibility

Subcommittee 2: E3 Terminology Definitions and Best Practices

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

December 08, 2020; 1:00 PM - 2:00 PM - EST ASC 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	Vice-Chair Subcommittee 3	Ross Carlton (Acting) ETS - Lindgren
Bob DeLisi	Chair Subcommittee 4	Underwriters Laboratories
Ed Hare	Chair Subcommittee 5	ARRL
Randy Long	Chair Subcommittee 6	ANSI-ASQ 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	05/02/201 8	11/28/2018	05/01/2019	11/19/2019	06/24/2020	09/29/2020
Marcus Shellman	SC2 Chair	Х	Х	Х	Х	Х	
Chris Dilay	SC2 Vice- Chair	х	Х	Х	Х	Х	Х
Michael Duncanson	SC2 Secretary	х	х	х	х	х	х
Dan Hoolihan	C63 Chair	Х	х	х	х	x	х
Zhong Chen	SC1 Chair	Х	х		х		
Ross Carlton	SC3 Vice- Chair	х	Х	Х	Х		
Bob DeLisi	SC4 Chair	Х	х		х	х	Х
Ed Hare	SC5 Chair	Х	Х	Х	Х	Х	Х
Randy Long	SC6 Chair		Х	Х	Х	Х	Х
Jason Coder	SC7 Chair		Х			Х	Х
Stephen Berger	SC8 Chair	Х	Х				
Janet O'Neil	Member	Х	Х	Х	Х	Х	

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. Display of the Scope and Duties (Approved at the June meeting)

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 to Best Practice Methodologies, Processes, and Procedures for Electromagnetic Compatibility (EMC)."

4.1 Election of Officers -

- Marcus Shellman, SC2 Chairman (12/31/2020)
- Chris Dilay, SC2 Vice Chairman (12/31/2020)
- Michael Duncanson, SC2 Secretary (12/31/2020)
- **5. Working Group reports Chair -** <u>More information about each standard</u> is available on the Standards Status Matrix page of the <u>C63® web site</u>. 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</u> matrix content and report any errors to the ASC-C63[®] Secretary.

Is this information correct? (Yes/N_0) (repeat this verification for all Standards covered by this Subcommittee)

5.2 C63.28 – Best Practices for Electromagnetic Compatibility - Dilay (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, C63.22, C63.23, C63.25.1, C63.25.2

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: C63.8

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 either 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 protected</u> <u>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

#	ACTION ITEM	Disposition
20191119-5	Mr. Dilay to reach out to Rohde & Schwarz ANSI C63® members for assistance in	12/08/2020
	development of the C63.28 clause addressing "test instrumentation."	
20200624-4	Mr. Duncanson to explore the placement of all IEEE / C63® definitions preparation	12/08/2020
	criteria on the C63® website with the standards development support materials.	
20200929-1	Mr. Dilay to provide Jerry Ramie with the approved SC2 agenda from today's	12/08/2020
	meeting.	
20200929-2	Mr. Dilay to provide Jerry Ramie with SC2 membership list changes; to reinstate	12/08/2020
	Stephen Berger as chair of SC8, and add Ross Carleton, ETS Lindgren, Vice-Chair	
	of SC3, in Don Heirman's role representing SC3.	
20200929-3	Mr. Dilay to follow-up with Jerry Ramie about updates previously submitted for the	12/08/2020
	update of the WG1 and WG2 areas of the C63® Website	
20200929-4	Mr. Duncanson to reach out to Lisa Perry, the IEEE Editor to determine the ballot	12/08/2020
	status of C63.14.	
20200929-5	Mr. Dilay to reach out to SC8 to determine if C63.32 is a development project that	12/08/2020
	should be listed in section 5.3 of the SC2 agenda.	
20200929-6	Mr. Duncanson to reach out to Jerry Ramie to determine update status of the status	12/08/2020
	of C63 standards page on the C63 Website.	

- **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

Consolidated Action Items from today's Meeting of SC2

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
20201208-1					

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@amentum.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@ets-lindgren.com
Mr. Bob Delisi	Chair, SC4	bob.delisi@ul.com
Mr. Ed Hare	Chair, SC5	W1RFI@arrl.org
Mr. Randy Long	Chair, SC6	rlong@anab.org
Mr. Jason Coder	Chair, SC7	jason.coder@nist.gov
Mr. Stephen Berger	Chair, SC8	stephen.berger@ieee.org
Mr. Victor Kuczynski	Member	vican@on.aibn.com
Ms. Janet O'Neil	Member	j.n.oneil@ieee.org