

Approved Minutes
ANSI-Accredited Standards Committee C63[®]
Electromagnetic Compatibility
SUBCOMMITTEE 2 – E3 Terminology Definitions and EMC Best Practices
Wednesday, 24 June 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:** The Chairman welcomed everyone to the meeting and recognized the SC2 officers.
 - 1.2. **Meeting Logistics Announcements:** The Chairman addressed meeting arrangements and for the WebEx
 - 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 Jerry Ramie. (see Action Item 20200624 -1)
 - 2.1. **Approval of the Previous Minutes:** The Chairman displayed draft minutes of the SC2 meeting held on 19 November 2019 at Keysight Technologies, Santa Rosa, CA. The minutes were approved as written by voice vote.
 - 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. Mr. Hoolihan noted that Stephen Berger should be removed at present as chair of SC8 as he is fighting a debilitating illness. In addition, Harry Hodes should be removed SC2 membership as he is no longer with Bay Area Compliance Laboratories Corp., and SC3 presently does not have an

active chair since Don Heirman is not expected back until the end of the year. Mr. Shellman will provide Jerry Ramie with the needed membership list changes. (See Action Item 20200624-2)

- 3.2. **Members at Risk.** The Chairman displayed the Member Attendance Log, which highlights members at risk. He noted that there are 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. **Approval of Membership, Scope and Duties.** The Chairman displayed the SC2 Scope and Duties. A motion for approval of the SC2 Membership, Scope and Duties was passed by voice vote.
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 an update to ballot activities for draft ANSI C63.14-20XX, version 1.08, “American National Standard Dictionary of Electromagnetic Compatibility (EMC) including Electromagnetic Environmental Effects (E3).” He briefly addressed the International Harmonization review with SC3, noting that while initiated in July 2019 by SC2, no formal confirmation of a successful review has been received. Mr. Hoolihan, acknowledging the situation stated SC2 should proceed to move forward as no issues are likely. Mr. Shellman noted, as well, that Don had provided what he deemed to be verbal acknowledgement in discussions. Also related to Mr. Heiman’s absence, Mr. Hoolihan stated in answer to an inquiry that the new definitions from draft C63.4 should remain in draft .14, noting the value of that standard to the C63[®] and high confidence that it will publish soon with the current definitions intact.

Mr. Duncanson proceeded to provide the status of C63.14 addressing the C63[®] Consensus Ballot Review and the Invitation to Ballot on 29 January 2020. He then informed the subcommittee of results of the IEEE Pre-Ballot Mandatory Editorial Coordination (MEC) review related to .14 definitions. He detailed mandatory IEEE rules for definitions development being applied to .14 that required changes to a number of long existing definitions. He displayed the new definitions criteria noting that it is largely predicated on the fact that all terms defined in IEEE standards are incorporated into the IEEE-SA Standards Definitions Database, as stated in their review. He stated that a total of 16 definitions in draft .14 are impacted with revisions

requested but acknowledged that the criteria will result in better definitions. He provided one example from .14 that illustrated the logic of isolating the definition from extraneous language. He displayed the 16 impacted terms and their source standards noting that C63.11-2000, C63.17-2013, C63.26-2015 and C63.23-2012 represent the impacted C63[®] standards and 5 of the definitions. He stated that WG1 had prepared responses for all the requested definitions modifications and that these had not yet been resubmitted to the IEEE. After significant discussion he took an action to provide the proposed definitions resolutions to the full SC2 for review and concurrence prior to submission back to the IEEE. (See Action Item 20200624-3)

Next in the report was the status of SC2 Pre-Ballot coordination with other subcommittees on the terms and definitions in their draft standards. Mr. Duncanson reported coordination with SC4 in the recently completed initial review of definitions in draft C63.30-20XX. He stated that the review reflected the recently acquired IEEE criteria and that many new definitions would be incorporated in the next update of C63.14. One well received recommendation resulted in an action for WG1 to explore the placement of all the C63[®] definitions preparation criteria on the C63[®] website with the standards development support materials. (See Action Item 20200624-4)

Among anticipated coordination he also acknowledged contact with SC6 and the coordination of definitions in draft C63.8. The subcommittee was also informed that SC7 will soon be sending definitions in draft C63.27 to SC2 for coordination. Mr. Duncanson concluded the report with a recap of the main topics covered and a revised publish date for C63.14, anticipated conservatively to be by the end of the calendar year.

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 “Scope” and the “Purpose” of the document. He showed the SC2 WG2 membership as it appears on the C63[®] website noting that Dan Hoolihan and Richard Worley are to be removed from the roster. The status of Harry Hodes’ participation is in question at present, Mr. Hoolihan noting that he is now affiliated with NASA. Mr. Hodes will remain on the WG2 roster for the present, until more information about his status is obtained. Mr. Dilay took an action to contact him to determine his status with C63[®] and the WG. He acknowledged the addition to the roster of Mr. Dave Schaefer, representing Element Materials Technology. (See Action Item 20200624-5)

Mr. Dilay went on to provide the status of draft C63.28. He addressed the monthly WebEx meetings held since November 2019 stating that the most recent meeting was held on 1 May. He reported that the document is in the draft development phase with

steady progress. He introduced the latest draft of C63.28, version 1.38 providing an overview of how the current content is taking shape and noting that the document currently consists of 11 clauses, 9 in progress with initial drafts that are included in the latest revision, and 2 that still require initial drafts 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 needed in the development focusing on the sections addressing “Product EMC Design Considerations,” Test Instrumentation,” and Annex B which addresses results of the SC3 International Standards Comparison Study and from whom additional comparison results were expected by this time. He noted that a total of 5 reports have been received by SC2, to date. He took an action to reach out to SC3 to determine the availability of new inputs to the annex. (See Action Item 20200624-6)

Mr. Dilay concluded his report revisiting the focus of the Best Practice Guide, which is the application of the C63[®] standards. He reiterated the need for volunteers to assist in the development of several sections and the need for subcommittees to provide inputs for each published standard as applicable to various sub-clauses of the document. He gave a heads-up that following the upcoming July WG2 meeting he will be reaching out to each subcommittee, to provide a synopsis of each of their published standards.

5.3. **SC2 Coordination with C63[®] Subcommittees.** Mr. Shellman addressed the table in section 5.3 of the agenda stating his intent to include the SC2 standards. Mr. Duncanson noted the need to change the heading of the section because of the new mandatory section 6.2 which addresses coordination with SC2. He took an action to address the needed change. Mr. Hoolihan noted that C63.25 and C63.11 are not active and should be removed from 5.3. The action is expanded to include this change. (See Action Item 20200624-7)

6. **Other Old Business.** None.

7. **New Business.** None.

8. **C63[®] SC2 Website Status.** 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
20200624-1	Provide Jerry Ramie with the	Mr. Shellman		ASAP	

	approved SC2 agenda from today's meeting.				
20200624-2	Provide Jerry Ramie with SC2 membership list changes to remove Stephen Berger as chair of SC8, Don Heirman as chair of SC4 and Harry Hodes from SC2 membership.	Mr. Shellman		ASAP	
20200624-3	Provide the proposed WG1 IEEE MEC review definitions resolutions to the full SC2 for review and concurrence	Mr. Duncanson		ASAP	
20200624-4	Explore the placement of all IEEE / C63® definitions preparation criteria on the C63® website with the standards development support materials.	Mr. Duncanson		09/29/2020	
20200624-5	Reach out to Harry Hodes to determine his status with C63® and WG2.	Mr. Dilay		09/29/2020	
20200624-6	Reach out to SC3 to determine the availability of new International Standard Comparisons for input to the Annex A of C63.28.	Mr. Dilay		09/29/2020	
20200624-7	Revise section 5.3 of the SC2 agenda to address all the C63® active standards projects. Delete C63.25 and C63.11 from the table. Add SC2 and C63.14 and C63.28.	Mr. Duncanson		09/29/2020	

9.2. **Action Items from the previous meeting appear below:**

AI #	<u>ACTION ITEM</u>	<u>Disposition</u>
20191119-1	Mr. Shellman to provide Ed Hare with the approved SC2 agenda from today's meeting along with the SC2 report for the C63® Main Committee.	CLOSED
20191119-2	Mr. Shellman to provide Jerry Ramie with SC2 membership list change that Jason Coder is now SC7 Chairman	CLOSED
20191119-3	Mr. Dilay to contact Dan Hoolihan and Richard Worley that their SC2 WG2 membership is at risk.	CLOSED
20191119-4	Mr. Dilay to provide Jerry Ramie with SC2 WG2 membership list change to add Dave Shaefer to the roster.	OPEN
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

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

10. **Time and place of next meeting.** The next SC2 meeting is scheduled for 29 September 2020 to be held via WebEx.
11. **Adjournment.** The SC2 meeting was successfully completed as scheduled. The chairman adjourned the meeting at 1400.

Attachment 1

**SC2 Meeting Attendance List (24 June 2020)
ANSI C63[®] WebEx**

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@amentum.com
Dan Hoolihan	Chair, C63 [®]	danhoolihaneme@aol.com
Bob Delisi	Chair, SC4	bob.delisi@ul.com
Ed Hare	Chair, SC5	WIRFI@arrl.org
Randy Long	Chair, SC6	rlong@anab.org
Jason Coder	Chair, SC7	jason.coder@nist.gov
Janet O'Neil	Member	j.n.oneil@ieee.org
David Quasny	Guest	david.quasny@amentum.com

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

June 24, 2020; 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 (NIWC), 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
Jason Coder	Chair Subcommittee 7	NIST
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

Name	Role	05/09/2017	11/08/2017	05/02/2018	11/28/2018	05/01/2019	11/19/2019
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	x
Zhong Chen	SC1 Chair			x	x		x
Don Heirman	SC3 Chair	x	x	x	x	x	x
Bob DeLisi	SC4 Chair		x	x	x		x
Ed Hare	SC5 Chair	x	x	x	x	x	x
Randy Long	SC6 Chair		x		x	x	x
Jason Coder	SC7 Chair				x		
Stephen Berger	SC8 Chair			x	x		
Janet O'Neil	Member		x	x	x	x	x
Harry Hodes	Member			x	x		x

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:

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 to Best Practice Methodologies, Processes, and Procedures for Electromagnetic Compatibility (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, C63.25.1, C63.25.2

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, 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 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. **C63.15** has been turned over to SC3 for harmonization.

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)

Consolidated Action Items from previous Meeting of SC2

#	<u>ACTION ITEM</u>	<u>Disposition</u>
20191119-1	Mr. Shellman to provide Ed Hare with the approved SC2 agenda from today's meeting along with the SC2 report for the C63® Main Committee.	06/24/2020
20191119-2	Mr. Shellman to provide Jerry Ramie with SC2 membership list change that Jason Coder is now SC7 Chairman	06/24/2020
20191119-3	Mr. Dilay to contact Dan Hoolihan and Richard Worley that their SC2 WG2 membership is at risk.	06/24/2020
20191119-4	Mr. Dilay to provide Jerry Ramie with SC2 WG2 membership list	06/24/2020

#	<u>ACTION ITEM</u>	<u>Disposition</u>
	change to add Dave Shaefer to the roster.	
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.”	06/24/2020

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
20200624-1					

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 [®] (WG2)	danhoolihanemc@aol.com
Mr. Zhong Chen	Chair, SC1	zhong.chen@ets-lindgren.com
Vacant	Chair, SC3	
Mr. Bob Delisi	Chair, SC4	bob.delisi@ul.com
Mr. Ed Hare	Chair, SC5	WIRFI@arri.org
Mr. Randy Long	Chair, SC6	rlong@anab.org
Mr. Jason Coder	Chair, SC7	jason.coder@nist.gov
Vacant	Chair, SC8	
Mr. Victor Kuczynski	Member	vican@on.aibn.com
Ms. Janet O'Neil	Member	j.n.oneil@ieee.org