

Meeting Minutes
American National Standards Committee (ANSC) C63[®]
Electromagnetic Compatibility
SUBCOMMITTEE 2 – E3 Terminology Definitions and EMC Best Practices

Wednesday, 10 May 2023, 1030 - 1200 EST

A2LA
Frederick, MD 21703
ANSC 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.
 - 1.2. **Meeting Logistics Announcements:** None.
 - 1.3. **Introductions:** 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. **Approval of the Previous Minutes:** Mr. Shellman called for a review of the minutes of the previous meeting. He stepped through minutes of the SC2 meeting held on 08 November 2022 via WebEx, addressing areas of significance. A motion to approve the minutes of the November 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 20230510 - 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. **Membership.** Mr. Shellman displayed the SC2 membership as it appears on the C63[®] website, asking whether any changes were needed. It was noted that Mr. DeLisi is the current Chair of ANSC C63[®] in place of Mr. Hoolihan. In addition, Mr. Hare has retired and is replaced as Chair of SC5 by Mr. Braxton, and the Chair of SC6 is now Mr. Kramer and needs to replace Randy Long. The identified changes will be provided to Mr. Ramie for posting to the C63[®] website. (See Action Item 20230510 – 2)

- 3.2. **Members at Risk.** Mr. Duncanson displayed the member attendance log, noting there are no members at risk.
- 3.3. **Consideration of new members.** Mr. Shellman noted that no new applications for membership have been received since the last meeting. The SC2 membership list appears as Attachment 3.
4. **Display of Scope and Duties.** Mr. Shellman displayed the SC2 Scope and Duties, modifications to which were approved by SC2 at the 17 May 2022 meeting and received final approval by the C63[®] Main Committee.
 - 4.1 **Election of Officers.** Mr. Shellman noted the current SC2 officers, himself as SC2 Chair and Mike Duncanson as SC2 Secretary and Chair of WG1, are affirmed through December 2023. A vacancy remains at the Vice-chair position.
 - 4.2 **Approval of the Scope, Duties and Membership.** A motion proposed by Mr. Shellman for approval of the SC2 Scope, Duties and Membership was passed by voice vote.
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 reported that all edits to draft .14 have been completed and the document is ready for a recirculation ballot, pending the resolution of coordination underway with SC1 concerning 9 of 39 definitions to be included from draft C63.4. He noted SC2 has been in touch with Ms. Santulli about the recirculation and apprised her of the situation with SC1 for which she provided guidance for submission of the latest changes. Mr. Chen reported that SC1 is currently reviewing and generating responses to the SC2 .4 review, noting that completion of the review responses is expected shortly with affirmative responses to many of the SC2 comments. There was discussion between attendees and WG1 about some trends in definition development most often encountered during SC2 reviews. Rationales for some of the more routine comments were discussed and attendee questions addressed. There was consensus that definitions should be for universal use and not shaped for users of the particular standard in which they appear. Mr. Duncanson summarized that the way forward for draft .14, to finalize the document with .4 changes and submit to the IEEE Secretariat for a recirculation ballot. He reiterated that the SC2 decision for .4 definitions requires omission of the attribution to .4 in the .14 entries, as they are considered developed by the C63[®] Committee.

Mr. Duncanson continued with the SC2 coordination status with other subcommittees, providing the status of pre-ballot reviews underway since the last meeting. The reviews involved PC63.4TM/D2.0, PC63.26/D3, C63.9 and C63.16. He addressed the numbers of definitions involved with each draft and addressed the fact that some of these requests for support can be turned around quickly, whereas others with large numbers of definitions can take significantly more time. He stated that the subcommittee is concerned about adversely impacting ballot schedules in cases where significant time is needed to review definitions.

For these reasons SC2 is requesting the SCs consider a 30-to-45-day pre-ballot review period, particularly for draft standards with a large number of definitions. Additionally, he recommended that SCs consider early contact with SC2 when developing new terms and definitions. He displayed the C63[®] flowchart for definitions development which details the paths by which new definitions are included in draft .14, modified to address the requested considerations.

Mr. Shellman raised the issue of ambiguities in the process to obtain copyright releases for use of definitions sourced from other standards. Based on SC2 experiences, he specifically addressed the need to clarify responsibilities of the IEEE Secretariat to support SCs seeking copyright releases. Mr. DeLisi verified that it is the responsibility of the Secretariat to take copyright release requests from standards WGs, contact the cognizant standardization organizations, and obtain the appropriate copyright releases. Mr. Shellman recommended that language be drafted into the C63[®] Procedures to explicitly state what the Secretariat responsibilities are to avoid confusion. There was consensus that the Procedures, which are currently under review, should be updated to incorporate these IEEE Secretariat responsibilities.

Mr. Duncanson concluded the report with a summary of the .14 ballot status, SC2 coordination and pre-ballot reviews, and the recommendation that SCs consider early contact with SC2 when developing terms and definitions.

5.2. **Working Group 2 Report.** Mr. Shellman reported that WG2 is currently inactive so that report is tabled at this time.

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 **Written Reports** – Mr. Shellman stated that the SC2 meeting report will be prepared for the Main Committee meeting.

6.2 **Coordination with SC2 for definitions** - 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 **Coordination with SC3 for Harmonization** – Mr. Shellman noted the responsibility of all subcommittees to coordinate SC3 as well, for international harmonization.

7. **New Business.** None.

8. **C63[®] SC2 Website Status.** Mr. Shellman stated that updates to the SC2 Website will be addressed to Mr. Ramie.

9. **Action Item Review.**

9.1. **Newly assigned actions appear below:**

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
20230510 - 1	Provide Mr. Ramie with the approved SC2 agenda from today's meeting and the approved minutes from the 11/08/2022 meeting.	Mr. Duncanson		10/03/2023	
20230510 - 2	Provide Mr. Ramie with corrections to the SC2 membership to show: Mr. DeLisi as Chair of C63; Mr. Braxton, Elite Electronic Engineering as Chair of SC5; and Mr. Kramer, Apple as the Chair of SC6.	Mr. Duncanson		10/03/2023	

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

AI #	<u>ACTION ITEM</u>	<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 (for content decisions)
2022517 - 4	Mr. Hodes to research, using IEC Electropedia or other sources, definitions for "reflected power," and "net power."	CLOSED
2022517 - 5	Mr. Duncanson to reach out to Jerry Ramie for assistance in updating and maintaining the SC2 member website.	OPEN
20221108-1	Mr. Duncanson to provide Jerry Ramie with the approved SC2 agenda from the 11/08/2022 meeting and the approved minutes from the 17 May 2022 meeting.	CLOSED
20221108-2	Mr. Duncanson to provide Jerry Ramie with a correction to the SC2 membership to show Doug Kramer, Apple as the chair of SC6.	CLOSED
20221108-3	Mr. Duncanson to provide SC1 with the 20 terms and definitions in draft C63.14 sourced from draft C63.4 for review, to ensure they are identical to those in the current version of draft .4.	CLOSED
20221108-4	Mr. Chen to conduct SC1 review of the draft .14 terms and definitions sourced from draft .4. Provide any updates / modifications of those terms and definitions as they appear in the current .4 draft to Mike Duncanson for updating of draft .14.	CLOSED
20221108-5	Mr. Shellman to reach out to Chris Dilay for a determination of the likelihood and potential timeframe for his return to C63®, to inform the way ahead for draft C63.28.	CLOSED

9.3. **C63® Newsletter Input.** Mr. Hoolihan stated that the decision was made to publish the newsletter once a year to be distributed at the IEEE Symposium and that inputs would be gathered after the Spring meeting. Mr. Shellman stated that SC2 input would be provided following this meeting.

10. **Time and place of next meeting.** Mr. DeLisi stated the next series of C63[®] meetings will be held the week of October 2nd in Mountain View, CA at Google Headquarters.

11. **Adjournment.** The SC2 meeting was successfully completed as scheduled. The chairman adjourned the meeting at 1200 EST.

Attachment 1

**SC2 Meeting Attendance List (10 May 2023)
A2LA and ANSC C63[®] WebEx**

NAME	TITLE	EMAIL
Marcus Shellman	Chair, SC2	marcus.shellman.civ@mail.mil
Michael Duncanson	Secretary, SC2	michael.duncanson@validatek.com
Bob DeLisi	Chair, C63 [®]	bob.delisi@ul.com
Zhong Chen	Chair, SC1	zhong.chen@ets-lindgren.com
Ross Carlton	Chair, SC3	ross.carlton@outlook.com
Bob DeLisi	Chair, SC4	bob.delisi@ul.com
Doug Kramer	Chair, SC6	dkramer2@apple.com
Jason Coder	Chair, SC7	jason.coder@nist.gov
Janet O'Neil	Member	j.n.oneil@ieee.org
Dan Hoolihan	Guest	danhoolihanemc@aol.com
Randy Long	Guest	rlong@anab.org
Nicholas Abbondante	Guest	nicholas.abbondante@intertek.com
Victor Kuczynski	Guest	vican@on.aibn.com
Jason Nixon	Guest	Jason.Nixon@canada.ca
Aurelian Bria	Guest	aurelian.bria@ericsson.com
Henry Benitez	Guest	henry@emicomply.com
Alain Abou-Zeid	Guest	n/a
David Chamberlain	Guest	David.chamberlain2@canada.ca
Bill Graff	Guest	wgraff@us.tuv.com
Mark Arthurs	Guest	Mark.Arthurs@am.sony.com

Attachment 2

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

Electromagnetic Compatibility

Subcommittee 2: E3 Terminology Definitions and Best Practices

Chair: Marcus Shellman Vice Chair: Vacant Secretary: Michael Duncanson

May 10, 2023; 10:30 AM- 12:00 PM - EST

ANSC 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 ANSC-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)
Michael Duncanson	Secretary Subcommittee 2	DoD-Joint Spectrum Center (JSC)
Bob DeLisi	C63 [®] Chair	Underwriters Laboratories
Zhong Chen	Chair Subcommittee 1	ETS - Lindgren
Ross Carlton	Chair Subcommittee 3	Gibbs & Cox
Bob DeLisi	Chair Subcommittee 4	Underwriters Laboratories
Tom Braxton	Chair Subcommittee 5	ARRL
Doug Kramer	Chair Subcommittee 6	Apple, Inc.
Jason Coder	Chair Subcommittee 7	NIST
Stephen Berger	Chair Subcommittee 8	TEM Consulting
Janet O'Neil	Member	ETS - Lindgren
Harry Hodes	Member	Individual Member

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)** 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 ANSC-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	12/08/2020	03/09/2021	06/21/2021	09/14/2021	05/17/2022	11/08/2022
Marcus Shellman	SC2 Chair	X	X	X		X	X
Michael Duncanson	SC2 Secretary	X	X	X	X	X	X
Bob DeLisi	C63 Chair	X	X			X	X
Zhong Chen	SC1 Chair		X	X			X
Ross Carlton	SC3 Vice-Chair	X		X			X
Bob DeLisi	SC4 Chair	X	X	X	X	X	X
Ed Hare	SC5 Chair	X				X	X
Doug Kramer	SC6 Chair	X					X*
Jason Coder	SC7 Chair	X	X	X	X	X	X**
Stephen Berger	SC8 Chair						
Janet O'Neil	Member		X	X			
Harry Hodes	Member					X	

* The SC6 Chair was represented by Randy Long.

** The SC7 Chair was represented by Jeffrey Silberberg.

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](#)

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)**
- **SC2 Vice Chairman (Vacant)**
- **Michael Duncanson, SC2 Secretary (12/31/2023)**

4.2 Approval of the Scope, Duties and Membership.

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 ANSC-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 [WG report](#)) Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary.

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

5.3 ANSC-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 ANSC-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. 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: Secretary - (insert consolidated Action Item table from the previous meeting Minutes as shown below)

Consolidated Action Items from previous Meetings of SC2

#	<u>ACTION ITEM</u>	<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.	05/10/2023
20220517-4	Mr. Hodes to research, using IEC Electropedia or other sources, definitions for “reflected power,” and “net power.”	05/10/2023
20220517-5	Mr. Duncanson to reach out to Jerry Ramie for assistance in updating and maintaining the SC2 member website.	05/10/2023
20221108-1	Mr. Duncanson to provide Jerry Ramie with the approved SC2 agenda from the 11/08/2022 meeting and the approved minutes from the 17 May 2022 meeting.	05/10/2023
20221108-2	Mr. Duncanson to provide Jerry Ramie with a correction to the SC2 membership to show Doug Kramer, Apple as the chair of SC6.	05/10/2023
20221108-3	Mr. Duncanson to provide SC1 with the 20 terms and definitions in draft C63.14 sourced from draft C63.4 for review, to ensure they are identical to those in the current version of draft .4.	05/10/2023
20221108-4	Mr. Chen to conduct SC1 review of the draft .14 terms and definitions sourced from draft .4. Provide any updates / modifications of those terms and definitions as they appear in the current .4 draft to Mike Duncanson for updating of draft .14.	05/10/2023
20221108-5	Mr. Shellman to reach out to Chris Dilay for a determination of the likelihood and potential timeframe for his return to C63®, to inform the way ahead for draft C63.28.	05/10/2023

9.3 Review Newsletter input: The SC Presentation and any written report shall also be sent by the Subcommittee Chair to the ANSC-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
20230510-1					

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

NAME	TITLE	EMAIL
Mr. Marcus Shellman	Chair, SC2 (WG1/WG2)	marcus.shellman.civ@mail.mil
Vacant	Vice Chair	n/a
Mr. Michael Duncanson	Secretary, SC2 (WG1/WG2)	michael.duncanson@validatek.com
Mr. Bob DeLisi	Chair, C63 [®]	bob.delisi@ul.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. Tom Braxton	Chair, SC5	tbraxton@sbcglobal.net
Mr. Doug Kramer	Chair, SC6	dkramer2@apple.com
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	hvhodes@yahoo.com