

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

Electromagnetic Compatibility Subcommittee 4: Wireless and ISM Equipment

Chair: [Abbondante, Nick](#)

Vice Chair: [Nixon, Jason](#)

Secretary: [Jerry Ramie](#)

Oct 3, 2024

2:00 PM – 5:30 PM - EDT

Rohde & Schwarz USA, Coppel, TX / Web-meeting

Approved Minutes

1. **Call to Order: Chair** - The meeting was called to order at 2:09PM-EDT

1.1 **Announcements: Chair's remarks** - Welcome to the meeting!

1.2 **Meeting logistics announcements: Host** - (N/A)

1.3 **Introductions: Secretary – roll call** (record attending members with their affiliations and guests separately below) **Report any roster errors to the C63[®] Secretary** ([SC4 membership roster](#) from the website is shown below) Note **absences**, **excused absences** and **errors** below.

Subcommittee 4 Membership Roster

Name	Role in SC	Affiliation
Abbondante, Nicholas	Chair	Intertek (Primary Rep)
Antola, Michael	Member	UL LLC (Alternate Rep)
Case, David	Member	TIMCO Engineering Inc., an IIA Company (Expert)
Chamberlain, David	Member	ISED-Canada (Expert)
Chen, Zhong	Member	ETS-Lindgren (Primary)
Coder, Jason	Member	NIST (Primary)
DeLisi, Bob	Member	UL LLC (Primary)
Elliott, William (Mac)	Member	TÜV SÜD America, Inc. (Primary)
Friden, Jonas	Member	Ericsson AB (Expert)
Graff, William	Member	TCB Council, Inc. (Primary)
Heckrotte, Mike	Member	UL LLC (Expert)
Hodes, Harry	Member	Consultant (Individual)
Hoolihan, Dan	Member	Hoolihan EMC Consulting (Individual)
House, Jody	Member	Element Materials Technology (Alternate)
Kiemel, Greg	Member	Apple Inc. (Primary)
Klinger, Jeff	Member	Individual
Kramer, Doug	Member	Apple Inc. (Expert)
Lee, Edmund	Member	Apple Inc. (Expert)
Mahn, Terry	Member	Fish & Richardson P.C.
Mendoza, Ernesto	Member	Signify
Molaei, Nima	Member	Element Materials Technology (Primary Rep)
Nixon, Jason	Vice Chair	ISED-Canada (Expert)
Pino, Dan	Member	Element Materials Technology (Technical Expert)
Royer, Tim	Member	TIMCO Engineering Inc., an IIA Company (Primary)
Salem, Pelin	Member	Cisco Systems, Inc. (Technical Expert)
Shumakov, Denys	Member	ISED Canada (Expert)
Skoglund, Kenth	Member	Ericsson AB (Primary)

Zimmerman, Dave	Member	Spectrum EMC, LLC (Individual)
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Guests and Observers: (non-voting) Jerry Ramie, Bob Mitchell, Deanna Zakharia, Randy Long, Ho Sze Khian, Kendall Zerman, Steve Anderson, Janet O'Neil, Vignesh Rajamani, Tom Braxton, Henry Benitez, Aurelian Bria, Victor Kuczynski, John Norgard, Steve Koster, Richard Reitz, Tara Kellog, Mark Arthurs, Janeth Marcelo

1.4 Quorum: (50% of roster) constitutes a quorum. (rounding up) (28 roster members / 2 = 14 >> therefore **14 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 Consent Agenda (includes [Agenda & previous Minutes](#)): **Secretary** - The Agenda was modified and approved by acclamation. ([Previous Approved Minutes](#))

2.1 Review of the patent slides - The patent slides were reviewed and all agreed to abide by the policies shown.

3. Review of Subcommittee Membership: Secretary - Report any errors to the ANSC-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.

Member Attendance Log: Any errors in the log?

20210225	20210527	20210909	20220215	20220517	20221108	20230510	20231003	20240516	SC4 Roster:
x	x	x	x	x	x	x	x	x	Abbondante, Nicholas
x	x	x	x	x	x	x	x		Antola, Michael
x	x	x	x	x	x	x			Case, David
x	x	x	x		x	x	x	x	Chamberlain, David
x	x	x	x	x	x	x		x	Chen, Zhong
x	x	x	x	x	x	x	x	x	Coder, Jason
x	x	x	x	x	x	x	x	x	DeLisi, Bob
x	x	x	x	x	x	x	x	x	Elliott, William (Mac)
		x			x	x		x	Friden, Jonas
x		x	x	x		x	x	x	Graff, William
							x		Heckrotte, Mike
				x				x	Hodes, Harry
x	x		a	x	x	x		x	Hoolihan, Dan
			x	x	x	x		x	House, Jody
x	x	x		x	x	x	x	x	Kiemel, Greg
x	x	x	x	x	x		x	x	Klinger, Jeff
		x	x	x		x	x	x	Kramer, Doug
x	x		x	x		x	x	x	Lee, Edmund
	x				a				Mahn, Terry
x	x	x	x	x	x	x	x	x	Mendoza, Ernesto
x	x	x	x		x		x		Molaei, Nima
a		x	x	x	x	x	x	x	Nixon, Jason
x					x	x			Pino, Dan
					x			x	Royer, Tim
			x	x	x	x	x	x	Salem, Pelin
	x	x	x		x	x	x	x	Skoglund, Kenth
x	x	x				x			Zimmerman, Dave

Any members at risk? [Terry Mahn](#) is at risk.

3.2 Consideration of new SC4 members? [Application for C63® Subcommittee](#)

[Membership](#) [Soham Surve](#) has applied for Membership in SC4 [Application](#) [Resume](#) The application was approved by acclamation. [AI-71](#): Jerry to add Soham to the SC4 roster & Webex invitation list.

[Kendall Zerman](#) [Application](#) [Resume](#) (Hoolihan, DeLisi also sponsored) The application was approved by acclamation. [AI-72](#): Jerry to add Kendall to the SC4 roster & C63.10 invitation list.

4. Working Group reviews - 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 Spring Subcommittee meeting. The WG reports shall be made using either the [C63 PowerPoint template](#) or the [C63 PowerPoint template wide](#).

4.1 C63.10 Unlicensed transmitters Ed4.0 - Chamberlain -

4.1.1 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.10-202X Learn more	Procedures for compliance testing of unlicensed wireless devices	SC 4	Chamberlain, David	C63.10 PINS	See Scope of Work in Learn more text below.
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C63.10: C63.10-202X American National Standard for Testing Unlicensed Wireless Devices

Contact: [Chamberlain, David](#) (Working Group Chair)

Scope: This PINS is intended to address the following topics to be incorporated into Edition 4: (a) editorial corrections, including clarification of terms and removal of subclauses no longer deemed necessary, updating the FCC cross reference matrix and review any standards references; (b) review and clarify as necessary the administrative procedures in Clause 5 of C63.10; (c) Test reduction methods based on emerging technologies (d) Add bandwidth correction methods for when a RBW less than reference BW is used (See C63.26 4.2.3) (e) review and change as necessary Clause 5.6.3 for testing band edge requirements as power levels change (f) review and change as necessary Clause 11 (DTS) for applicability; (g) review and change as necessary procedures for UNII due to changes in FCC Rules, including TPC and antenna elevation mask testing; (h) Measurement guidance for 802.11 technologies using resource units (i) review and include as necessary DFS test procedures; (j) review and change as necessary MIMO procedures; and, (k) review and include as necessary AFC validation procedures (l) Incorporate or revise Test methods based on relevant FCC KDBs (m) Extend the frequency range (n) Radar test methods for 57-71 GHz (o) incorporate changes made in the corrigendum and amendment (p) create antenna gain measurement procedure (q) review and correct any items as necessary

Status: New project. Draft is being written

Purchase: This standard is not yet complete and not available for purchase.

Discussion of new PINS: David C. noted that our Standards were becoming cumbersome and very long. Splitting Standards into smaller "portions" seems appropriate. DTS and UNII sections can be removed from C63.10 to make it shorter. Nick said that it's taking us 9 years to get a document completed. ETSI Standards cover only one radio type and are generated more quickly. It would be useful to remove DTS & UNII from C63.10 and roll the work into a different sub-group. (Task Groups) Mac asked about test site requirements, a new doc? David did not think so. We need to start somewhere, so removing these two subjects is obvious. Bob asked what the intent for these common standards where? David thought we could work on these in various order. The draft [C63.10.DTS.UNII PINS](#) was shown:

1. → Designation of Proposed Standard: □	USEMCSC-C63.10.DTS.UNII □
2. → Title of Standard: □	American National Standard of Procedures for Compliance Testing of Unlicensed UNII and Digital Transmission System Wireless Devices □
3. → Project Intent: (Check the applicable box below) □	□
Create new American National Standard (ANS) □	X □ ANSC-C63.10—DTS-UNII-Testing—202X Edition-1 □
*Adopt identical ISO or IEC standard □	□ □
*Adopt modified ISO or IEC standard □	□ □
*AND this adoption revises this current ANS □	□ □
Revise current ANS □	□ □
Revise and Redesignate current ANS □	□ □
Revise, Redesignate and Consolidate current ANS □	□ □

There was discussion of removing other technologies. There will be more radio technologies over time. The document will still grow to be very large. Carving out separate technologies keeps the size in check. Clause 11 & 12 contain the DTS & UNII content to be moved into **ANSI C63.10.DTS.UNII**.

ISO/IEC Standard, <u>but is not an ISO/IEC</u> adoption. □	□	Standard is not an ISO/IEC standard. □
5. → Provide a brief explanation of the need for the project (see 2.5 of the ANSI Essential Requirements): □	The standard will take sections 11 and 12 from the current ANSI C63.10-2020 Issue 3 and provide targeted guidance for compliance testing of unlicensed DTS and UNII transmitters. This standard is expected to be used by manufacturers, radio and EMC test laboratories and regulatory authorities. Edition 1 of C63.10.DTS.UNII will address the items mentioned item 9, below □	
6. → Identify the stakeholders (e.g., telecom, consumer, medical, environmental, etc.): likely to be directly impacted by the standard (see 2.5 of the ANSI Essential Requirements): □	EMC and radio test laboratories and equipment manufacturers (software designers), laboratory accreditation bodies, government agencies, manufacturers of unlicensed devices, Telecommunication Certification Bodies and TCB Council. □	
7. → Unit of Measure: Non-Applicable, US, Metric, or Both □	□	□
8. → This PINS revises a previous PINS submittal (see 2.5 of the ANSI Essential Requirements): □	□	Note: A revised PINS is only required if the previously identified stakeholders have changed substantively (see item 6 on this form.) □
9. → Description of Contents of Standard: (Provide a one paragraph description, not to exceed 500 characters. Please note in the scope if this standard is intended to be submitted for consideration as an ISO or ISO/IEC JTC-1 standard.) □	<p>This PINS is intended to address the following topics to be incorporated into Edition 1 of C63.10—DTS-UNII-Testing: ¶</p> <p>(a) Remove sections 11 and 12 from ANSI C63.10-2020 to create a standard focused only on DTS and UNII testing ¶</p> <p>(b) editorial corrections, including clarification of terms and removal of subclauses no longer deemed necessary, updating the FCC cross-reference matrix and review any standards references ¶</p> <p>(c) Test reduction methods based on emerging technologies ¶</p> <p>(d) review and change as necessary DTS test methods for applicability ¶</p> <p>(e) review and change as necessary procedures for UNII due to changes in FCC Rules, including TPC and antenna elevation mask testing: - ¶</p> <p>(f) Measurement guidance for 802.11 technologies using resource units ¶</p> <p>(g) Incorporate or revise Test methods based on relevant FCC KDBs ¶</p> <p>(h) incorporate changes made to DTS and UNII testing in the corrigendum</p>	

Bob stated that we have to have them all published before we petition the FCC. Nick said this will happen a lot faster than the rest of C63.10 Ed.4 comes out. We will have to point at the 3rd edition of C63.10 until Ed. 4 is released. We have to be careful with references to avoid confusion. Nick noted that this may be a good use of "undated references" to keep the relationships intact when revising parts. Bob thought this was for the working group to address. The bullet list in Section 9 (above) were taken from the C63.10 PINS and modified. The title was changed.

Jason Nixon moved to accept the modified PINS. Seconded by Dave Case. Any further discussion? Nick noted that if this didn't work we could suspend work and return to our previous structure. No objections. The motion carried to accept this modified C63 10 DTS UNII Pins. **AI-73:** David Chamberlain to migrate [C63.10.DTS.UNII Pins SC4 final](#) text into new PINS form. (linked at left)

Dan Hoolihan moved, seconded by Ernesto Mendoza to assign the work to the existing C63.10 WG. Discussion

ensued, no objection. The motion carried to assign C63.10.DTS.UNII to the C63.10 Working Group.

4.2 C63.10 – Amend 1 - Molaei

4.3.1 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.10a-2024 Learn more	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices Amendment 1	SC 4	Molaei, Nima	No active PINS	Amendment to address NFC OBW measurements, guidance for absorber use for UWB, update frequency stability and add 6GHz NII information
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C63.10a: C63.10 AMD-1 202X American National Standard for Testing Unlicensed Wireless Devices

Contact: [Molaei, Nima](#)

Scope: Amend standard to update procedures for bandwidth, UWB, frequency stability and NII.

Status: Corrections for bandwidth measurement procedures, frequency stability, and UWB and added NII 6GH procedures based on FCC KDBs and ISSED RSS-248.

Purchase: [Search IEEE Standards](#) - Enter C63 Standard number then Search (Enter) - Click on the version you want - Click on Purchase

Bob has asked our attorney (Terry Mahn) to petition the FCC to adopt C63.10a Amd. 1 and Corr1. Jason noted that ISSED has a notice to adopt C63.10a which closes 11/29/2024. ([notice](#))

4.3 C63.26 – Licensed transmitters - Elliott

4.4.1 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.26-202X Learn more	Procedures for compliance testing of licensed transmitters	SC 4	Elliott, William	C63.26 PINS	2015 edition under revision
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C63.26-202X: American National Standard of procedures for compliance testing of transmitters used in licensed radio services

Contact: [Elliott, William](#) (Working Group Chair)

Scope: This standard covers the procedures for testing a wide variety of licensed transmitters; including but not limited to transmitters operating under Parts 22, 24, 25, 27, 90, 95 and 101 of the FCC Rules, transmitters subject to the general procedures in Part 2 of the FCC Rules and procedures for transmitters not covered in the FCC Rules. The standard also addresses specific topics; e.g., ERP/EIRP, average power measurements and instrumentation requirements.

Status: Draft is being written.

Purchase: This Draft is not yet complete and not available for purchase

4.4 C63.29 – Lighting equipment - Mendoza - Call for experts?

4.5.1 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.29-202X Learn more	Lighting products	SC 4	Mendoza, Ernesto	C63.29 PINS	New standard.
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C63.29-2022: American National Standard of procedures for compliance testing of lighting products

Contact: [Mendoza, Ernesto](#) (Working Group Chair)

Scope: This standard is intended to include procedures for compliance testing of general illumination lighting products with applicable radio regulatory requirements. This standard encompasses various technologies, from traditional lighting like fluorescent or HID, as well as novel technologies like LED and others. Related national and international standards (e.g., CISPR 15, ANSI C63.4) will be reviewed and used to the extent possible.

Status: New Standard.

Purchase: [Search IEEE Standards](#) - Enter C63 Standard number then Search (Enter) - Click on the version you want - Click on Purchase

Call for experts: Nick reports that a new working group was formed for C63.29. We need to call for experts for this group at the Main Committee. **AI-74:** Ernesto to draft a "call for experts" stating what expertise is needed. Provide this text to Jerry to circulate in SC4 and the Main.

4.5 C63.30 – Wireless Power Transfer equipment - Thul

4.6.1 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.30-2021 Learn more	Wireless Power Transfer Products	SC 4	Thul, Travis	C63.30 PINS	Published. WG disbanded.
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C63.30-2021: American National Standard of procedures for compliance testing of Wireless Power Transfer products

Contact: [Thul, Travis](#) (Working Group Chair)

Scope: This standard is intended to include procedures for compliance testing of several different types of Wireless Power Transfer (WPT) products with applicable electromagnetic compatibility (EMC) and radio regulatory requirements. Test procedures will focus on radiated field and conducted measurements and may reference established standards. WPT RF exposure compliance procedures will not be included, although standards pertaining to laboratory EMF safety may be referenced. WPT testing methods may consider, but are not limited to, large in-situ installations, charging systems for electric vehicles (including impact of host on electromagnetic fields), house-hold appliances, and desktop chargers. Consideration will also be given to appropriate testing distances and test locations (such as Semi-Anechoic Chambers, Open Area Test Sites, ground plane, and earth sites). Related national and international standards (e.g., CISPR, SAE, etc.) will be reviewed and used to the extent possible.

Status: Balloting complete – document passed. WG disbanded.

Purchase: [Search IEEE Standards](#) - Enter C63 Standard number then Search (Enter) - Click on the version you want - Click on Purchase

4.6 C63.31 – ISM equipment - Abbondante

4.7.1 Status Matrix Review Verify accuracy of document [status matrix](#) content and report any errors to the ANSC-C63® Secretary. **Is this information correct? (Yes)**

C63.31-draft Learn more	ISM equipment (MP-5)	SC 4	Abbondante, Nicholas	C63.31 PINS	New standard. Draft being written.
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C63.31-draft: American National Standard for compliance testing of Industrial, Scientific and Medical (ISM) Equipment

Contact: [Abbondante, Nicholas](#) (Working Group Chair)

Scope: This standard is intended to include procedures for compliance testing of traditional ISM equipment (industrial heaters, dielectric heaters, food tempering equipment, microwave ovens, medical diathermy equipment, etc.) with applicable EMC and radio regulatory requirements. Related national (FCC/OET MP-5) and international standards (e.g., CISPR, IEEE) will be reviewed and used to the extent possible.

Status: New standard. Draft being written.

Purchase: Not yet available for sale.

5. Old Business: Chair

5.1 Written reports - Written reports of this Subcommittee meeting shall be presented by the Subcommittee Chair at the Main Committee meeting. These reports shall be made using the [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](#)

WG Reports:

C63.10 - [report](#)

----- Break -----

C63.26 - [report](#) - aiming the antenna (discussion) is in the report. AI-24: was presented. (below)

AI-24	Harmonize high frequency testing to 15 deg azimuths with sweep around max / linear scanning without pointing at EUT / scan height of EUT	Ryan TG / Nick / Andy Griffin /	10/31/2024	Open
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C63[®]
**Accredited National Standards
Committee C63[®] - EMC**

Working Group Status

- Working Group meetings have been held more often as discussed at last F2F.
- The Working Group has successfully resolved all open comments in initial review.
- Significant progress has been made.
- Several issues sent back to Task Groups and these issues have been resolved.
- The Working Group met face-to face Tuesday May Oct 1st and held a productive meeting addressing various issues that needed to be addressed such as the section added to address "worst-case".
- Working group meetings will continue to be held as much as needed until we can get the remaining action items finished as soon as possible. Action Item owners will meet more frequently.
- Discussion on going forward with proposal to remove the requirement to point the antenna at the source of the emissions, replacing it with a linear height scan instead, and limit the antenna height scan to 2.5m.
- The list of open action items, besides comment resolution are:

2

We defined far-field in AI-35:

AI-35	Justification for $D^2/2\lambda$ from CISPR 16-2-3 / other	Nick	10/31/2024	Open
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AI-75: Mac Elliott to draft a re-affirmation PINS for the existing version of C63.26

AI-24	Harmonize high frequency testing to 15 deg azimuths with sweep around max / linear scanning without pointing at EUT / scan height of EUT	Ryan TG / Nick / Andy Griffin /	10/31/2024	Open
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Discussion of antenna aiming: Nick noted that aiming the antenna is being replaced by a linear height scan to 2.5m. We had an Action Item from Google to harmonize with C63.4. (see AI-24 above) How do we determine where the source of the emission is? It was addressed with "bore-sighting" the antenna. There are "functional" issues with this and variance in techniques. Ground bounce is always present. (ripple during elevation) Antenna patterns are not controlled and hence yield less repeatable results. Absorber could be placed on the floor, but moved around to service the EUT or change them. Absorber damage is common. We want to be harmonized across C63 Standards. A cell phone may have licensed and unlicensed radios on-board and we'd want common test methods. Is there consensus here in SC4 to eliminate antenna aiming? Zhong pointed out that antenna factors are measured at the bore-sight position. Without aiming, you're measuring off-axis with undefined antenna factors. The compromise was to stop at 2.5m height scan.

Greg Kiemel commented that he agreed with removing bore-sighting. The text in AI-24 about indexing was problematic. Nick noted that the scanning speed of the receiver was important. The whole freq. range needs to be covered during scanning. (step/stop or continuous scanning)

Victor K. stated that the goal was simplification and repeatability. More data is needed.. it's coming from Zhong in

C63.26WG. The consensus in SC1 was to proceed. Mac reported that the C63.26 WG was in agreement. Nick proposed a vote within this SC to gauge the level of support for not aiming the antenna. Opposition from Harry Hodes. Any others? Zhong Chen opposed. Harry may disagree, it's clear that many others don't. There will be a difficult transition: we rearrange the paragraphs and structure within the C63.4 draft. How to assess conformance? There will be confusion. Also, C63.4 is not the only community affected by this change. We may need a guide (cross-walk) to help people transition. Labs purchased bore-sight masts that are now obsolete. (before 5 year write-off) This train may have "left the station" but we're imposing additional costs. (out of scope in this SC)

Bob Mitchell asked why we don't just use a FAR to eliminate ground bounce? We're not adding absorber to simulate a FAR and don't believe a linear scan will not correlate well to a FAR. Nick discussed lab investments in bore-sighted masts. All the masts can be converted to linear by turning off the tilt (change the cam plate) Harry bought several brands of bore-sighted masts and they all required manual adjustment. There will be repairs to keep them running. Masts purchased in the future will be less expensive and shorter in height.

Any other objections? Victor supports further work to generate more data. Zhong opposed linear scan. David Chamberlain, Jason Nixon, Denys Shumakov, Mac Elliott and Kenth Skogland abstained. Others on the roster who did not object or abstain must support the change. An annex to C63.4 will address this topic. Zhong has a slide deck from the [University of Magdeburg](#) addressing this.

C63.29 - [report](#)

C63.30 - Nick contacted Travis Thul, who will work on a PINS but cannot become the next Chair

C63.31 - [report](#)

5.2 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.

5.2 Coordination with SC3 for harmonization – Are there any documents that need to be brought to SC3 for harmonization? WG chairs to provide input:

6. New Business: Chair

6.1 - New work items? – open discussion for SC4 – Chair -

6.2 - ~~Review Scope, Duties and Membership – Chair~~ - (Spring meeting only)

7. [C63.org](#) website use and updates: Secretary - We normally post documents to the [SC4 protected area](#). If any SC or WG needs help with this posting, a Technical Secretary is available to assist.

8. Review of the Action Items: Secretary

8.1 Review of Action Items from this meeting: (read Action Items to Members, who must agree that they understand their meaning)

8.2 Review of Action Items from previous meeting: Consolidated Action Item table from the previous meeting Minutes is shown below:

Consolidated Action Items from 5/16/24 Meeting of SC4

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-63:	Jerry to add Mr. Suryadevara to the C63.10 roster and Webex invitation list.	Jerry Ramie	Closed	Next meeting	Added 5/23
AI-64:	Jerry to add Dr. Shumakov to the C63.10, C63.26 and SC4 rosters	Jerry Ramie	Closed	Next meeting	Added 5/23
AI-65:	Jerry to remove this C63.10 Cor1 item from the next SC4 Agenda	Jerry Ramie	Closed	Next meeting	Removed 9/11/24
AI-66:	Jerry to remove this MIMO white paper item from future SC4 Agendas	Jerry Ramie	Closed	Next meeting	Removed 9/11/24

AI-67:	Jerry to modify MIMO matrix listing under "Purchase" to state "Publicly available at this link:" (Xplore)	Jerry Ramie	Closed	Next meeting	Modified 5/27
AI-68:	Jerry to provide modified C63.29 PINS for Main Committee consideration (Pins 3)	Jerry Ramie	Closed	Next meeting	Pins 3 sent to Jennifer 5/27
AI-69:	Nick to call a meeting of interested persons to produce this Unified Methods outline . (David C, Andy G, N. Abbondante, H. Hodes, R. Long, B. DeLisi)	N. Abbondante D. Chamberlain Andy Griffin Harry Hodes Randy Long Bob DeLisi	Open	Next meeting	Next step is to generate a PINS
AI-70:	Nick to assemble discussion group with Popovici, Nick, Bob D, T. Thul, C. Beattie to develop a C63.30 PINS	N. Abbondante H. Popovici Bob DeLisi Travis Thul Chad Beattie	Open	Next meeting	Need a Chair

9. Time and place of next meeting: Chair - Week of May 5, 2025 @ TUV in Boxborough, MA

10. Closing remarks and Adjournment: Chair - Thanks for your participation and discussion. The meeting was adjourned at 5:29PM-EDT.

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

Consolidated Action Items from 10/03/24 Meeting of SC4

Action Item #	Subject	Responsible Person(s)	Status	Delivery Date	Comments
AI-69:	Nick to call a meeting of interested persons to produce this Unified Methods outline . (David C, Andy G, N. Abbondante, H. Hodes, R. Long, B. DeLisi)	N. Abbondante D. Chamberlain Andy Griffin Harry Hodes Randy Long Bob DeLisi	Open	Next meeting	Next step is to generate a PINS
AI-70:	Nick to assemble discussion group with Popovici, Nick, Bob D, T. Thul, C. Beattie to develop a C63.30 PINS	N. Abbondante H. Popovici Bob DeLisi Travis Thul Chad Beattie	Open	Next meeting	Need a Chair
AI-71:	Jerry to add Soham to the SC4 roster & Webex invitation list.	Jerry Ramie	Closed	Next meeting	Added 10/15
AI-72:	Jerry to add Kendall to the SC4 roster & C63.10 invitation list	Jerry Ramie	Closed	Next meeting	Added 10/15
AI-73:	David Chamberlain to migrate C63.10.DTS.UNII Pins SC4 final text into new PINS form	D. Chamberlain	Closed	Next meeting	"final" PINS linked
AI-74:	Ernesto to draft a "call for experts" for C63.29 stating what expertise is needed. Provide this text to Jerry to circulate in SC4 and the Main.	Ernesto Mendoza	Open	Next meeting	
AI-75:	Mac Elliott to draft a re-affirmation PINS for the existing version of C63.26	W. Elliott	Open	Next meeting	