



## *Sub-Committee 1 Minutes Jan 2023*

### **IEEE/ICES TC95 Subcommittee 1 Techniques, Procedures, Instrumentation and Computation 16:00 – 18:00 UTC: 17 January 2023 Cambria Hotel in Chandler, Arizona & via WebEx conference**

#### **0. Registration of attendees**

Subcommittee 1 (SC-1) on Techniques, Procedures, Instrumentation and Computation meeting convened from 09:00 local on 17 January 2023 Cambria Hotel in Chandler, Arizona and Via WebEx. Attendees were welcomed and registered using the sign in sheet, chat function of WebEx and email notification.

#### **1. Call to order**

At 09:00 UTC the meeting was called to order by SC-1 Co-Chair, (Zollman). All attendees were again welcomed, especially those who were attending at unsociable times of their day.

SC-1 Co-Chair, (Zollman) clarified that following the publication of C95.3 in May 2021, SC-1 is currently a forum for sharing experience, best practice and establishing collaborative activities relating to EMF assessments and is complementary to other ICES sub-committees.

#### **2. Approval of agenda**

With an amendment to the title of the Tell presentation, the draft SC-1 agenda was proposed and accepted by the committee on a motion from Lapin with Maxson seconding and was approved. (Attachment 1)

#### **3. Approval of the June 2023 SC-1 meeting minutes / matters arising**

With attachment 2 amendments: “23 Attendees (based on Chat reports and email notifications)”, addition of Amnon Duvdevany to attendees, and removal of “Austin TX” from Matt Butcher listings, the June 2022 SC1 meeting minutes were accepted on a motion from Hatfield and seconded by Butcher.

June 2022 SC-1 action: PZ reported that at the October 2022 ADCOM meeting he had briefed on the discrepancy between ICNIRP and FCC compliance limits. ADCOM actioned SC-3 and SC-4 to establish a task force to progress the matter.

#### **4. Update of SC-1 membership**

The SC-1 Co-Chair (Zollman) called the SC-1 membership on hand to provide their contact information in the chat function of WebEx, send an email as indicated in the agenda or via the sign-in sheet at the meeting. 44 people indicated their participation (Attachment 2).



Zollman reported that, based on the current operating procedures, there are 65 SC-1 “Members” and 28 “Observers”. He also reported that new ICES policies and procedures are in the process of being finalized/implemented and this may result in a review of everyone’s status in ICES.

#### **5. Call for Patents**

In the meeting announcement and the draft Agenda circulated prior to the meeting, the SC-1 members had been asked to state if they had any essential patent claims. No such claim has been recorded. SC-1 Co-Chair (Zollman) asked if anyone now in the meeting had any such claims. Again no one made any claim.

#### **6. Copyright Policy**

In accordance with IEEE\_SA procedures, the SC-1 Co-Chair (Zollman) reminded the attendees of the IEEE\_SA copyright policy linked from a footnote in the meeting agenda.

#### **7. Presentation: Adoption of IEC 62232:2022 + Update of IEC 62269 TR – Butcher** (Attachment 3)

Summary of recently published IEC 62232:2022 and start of revision to IEC 62269.  
Discussion of Actual Maximum technique and Beamforming antennas.

#### **8. Where to next?**

Three presentations were given on SC1 subjects:

##### **a) “Items for further study” Annex I IEEE Std C95.3-2021 (Zollman)** (Attachment 4)

Annex I of C95.3-2021 lists a number of items for further study to assist in the future development of C95.3 and inspire contributions from subject experts. Activities in these areas were listed including:

- Work on spatial averaging in a group headed by Vitas Anderson and a possible source of data from extensive amateur radio modelling by Peter Zollman
- Need for assessments for non-human “exposures” to support C95.7 with potential linkage to EMC
- An approach developed for amateur radio assessments defining simple criteria that can demonstrate compliance with an exposure limit for certain cases

The meeting was also reminded of other topics cited in Annex I of C95.3-2021. Following a brief discussion, it was agreed in principle that SC-1 should consider developing guides on such topics in advance of the next revision of the C95.3 recommended practice.



**b) Spatial Averaging Working Group update (Ludick/Anderson)**  
(Attachment 5)

Ludick presented a summary of the work presented at the Standards Australia TE-007 spatial averaging working group update (16th Dec 2022).

**ACTION: The SC-1 CoChairs to coordinate a WebEx meeting focused on spatial averaging.**

**c) The intermittent exposure issue associated with beam forming antennas (Tell)**  
(Attachment 6)

Tell presented the challenges in evaluating RF exposure from sources where the amplitude and directionality are continually changing.

**9. Any other business**

No other business was discussed.

**10. Time and Place of Next Meeting:**

Next meeting will be in person, currently scheduled for Oxford, UK, and via WebEx in June 2023 prior to the next scheduled TC95 meeting. SC-1 date to be determined depending on the decision of AdCom. In the meantime, if SC-1 participants are willing to present on a suitable topic, the Co-chairs are prepared to organize additional Webex meetings prior to then.

**11. Adjourn**

On a motion from Lapin, with Hatfield seconding, the meeting adjourned at 11:45 local.



## Attachment 1

### IEEE/ICES TC95 Subcommittee 1 Techniques, Procedures, and Instrumentation Agenda: 17 Jan<sup>1</sup> 2023 Meeting

Cambria Hotel in Chandler, Arizona & Via [WebEx](#) (click to join)

	<a href="#">Los Angeles</a>	<a href="#">Phoenix Face2Face</a>	<a href="#">New York</a>	<a href="#">London (UTC)</a>	<a href="#">Amsterdam</a>	<a href="#">Jerusalem</a>	<a href="#">Beijing</a>	<a href="#">Tokyo</a>	<a href="#">Sydney</a>	<a href="#">Auckland</a>
Start Time	Tue 08:00	Tue 09:00	Tue 11:00	Tue 16:00	Tue 17:00	Tue 18:00	Wed 00:00	Wed 01:00	Wed 03:00	Wed 05:00
Start Date	Tuesday 17 Jan 2023						Wednesday 18 Jan 2023			
Duration	Approximately 2 Hrs									
<b>Attendance:</b> <b>Face-to-Face:</b> Please fill in the attendance sheet at start of meeting <b>WebEx:</b> Please enter your Name, Affiliation, Country in chat message or send email <a href="#">when joining meeting to c95.3@sublight.net</a> Subject: Present at TC95-SC1 Jan 23, and your Name, Affiliation, Country										

1. Introduction & Call to Order
2. Modifications and approval of agenda
3. Approval of SC-1 Minutes (Jun 2022 meeting) and matters arising
4. Update of SC-1 Membership
5. Call for Patents<sup>2</sup>
6. Copyright Policy<sup>3</sup>
7. Adoption of IEC 62232:2022 + Update of IEC 62269 TR (Butcher)
8. Where to next?
  - “Items for further study” Annex I IEEE Std C95.3-2021 (Zollman)
  - Spatial Averaging Working Group update (Ludick/Anderson)
  - The intermittent exposure issue associated with beam forming antennas (Tell)
9. Any other business
10. Time and Place of Next Meeting
11. Adjourn

<sup>1</sup> 18 Jan for Far East, Australasia, and New Zealand

<sup>2</sup> Participants have a duty to inform the IEEE of holders of essential patent claims if they or their affiliations hold such claims. Check the web link on the agenda for more details. If anyone in this meeting is personally aware of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please notify the committee chair today. The IEEE SA patent policy is explained at the following link:  
<https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf>

<sup>3</sup> It is the policy of the IEEE to own the copyright to the technical contributions it publishes on behalf of the interests of the IEEE, its authors, and their employers, and to facilitate the appropriate reuse of this material by others. The IEEE copyright policy is explained at the following link:  
<https://www.ieee.org/publications/rights/copyright-policy.html>



## Attachment 2

### Participants in SC-1 17 January 2023 meeting

44 Attendees (based on attendance sheet, chat reports, and email notifications):

#### Present at venue:

- Azuka Anuniru, Raytheon
- Matt Butcher, Sublight Engineering (TC95 SC1 Co Chair)
- C-K. Chou, TC95 Chair
- Robert Cleveland, EMF consulting
- Phil Dew, Wavecontrol
- Roel Escobar, USAF AFMC 711 HPW/RHDR
- Antonio Faraone, Motorola Solutions Inc.
- Romeo Gallamoza, U.S. Army Public Health Center
- Kevin Graf, FCC
- Raymond Harmon, US naval Surface Warfare Cntr.
- Jim Hatfield, Hatfield & Dawson
- Bob Johnson, EMF Safety LLC
- Greg Lapin, ARRL
- Stephen Lockwood, Hatfield & Dawson
- Danie Ludik, Stellenbosch University, SA
- David Maxson, Isotrope LLC
- Tim Mikulski, US Army
- Richard Murphy, Raytheon
- Pat Roder, IEEE SA
- Joshua Salmon, Raytheon
- Darang, Tech, Dtech Communications
- Auke Visser, Royal Netherlands Navy
- Xun Zhao, DND Canada
- Peter Zollman, PZC, UK (TC95 SC1 Co Chair)

#### Present via WebEx:

- Aymen Ben Saada, Higher School of Communication of Tunis, Tunisia.
- David Cotton, Waterford Consultants
- John DeFrank, Defense Centers for Public Health
- Martin Doczkat, FCC
- Amnon Duvdevany, Israel Institute for Occupational Safety and Hygiene, Israel
- Kevin Fisher, Fisher and Smith
- James Futch, Department of Health FL
- Petter Gärdin, Sweden



- Martin Gledhill, EMF Services
- Don Haes, Consultant, NH-USA
- Efthymios Karabetos, Greek Atomic Energy Commission
- Jeff Lodwick, OSHA
- Courtney Lopez
- Rajat Mathur, Hammett & Edison, Inc.
- Gulmira Mustapaeva, FCC
- Andrea Schiavoni, TIM
- Florian Soyka, Institute for Occupational Safety and Health of the German Social Accident Insurance, Germany
- Ric Tell, Richard Tell Associates, Inc.,
- Art Thansandote, Health Canada (Retired)
- Yujuan Zhao, Intel