IEEE SA STANDARDS ASSOCIATION

IEEE P2520.1 Working Group #22
Meeting Minutes
27 March 2023
WG Chair: James Covington
WG Secretary: H. Troy Nagle

Call to Order
Chair called meeting to order at 10:05 AM EDT. He announced that the meeting was being recorded for the purpose of preparing minutes.

1. **Roll Call and Disclosure of Affiliation**
   Affiliation FAQs: http://standards.ieee.org/faqs/affiliation.html
   The Chair announced that participants can sign-in at this link:
   https://docs.google.com/spreadsheets/d/1x3Le7jd_5h3bgiNcYMZIfjIbzE2XdE0U8Daon00O8Ks/edit#gid=0.
   The Chair asked the Secretary to check for a quorum. One new member was introduced. The List of Participants is shown in **Attachment A**. A quorum was achieved (12 of the 17 voting members were present).

2. **Approval of Agenda**
   The Chair asked for approval of the agenda. Duke Oeba made the motion; Susana Palma seconded. Without objection to unanimous consent, the motion was adopted.

3. **Approval of Previous Meeting Minutes**
   Minutes for WG#20 and WG#21 were considered. Krishna Persaud moved for approval; Fengchun Tian seconded. Without objection to unanimous consent, the motion was approved.

4. **IEEE-SA Patent & Copyright Policies**
   a. Call for Patents
   https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf
   Per standard IEEE SA WG meeting practice, the Chair displayed the required policy regarding potentially essential patents. No one raised concerns for consideration.
   b. Copyright Policy   https://standards.ieee.org/ipr/copyright-materials.html
   Per standard IEEE-SA WG meeting practice, the Chair displayed the required policy regarding copyrights. There were no questions or concerns.

5. **Discussion of funding application**
   The IEEE Technical Activities Board Committee on Standards (COS) makes grants on the order of $10K for projects that enhance the development of new standards. We explored this in Summer of 2022 with the following concept. First hold an online workshop with ISOCS to refine a testing plan funded by COS as follows:

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Expense	Amount	Description	Term
Odorants	$2,500	Purchase of odorant(s) for a series of minimum three odor testing trials	September 2022 to December 2022
Testing fees	$6,500	Setup and testing time on the specific odor monitoring equipment	January 2023 to March 2023
Workshop	$1,000	For support of an online platform.	April 2023

Their response was positive, but the carry-over of funding to 2023 raised concerns. The 2023 version of the COS program now allows carry-over and we can reapply. The Chair will revise the proposal and resubmit. Collaboration with some commercial partners will be explored.

6. **Discussion on scoring system for Level 2**
Level 2 is a classification test employing a choice of three chemicals from our Appendix. A **measurement** is the process of exposing the EUT to a specific chemical at a specific temperature **setting** and specific humidity **setting** (pressure is assumed to be a constant). During a measurement period (**MP**), the three chemicals are measured by the EUT in a specified order.
The testing can be described in four sublevels:
  LVL2-1: Three different MPs at standard temperature and humidity settings (9 measurements)
  LVL2-2: Repeat LVL2-1 at two more temperature settings, all at standard humidity (18 more measurements)
  LVL2-3: Repeat LVL-1 at two more humidity settings, all at standard temperature (18 more measurements)
  LVL2-4: Repeat the one-day complete tests (the 45 measurements of LVL-1, LVL-2, and LVL-3) two more times, skipping a day between the complete tests (90 more measurements)

So how can we set the passing criteria. How many failures can we tolerate? The Chair suggested we consider the following three options. He noted that the specific passing numbers will be updated after further discussion.

LEVEL 2 – PASS/FAIL

To pass Level 2 testing the EUT should be able to:

- i. For LVL2-1 correctly identify 2 MPs or more out of 3 MPs
- ii. For LVL2-2 correctly identify 7 MPs or more out of 9 MPs.
- iii. For LVL2-3 correctly identify 7 MPs or more out of 9 MPs.
- iv. For LVL2-4 correctly identify 43 MPs or more out of 54 MPs.

- i. For LVL2-1 correctly identify 33 or more out of 36 measurements
- ii. For LVL2-2 correctly identify 99 or more out of 108 measurements
- iii. For LVL2-3 correctly identify 99 or more out of 108 measurements
- iv. For LVL2-4 correctly identify 594 or more out of 648 measurements.

- i. For LVL2-1 correctly pass all settings.
- ii. For LVL2-2 correctly pass 2 out of 3 settings
- iii. For LVL2-3 correctly pass 2 out of 3 settings
- iv. For LVL2-4 correctly pass 4 out of 6 settings

After some discussion, the **settings** option was dropped. Further consideration of the **MP** and **measurements** options will continue. Combining them in some fashion was suggested.

7. **Discussion on testing of the standard**
   The Chair then continued the Methods Testing Protocols discussion from our last session. The Methods Sheets can be an Appendix to the standard. Currently we have seven Methods:

   - Method 1: Syringe autosampler

   - Method 2: Positive pressure gas flow

   - Method 3: Sample bags with negative pressure

   - Method 4: Sample bags with barrel

   - Method 5: Headspace collection

   - Method 6: Permeation tubes

   - Method 7: Point source

The Chair shared an example Methods Template. Sections suggested were Description, Sample Collection, Temperature Control, Humidity Control, and Pre-Concentration. A draft for Method 1 (autosampler) was reviewed. How much detail is needed? For any specific EUT configuration, the Methods description needs a lot of

detail. One suggestion was to prepare Application Notes for specific setups from some of our systems to give industry developers a model for how to promote their offerings. The Application Note guidelines might be included in Guides for later standards in the series.

8. **New Business/Activities for the Next Meeting**
    There was no New Business.

9. **Future Meetings**
    The Chair announced that the next meeting (WG#23) will take place on April 24 at 10:00 AM EDT.

10. **Adjourn**
    The meeting time having expired and without objection, the Chair adjourned the meeting at 11:09 AM.

Attachment A: Participants (14)

NAME	AFFILIATION
Ashok Masilamani	NOZE
Carlos Diaz	Ambiente et Odora
Cyril Herrier	Aryballe
Duke Oeba	Egerton University, Kenya
Ehsan Danesh	Advanced Sensing Technologies Ltd.
Fengchun Tian	Chongqing University
James Covington	University of Warwick
Krishna Persaud	University of Manchester
Paul Kagan	AWLDM Systems
Radislav Potyrailo	GE Research
Sandrine Isz	Alpha-MOS
Susan Schiffman	North Carolina State University
Susana Palma	NOVA University of Lisbon
Troy Nagle	North Carolina State University