

IEEE P2520.1 Working Group #20

Meeting Minutes

30 January 2023

WG Chair: James Covington

WG Secretary: H. Troy Nagle

Meeting link:

<https://ieeesa.webex.com/ieeesa/j.php?MTID=m141a771c6bb0bbd708f9f412cfbf2bfd>

1. Call to Order

Chair called meeting to order at 10:04 AM EST. He announced that the meeting was being recorded for the purpose of preparing minutes.

2. 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_5h3bgiNcYMZIfjIbzE2XdE0U8Daon0008Ks/edit#gid=0.

The Chair asked the Secretary to check for a quorum. No new members were participating. The List of Participants is shown in **Attachment A**. A quorum was achieved (14 of the 19 voting members were present).

3. Approval of Agenda

The Chair asked for approval of the agenda. Krishna Persaud made the motion; Fengchun Tian seconded. Without objection to unanimous consent, the motion was adopted.

4. Approval of Previous Meeting Minutes

The Chair reviewed and asked for approval of the October 31 Meeting Minutes. Krishna Persaud made the motion; Susan Schiffman seconded. Without objection to unanimous consent, the motion was adopted.

5. 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.

6. Review of current progress and activities for 2023

The Chair reviewed our progress on the standard to date and summarized our goals for the rest of 2023:

CURRENT STANDARD PROGRESS

- Created v17.0 of the standard (18 pages long!)
- Contains draft of the three levels and operator requirements
- Tests for environmental variations and concentration differences
- Selected initial test chemicals and concentrations
- 2023:
 - We have 10 meetings for 2023 (loss due to summer break)
 - First complete draft of standard (?)
 - Testing protocols defined
 - Define what “boiler plate” documentation we need
 - Reporting documentation and paperwork
 - Test the standard (??)

7. Review of the standard as a whole and identification of areas of further development

The Chair reviewed that we have agreed to use Silhouette and MAPE testing for Levels 1 and 3 but need now to determine a testing method for Level 2. It was suggested that we let the instrument operator define their implementation of “neutral” air. We have not yet defined the accuracy specifications for meeting Level performance expectations.

8. Discussion on testing of the standard

Next the Chair opened a discussion of testing protocols.

TESTING PROTOCOLS

- Need to generate testing protocol to allow evaluation of the standard
- Expecting this to take all of Q1 and some of Q2 of 2023
- This is likely to be included in P2520 master document and P2520.1 standard as “boiler plate material”
- Probably impossible to create documentation for every possibility, but should cover main ones + variances
- Maybe 4 methods?
- Need to use either cylinders, liquids, at different concentrations, with temperature and humidity changes – leaving pressure out.

Our next challenge is to write a narrative telling operators how to use the standard to test their instruments. We can't cover all testing methods, but we can give them four or five examples that we have implemented. We can clearly point out that pressure is not a variable but should be in a standard range and documented.

Then the Chair displayed a Testing Protocols Table and engaged the WG in entering their suggestions. The final result is shown below:

TESTING PROTOCOLS 2

Sample Collection	Chemical media	Concentration Control	Temperature Control	Humidity Control	Pre-concentration
Syringe headspace Autosampler – Positive pressure	Liquid phase in a vial	Dilute with liquid	Heat/cool(?) the vial	With difficulty...Possible to add water to air line	Yes – SPME, Tenax etc.
Gas flow control – Positive pressure	Gas cylinder	Mixing with neutral air	Heat/cool sample on gas line?	Bubbler or wet line mixed through MFC	Unlikely
Sample bags – Negative pressure Need to add purge.	Gas cylinder, liquid + neutral air (with pump to add gas)	Dilute with liquid and/or air? Mixing with neutral air	Heat/cool bag in environmental chamber	Fill bag with humid air. Add pure water to bag (DI water).	Yes, SPME, Tenax etc.
Sample bags – in a barrel with valve on top	Gas cylinder, liquid + neutral air	Dilute with liquid and/or air? Mixing with neutral air	Heat/cool bag in environmental chamber	Fill bag with humid air. Add pure water to bag (DI water).	Yes, SPME, Tenax etc.
Headspace collection with flow control	Liquid phase in a vessel	Dilute with liquid and/or mix with neutral air	Heat/cool sample on gas line?	Bubbler or mixed humid line	Yes, Tenax
Point source	Gas cylinder or liquid	Diffusion/distance from source	Heat/cool whole lab/environmental chamber	Humidify whole test area/environmental chamber.	Unlikely

9. Discussion on funding opportunities

This topic was deferred to a future meeting.

10. New Business/Activities for the Next Meeting

There was no New Business.

11. Future Meetings

The Chair announced the next meeting (WG#21) will take place on February 27 at 10:00 AM EST.

12. Adjourn

The one-hour meeting time-period having expired and without objection to unanimous consent, the Chair adjourned the meeting at 11:02 AM.

Attachment A: Participants (14)

NAME	AFFILIATION
Christopher Jensen	Self
Duke Oeba	Egerton University, Kenya
Ehsan Danesh	Advanced Sensing Technologies Ltd.
Fengchun Tian	Chongqing University
Hua-Yao Li	Huazhong University of Science and Technology
James Covington	University of Warwick
Katayoun Emadzadeh	Self
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