IEEE P2520 Working Group Meeting #3 Minutes
8 July 2019 / 10:00 AM – 11:30 AM (EDT)
Teleconference

Approved: 7/22/2019

Voting Members Present: Krishna Persaud, Troy Nagle, Susan Schiffman, Yogesh Gianchandani, James Covington, Hua-Yao Li, Omer Oralkan, Jan Mitrovics, Howard Choe, Rachel Sunghee Lee, Susana Palma, Victor Huang

Voting Members Absent: Luis Hoffman, Peter Hesketh, Mike McGinley, Radislav Potyrailo, Hugo Gamboa

Staff: Vanessa Lalitte, IEEE-USA

1. **Call to Order – WG Chair, Susan Schiffman**
   The Agenda was displayed to the attending WG members at 10:00 AM EDT. WG Chair Susan Schiffman called the meeting to order at 10:03 AM. She welcomed the participants to the third meeting of the Working Group to develop an IEEE Standard for Testing Machine Olfaction Devices and Systems. An announcement was made about recording the session for minute-preparation purposes. The file will be destroyed after the Minutes have been approved unless speakers have agreed to have their presentations archived.
2. **Roll Call of Individuals & Declaration of Affiliation – WG Secretary, Troy Nagle**
   The Secretary asked everyone present to enter their names into the Chat window. New members were asked to include their affiliation and email address. The Secretary asked that Approval of the Minutes be delayed to the end of the meeting to allow additional members to join.
3. **Approval of Agenda – Schiffman**
   The Agenda displayed at the opening of the meeting was adopted without objection.
4. **IEEE Patent Policy – Schiffman**
   The WG Chair briefly reviewed the IEEE-SA Patent policy. This item is required for every WG meeting. Susan presented slide #3 of the set of slides located at:
   https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf
5. **Today's Discussion**
   a. EU Odor Standards History: Jan Mitrovics provided a short review of a GOSPEL (General Olfaction and Sensing Projects on a European Level) Network of Excellence in Artificial Olfaction project from about 15 years ago. He agreed that the recording of his presentation can be archived by the WG. However, the IEEE-SA regulations do not allow such posting. **Action Item 1:** Troy will request a copy of Jan's slides. We are allowed to include a link to presentation slides in our Minutes. Here is a link to Jan's slides:
   https://ieee-sa.imeetcentral.com/2520/folder/WzIwLDExOTgxODExXQ/WzIsNjUyNzQyNDhd/

   b. Future IEEE P2520 Directions Survey: In WG Meeting #2, the purpose of this Questionnaire was explained to help us narrow our focus on some elements for inclusion in our first Standard. The Questionnaire should rank-order potential application areas, suggest important sensor configurations, explore the type of standard to be developed, investigate conformance requirements and methods, and consider desirable performance parameters and metrics. James Covington reviewed a draft list of seven questions that the Questionnaire subcommittee has developed (see **Attachment 1**). A lively discussion ensued. When that general discussion concluded, two additional Action Items were assigned. **Action Item2:** Krishna Persaud agreed to

make some edits and return Susan later in the week. **Action Item 3:** Susan will include her edits and distribute the Questionnaire to the WG soon thereafter. The Questionnaire will be a major agenda item in our next WG meeting.

c. Use Case Ideas: Troy presented a brief list of ten example use cases in which enose technology might be appropriate (see **Attachment 2**). This item will be explored in more detail in the Questionnaire. The consensus among the WG was that we conduct a broad search for such cases, and then narrow the WG's focus onto clusters of uses in which an enose instrument might be applied with tailored sensor combinations. The WG could write a broad overarching standard on the design and implementation process for creating a commercially viable enose, and then produce a series of application-specific implementation standards for clusters of high-impact use cases**. Action Item 4**: Each WG Member should include interesting use-case suggestions in her/his Questionnaire response.

6. Topics for Future Meetings - Schiffman

a. EU Odor Standards History: Jan suggested that we invite Santiago Marco to speak about his contributions to the GOSPEL standards effort. They employed the IEEE 1451 Standard to build demonstration hardware units. **Action Item 5:** Troy and Jan will contact Santiago about giving a presentation and joining our WG.

b. Environmental Standards Efforts: This item will continue on our future topics list. Jan knows about some air quality initiatives that may be of interest to our WG. **Action Item 6**: Jan will reach out the VDI (Tomas Poster, Emissions and Ambient Air Instrumental Monitoring initiative, CEN/TC264/WG41) to solicit collaborators.

c. Enose best practices: This item will continue on our future topics list. Can we find some veterans of early enose companies who can share their experiences regarding "what works" and "what does not" in this field?

d. The enose market: This item will continue on our future topics list. Can we find an enose market expert to help us rate example use-case clusters?

7. New Business

There was no New Business.

8. Approval of Minutes

At this point in the meeting, Troy indicated that a quorum was present. Susan asked that the Minutes of our June 24 meeting be approved as distributed. Those Minutes were unanimously approved.

9. Introduction of New Working Group Members

One new member, Susana Palma, has joined our WG. Susan asked Susana to introduce herself.

Susana Palma, Universidade Nova de Lisboa: Susana is in Lisbon Portugal. She attended ISOEN 2019 in Fukuoka, Japan. She works Hugo Gamboa and Ana Cecilia Roque. Their group is developing new gas sensor technology that may be appropriate for the enose. She wants to learn how the IEEE standardization process works and how it might impact their research.

9. Next Meetings – Nagle

Troy reminded the WG that our next two meetings are scheduled at 10 AM EDT on July 22 and September 9.

10. Adjourn

With no other business being brought before the body, Susan thanked the WG members for their participation and adjourned the meeting at 11:29 AM EDT.

H. Troy Nagle
WG Secretary
7/11/2019

ATTACHMENT 1 IEEE Standards Working Group

P2520

QUESTIONNAIRE 1

3rd July 2019
Covington/Potyrailo/Nagle
Ver 1.0

1. Do we wish to limit our activity to electronic noses, or should we use a broader term to cover a range of different devices (such as "odour assessment devices")?

   If so, do you have suggestions for this general term?

2. Do you wish to define a series of attributes to the enose (or more general device)?

   If so, what attributes would you give to these devices and are there any specific devices/techniques that we should definitely exclude (such as GC/MS, weight > 5 kg, for example)?

3. For our calibration/comparison standard, should we base the standard on a current important field?

   If so, which application would be most appropriate? As examples, environmental monitoring (particularly indoor and urban outdoor) and medical diagnosis/compliance are currently receiving a lot of interest.

   Do you have a "favourite" enose use case? An example is replacing human panels in evaluating hazardous odours.

   If so, can you briefly describe it? Successful stories can spark new ideas.

4. Are you expecting any test odorants to be produced by an approved external organisation, or would you prefer that they could be prepared by prospective buyers and users?

   Should these test odorants be composed of chemicals that are simple to attain?

5. Do you believe the test odorants should contain inorganic gases or should they only be based on volatile organic compounds? This will define the nature of the calibrations taken forward and how they are formed.

   Should we include individual gases/vapours or also their mixtures?

6. Do you feel the standard should be based upon a single point test or upon a series of tests (for example at different concentration levels)?

7. Do we need to state humidity levels or prescribe how to control for humidity effects?

   If so, at what range of humidity?

8. Any other comments you wish to add at this stage?

ATTACHMENT 2

USE CASE IDEAS

Shall we seek odor pain-points with large markets and can be addressed by currently available odor monitoring and remediation technologies?

1) Chicken production facilities (specific odor indicates disease)
2) Odor nuisance control (landfill, paper mill, animal rendering)
3) Bacterial cultures (odor indicates pathogen)
4) Counterfeit products (drugs, perfume, designer clothing; tag originals)
5) ID Badge verification (unique odor tag)
6) Home food storage (warning, danger alert)
7) Food market freshness (meat, fish, vegetables)
8) Storm damage mold testing (prospective renters, buyers, real estate agents)
9) Human odor (breath, axillary area)
10) Electrical failure (burning insulation, overheated electronic components)