IEEE SA STANDARDS ASSOCIATION

IEEE P2520.3.1 Working Group
July Meeting Minutes
12 JULY 2021 / 11:15 AM – 12:15 PM (ET)
WG Chair: Ehsan Danesh
WG Vice Chair: Dr. M. Sabarimalai Manikandan
WG Secretary: Dr. Srikanth Kavirayani
Teleconference Meeting link:
https://ieeesa.webex.com/ieeesa/j.php?MTID=m19a2593d4c145fbe79cbbc7dd8041473

1. **Call to Order**
   Chair called the meeting to order at 11:15 AM ET. He reviewed the ground rules for the meeting and announced that the meeting is being recorded for the purpose of preparing minutes and he announced the meeting started 15 minutes late due to a conflict with another WG meeting.

2. **Revised roll Call and revised registration process**
   Affiliation FAQs: http://standards.ieee.org/faqs/affiliation.html
   The Chair directed participants to register via the link (to a google sheet)

   https://docs.google.com/spreadsheets/d/1OXJornfqawM9NbQQhQhnFINcdFyyxIzuXuhyxgvb3ds/edit?usp=sharing

   in the Chat window. All participants were asked to mark a 'X' across their names, email, affiliation, and WG membership request against the meeting date. A few minutes were allowed for participants to access and complete the registration process. New registrations were asked to be appended at the bottom of the list.

3. **Establishment of Working Group Membership**
   The Chair disclosed the attendance form and welcomed all the new Working Group (WG) members. The list of participants may be found in **Attachment A**.

4. **Approval of Agenda**
   The Chair displayed the announced agenda and asked for a motion to approve. Troy Nagle made the motion to approve; Cynthia Burham seconded. Without objection to unanimous consent, the motion was approved
5. **Review of Working Group Policies & Procedures (P&Ps)**

   The Chair referred the WG to the proposed P&P Manual that was distributed earlier to the group. He then reviewed the following sections of the WG's P&P Manual in some detail.
   a. He informed that 7 people are required for Quorum, and it was verified by

Troy Nagle and Srikanth Kavirayani, and the requirement was met.
b. IEEE SA patent policy was elaborated.
c. The clauses under copyright policy were elaborated.

6. First Part of Discussion

a. *Baseline Performance*
i. The chair discussed the parent working group P2520.1 and other working groups as part of the discussion.
ii. The influence of humidity and temperature of devices was elaborated as part of the working group objectives.
iii. The effect of concentration, issues with identification and quantification were elaborated.

b. The chair raised the query on how the working group is going to work and asked to approve the agenda.

c. The chair asked for the approval of previous kick-off meeting minutes. Without objection to unanimous consent, the motion was approved.

d. *IEEE P2520 Overview*: The Chair reviewed the numbering scheme for the IEEE P2520 standards series (see **Attachment B**).

7. Technical Discussion & Detailed Introduction of members.

a. Chair requested the members present on their previous experience on validating devices and asked each member to elaborate on their experience and their interest to join the working group.

b. Jorge Horacio Alessandri was asked to present first by the chair and he presented his pharmaceutical experience and how geographical issues like tropical climate would influence the design and validation process.

c. Questions on the need for human panelists and the comparative analysis with device analysis were discussed and Alessandri elaborated on the process of how 4 times control checks were performed from morning till closure in vaccine manufacturing center was elaborated.

d. Alessandri also indicated his former role as a director of Glaxo and his experience in Belgium were in Penicillin Manufacturing units the buildings had to be collapsed due to the odor and he elaborated on standards of pharmaceutical industries.

e. Jorge Horacio was asked to introduce and elaborate on his experience next and he elaborated on how we can use an electric nose and he shared his experience in brazil and the regulations that were present.

f. Ehsan indicated that for indoor, CO_2 and humidity are more relevant and industry environments are different. There was a discussion on German standards and the relevance for indoor monitoring.

i. The need to specify chemicals processed.
ii. The evaluator details.
iii. Validation protocols to pass the test.
iv. Testing and validating the result.

g. ASM Shariafuzzaman was requested to elaborate on his interest for this working group and he indicated his work on sensors and projects on gas monitoring.

h. Cynthia Burhman was requested to elaborate on her interest and Cynthia indicated her work on organic field effect transistors and sensor development.

i. Sabaramalai Manikantan was requested to elaborate on his interest and affiliation by the chair and he elaborated on the prediction of diseases based on air quality and performance of devices based on IOT was his interest and he is also looking into aspects of AI based air quality and water quality issues on health.

j. Srikanth was requested to elaborate on his interest towards the WG and he elaborated that emission of gases like radon as a pre-indicator before earthquakes and design of special transducers for early detection and warning mechanisms as part of interest.

k. Jiaxiaong Zhu from Southeast University presented his interest in optical sensors and his previous affiliation with University of Missouri-Columbia.

l. Jorge Horacio spoke on his work and experience in pharmaceutical and biotechnology fields and his teaching and his interest to find out industrial applications to apply for electronic noses.

k. Troy Nagle elaborated on his rich experience and elaborated on how his lab was developed and the work related to the e-nose system and sensing mechanism with the experimental work inside a car.

l. VR Singh presented his profile at the end and introduced himself as the head of biomedical studies and sensor division of National Physical Laboratory Located in New Delhi. He elaborated on the logical process flow on the development steps which involved choosing the material for sensors, price issues in terms of physical, electrical parameters, the process of sensing and how to develop the hardware and then the field trials and taking of samples in local hospitals. He also elaborated on development of biomedical sensors and how NPL sends to other countries for establishing the standards and establishing the same under the Bureau of Indian Standards.

m. Ehsan presented his profile at the end and his educational background of chemical engineering and analytical science, and his postdoctoral experience and his role as a product manager at Alphasense.

8. Brainstorming & Action Plan

Timeline: The Chair presented a possible timeline with milestones and the deadline for the first draft is 11 December 2021. He mentioned the August meeting is cancelled due to summer break and the next meeting will only take place in September 2021.

9. Next Meeting

The Chair announced that WG meetings will be once per month (on the 2nd Monday at 11 AM ET). Our WG meetings will follow after the summer break and meetings of the P2520.2.1 WG. The next meeting of the P2520.3.1 WG will take place on September 13 at 11M EST.

10. Adjourn

The Agenda having been completed, the Chair asked for a motion to adjourn. Troy Nagle moved adjournment; Cynthia Burham seconded. Without objection to unanimous consent, the WG Chair adjourned the meeting at 12:35 AM.

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Attachment A: July Meeting Participants

Last Name	First Name	Affiliation	Country
Member			
Burham	Cynthia	University of Texas at Austin	USA
Danesh	Ehsan	Alphasense Ltd	UK
Kavirayani	Srikanth	Gayatri Vidya Parishad College of Engg(Autonomous), Visakhapatnam	India
Manikandan	M.Sabarimalai	Indian Institute of Technology, Bhubaneswar	India
Nagle	Troy	ECE & BME, NC State University	USA
SAGAR	A S M SHARIFUZZAMAN	Sejong University, Seoul, South Korea	South Korea
Alessandri	Jorge Horacio	Argentine Section	Argentina
Non-Member			
Zhu	Jianxiong	Southeast University (of China)	PRC
Singh	VR	NPL, India	INDIA
Staff			
Lalitte	Vanessa	IEEE SA	USA

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Attachment B: IEEE P2520 Numbering Scheme (Version 05Aug2020)

***Currently approved PARs are highlighted in yellow**

P2520: **Testing Machine Olfaction Devices & Systems [Susan Schiffman]**
Overview of standard series and definition of what devices/systems are covered

P2520.1: **Baseline Performance [James Covington]**
- Humidity and temperature impacts on single-gas detection
- Concentration curves, response and recovery times, and ternary chemical mixtures
- Sensor system recovery from high concentration exposure
- Odour measurement repeatability in the presence of pairs interfering chemicals

P2520.2: **Outdoor Odour Nuisances and Pollutants**
P2520.2.1: General Outdoor Air Quality [Ehsan Danesh]
P2520.2.2: Landfill odour [Susan Schiffman]
P2520.2.3: Residential Water Supply
P2520.2.4: Sewage Treatment (outdoor and downwind)
P2520.2.5: Animal Confinement (outdoor and downwind)
P2520.2.6: Travel-Based Air Pollution (automotive/rail/planes)
P2520.2.7: Workplace Satisfaction

P2520.3 **Indoor Odour Nuisances and Pollutants**
P2520.3.1: General Indoor Air Quality [Ehsan Danesh]
P2520.3.2: Refrigerator Food Spoilage
P2520.3.3: Cooking/Oven Odours Monitoring
P2520.3.4: Kitchen Odours
P2520.3.5: Bathroom Odours
P2520.3.6: Basement Mould
P2520.3.7: Workplace Satisfaction

P2520.4: **Industrial Application Processes and Quality Control**
P2520.4.1: Chemical Manufacturing [Susana Palma]
P2520.4.2 Petroleum Refinement
P2520.4.3 Paper Mills
P2520.4.4: Animal Rendering
P2520.4.5: Perfumery

P2520.5: **Personal Health and Hygiene**
P2520.5.1: Body Odour
P2520.5.2: Breath Odour
P2520.5.3: Foot Odour
P2520.5.4: Hair Odour

P2520.6: **Safety Protection**
P2520.6.1: Electrical Short-Circuit Odour
P2520.6.2: Gas Leaks (gasoline, pipelines, natural gas)
P2520.6.3: Fire Odour Alarms

P2520.6.4: Animal Confinement Structures (animal and operator safety)

P2520.7: **Medical Applications**
P2520.7.1: Cancer Detection
P2520.7.2: Sensory Impairment Quantification
P2520.7.3: Hospital Patient Room Air Quality
P2520.7.4: Pharmaceutical Quality
P2520.7.5: Allergy Alerts