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BUREAU OF INDIAN STANDARDS

MINUTES

**TWELTH MEETING OF WEARABLE ELECTRONIC DEVICES AND TECHNOLOGIES
SECTIONAL COMMITTEE, LITD 33**

DATE: 16 May 2024

DAY: Thursday

TIME: 10:30 AM

Venue: Virtual Meeting

1. In the Chair: Dr. Sanjeev Singh, Delhi University, New Delhi

2. Member Secretary: Ms. Alismita Khag

| Sl. No. | Representative | Organization |
|----------------|-------------------------------|---------------------|
| 3. | Mr. Arvind Gupta | Apple India |
| 4. | Mr. Padarabinda Das | BECIL |
| 5. | Mr. Tribeni Roy | BITS Pilani Goa |
| 6. | Dr. Ankit Gupta | CCET |
| 7. | Mr. Anil Kumar | CCET |
| 8. | Mr. Kishor lala | ERNET |
| 9. | Mr. Oppili Prasad | IIT (BHU) |
| 10. | Mr. Amritanshu Pandey | IIT (BHU) |
| 11. | Dr. Amitesh Kumar | IIT(ISM) Dhanbad |
| 12. | Mr. Devendra Chack | IIT(ISM) Dhanbad |
| 13. | Mr. Bipin Kumar | IIT-Delhi |
| 14. | Dr. Santosh kumar vishvakarma | IIT-Indore |
| 15. | Mr. Sudheer Kumar | IIT-Kanpur |
| 16. | Ms. Rashmi Thakur | NIFT |
| 17. | Ms. Raveena Gupta | STQC |

Invitee: -

18. Dr. Ashish Kumar, IIT-Kanpur

ITEM 0 WELCOME AND INTRODUCTORY REMARKS

0.1 Welcome

At the outset, the Member Secretary welcomed the members and thanked them for attending the Twelfth meeting of Wearable Electronic Devices and Technologies Sectional Committee, LITD 33.

0.2 Opening remarks of Chair

Dr. Sanjeev Singh, Chairperson, LITD 33 welcomed the members to the twelfth meeting of the Committee. In his opening remarks, he briefly introduced himself and requested all the members to actively participate in the standards formulation work of LITD 33 as this is one of the important committees. He also welcomed the new members and requested them to involve themselves and actively participate in the standards formulation work of this Committee. He stressed on the proposals from India, on e-textiles, that were presented in the last meeting of IEC TC 124. After a brief introduction of the members present, he then requested Member Secretary to carry on with the agenda items.

ITEM 1 FORMAL CONFIRMATION OF THE MINUTES OF THE LAST MEETING

1.1 As no comments had been received, the minutes of the last meeting, which was held on 2 Feb 2024 were confirmed by the Committee.

ITEM 2 COMPOSITION OF THE SECTIONAL COMMITTEE

2.1 The Committee reviewed the composition of the Sectional Committee.

2.2 The committee decided to write to the following organization/ member for their continues participation in the committee meeting:

- **Indian Institute of Technology (ISM), Dhanbad** – Shri Amitesh Kumar (Principal), Shri Devendra Chack (Alternate)
- **Manufacturer’s Association for Information Technology, New Delhi** – Shri Raunak Mishra (Principal), Shri Ambuj Saksaria (Alternate)
- **In Personal Capacity** – Shri Anand Yadav

2.3 The committee **decided** to withdraw the following member from the committee due continued lack participation:

- **In Personal Capacity** – Ms Suvrajyoti Mishra

2.4 Dr. Sanjeev Singh, Chairperson, LITD 33, informed that he had requested organizations like AMD, St. Microelectronics and other organizations to be a part of this technical committee. It was also decided that the Chair will follow up on this request.

ITEM 3 DRAFT STANDARDS FOR APPROVAL FOR FINALIZATION

3.1 The Committee noted the list of Standards given at Item 2 of the Agenda.

3.2 The committee **decided** to process the following documents for the finalization.

| Sl. No. | IEC Standard No. | Title |
|---------|----------------------|--|
| 1. | IEC 63203-101-1:2021 | Wearable electronic devices and technologies - Part 101-1: Terminology |

| | | |
|----|-------------------------|---|
| 2. | IEC 63203-201-3:2021 | Wearable electronic devices and technologies - Part 201-3: Electronic textile - Determination of electrical resistance of conductive textiles under simulated microclimate |
| 3. | IEC 63203-204-1:2023 | Wearable electronic devices and technologies - Part 204-1: Electronic textile - Test method for assessing washing durability of e-textile products |
| 4. | IEC TR 63203-250-1:2021 | Wearable electronic devices and technologies - Part 250-1: Electronic textile - Snap fastener connectors between e-textiles and detachable electronic devices |
| 5. | IEC 63203-401-1:2023 | Wearable electronic devices and technologies - Part 401-1: Devices and systems: functional elements - Evaluation method of the stretchable resistive strain sensor |
| 6. | IEC 63203-402-1:2022 | Wearable electronic devices and technologies - Part 402-1: Performance measurement of fitness wearables - Test methods of glove-type motion sensors for measuring finger movements |
| 7. | IEC 63203-406-1:2021 | Wearable electronic devices and technologies - Part 406-1: Test method for measuring surface temperature of wrist-worn wearable electronic devices while in contact with human skin |
| 8. | IEC 63203-801-1:2022 | Wearable electronic devices and technologies - Part 801-1: Smart body area network (SmartBAN) - Enhanced ultra-low power physical layer |
| 9. | IEC 63203-801-2:2022 | Wearable electronic devices and technologies - Part 801-2: Smart body area network (SmartBAN) - Low complexity medium access control (MAC) for SmartBAN |

3.3 Comments were received during the Wide Circulation period from CSIR-NPL. However, due to the absence of the CSIR-NPL representatives at the meeting the comments could not be discussed, hence the committee decided to discuss the comments in the panel meeting and resolve the same and accordingly process these two documents for finalization:

| Sl. No. | IEC Standard No. | Title |
|---------|----------------------|---|
| 1. | IEC 63203-201-1:2022 | Wearable electronic devices and technologies - Part 201-1: Electronic textile - Measurement methods for basic properties of conductive yarns |
| 2. | IEC 63203-201-2:2022 | Wearable electronic devices and technologies - Part 201-2: Electronic textile - Measurement methods for basic properties of conductive fabrics and insulation materials |

ITEM 4 NEW SUBJECTS

The committee noted the information given at Item 3 of the Agenda and the presentation delivered by Dr. Sudheer Kumar and Dr. Ashish Kumar from IIT-Kanpur. In this regard the following were decided by the committee:

- IIT-Kanpur to provide the revised draft to the BIS Secretariat for circulation within the committee for the purpose of obtaining views from all members.

- IIT-Kanpur to provide a justification and differentiation matrix as to how these two proposal differ from already published IEC 62899 series of standards (Specially IEC 62899-202:2023 “Printed electronics - Part 202: Materials - Conductive ink” and IEC 62899-204:2019 “Printed electronics - Part 204: Materials - Insulator ink - Measurement methods of properties of insulator inks and printed insulating layers”)
- BIS Secretariat to write to IEC TC 119 “Printed Electronics” regarding the applicability of the IEC 62899 series of standards.

The committee decided to discuss further on this project from IIT-Kanpur in the next committee meeting.

ITEM 5 INTERNATIONAL STANDARDIZATION ACTIVITIES

5.1 The Committee noted the information given at Item 4.1 and 4.2 of the Agenda. The members were requested to nominate their self to IEC TC 124 “Wearable electronic devices and technologies” different working groups. The members were also requested to provide their comments on all documents under voting, which have being circulated by the BIS Secretariat from time to time.

5.2 Mr. Oppili Prasad from IIT (BHU) opined that he is desirous of proposing a New Work Item on Electromyography in Wearable devices as well as on packaging of PCB for using Wearable applications. He was requested to provide a brief presentation on New Work Item to be proposed by him to the BIS Secretariat.

5.3 The Committee noted the delegation given at Item 4.3 of the Agenda and the agenda points to be discussed.

5.3.1 The committee noted the information given at item 4.3.1 of the Agenda and **decided** that the draft circulated by JPNC IEC TR 63203-8 XX-1 “Wearable electronic devices and technologies Part 8 XX-1, Wearable communications and interface technology – Representation method of autonomic nerve activity index based on heartbeat information obtained from wearable devices” needs to be reviewed extensively. Hence it was decided to circulate this draft to all members of the committee for their observation.

5.4 The Committee noted the information given at Item 4.4 of the Agenda. Members were requested to provide their interest for participation in the next plenary meeting of IEC TC 124, which is scheduled to be held in USA, to the BIS Secretariat by 31 May 2024.

5.5 Membership in IEC TC 119 ‘Printed Electronics’

5.5.1 The Committee noted the information given at Item 4.5.1 of the agenda and decided to take up P-Membership of IEC TC 119 “Printed Electronics” and nominate the following members in its working groups:

| SI No. | Working Group | Member Nominated |
|--------|--------------------------------|--|
| 1. | WG 1 ‘Terminology and Roadmap’ | <ul style="list-style-type: none"> ● Dr. Sudheer Kumar, IIT-Kanpur ● Dr. Sanjeev Singh, DU ● Ms. Alismita Khag, Member Secretary |
| 2. | WG 2 ‘Materials’ | <ul style="list-style-type: none"> ● Dr. Sudheer Kumar, IIT Kanpur ● Mr. Oppili Prasad from, IIT (BHU) ● Dr. Sanjeev Singh, DU ● Ms. Alismita Khag, Member Secretary |
| 3. | WG 3 ‘Equipment’ | <ul style="list-style-type: none"> ● Dr. Sudheer Kumar, IIT Kanpur ● Mr. Oppili Prasad from, IIT (BHU) ● Dr. Sanjeev Singh, DU ● Ms. Alismita Khag, Member Secretary |
| 4. | WG 4 ‘Printability’ | <ul style="list-style-type: none"> ● Dr. Sudheer Kumar, IIT Kanpur ● Dr. Sanjeev Singh, DU ● Ms. Alismita Khag, Member Secretary |
| 5. | WG 5 ‘Quality Assessment’ | <ul style="list-style-type: none"> ● Dr. Sanjeev Singh, DU ● Ms. Alismita Khag, Member Secretary |

ITEM 6 WORKSHOP ON IMPORTANCE OF STANDARDS ON WEARABLEELECTRONIC DEVICES AND TECHNOLOGIES

6.1 The committee noted the information given at Item 5 of the Agenda. It was informed by IIT-Kanpur that they are hosting a workshop at their Noida Campus and would request BIS to be a part of it. It was also decided that Dr. Sudheer Kumar, IIT-Kanpur would send an official communication to the BIS Secretariat for this purpose.

6.2 Chandigarh College of Engineering and Technology (Degree Wing), Chandigarh opined that they would also like to invite BIS for a lecture series on Wearable Devices at their Campus and would send an official communication to the BIS Secretariat for this matter.

ITEM 7 DATE AND PLACE OF NEXT MEETING

7.1 The committee decided to schedule the next meeting tentatively in August 2024, in Physical mode. The exact date would be finalized in consultation with the Chair.

ITEM 8 ANY OTHER BUSINESS

8.1 There being no other business, the meeting ended with a vote of thanks to the members and the Chair.