European Standardization Organizations

Webinar 'Introduction to CEN-CLC/JTC 23 - Horizontal Topics for PPE'

We start at 10:00 CET

Your webinar moderator

Els Somers

Project Manager

Public Relations

esomers@cencenelec.eu

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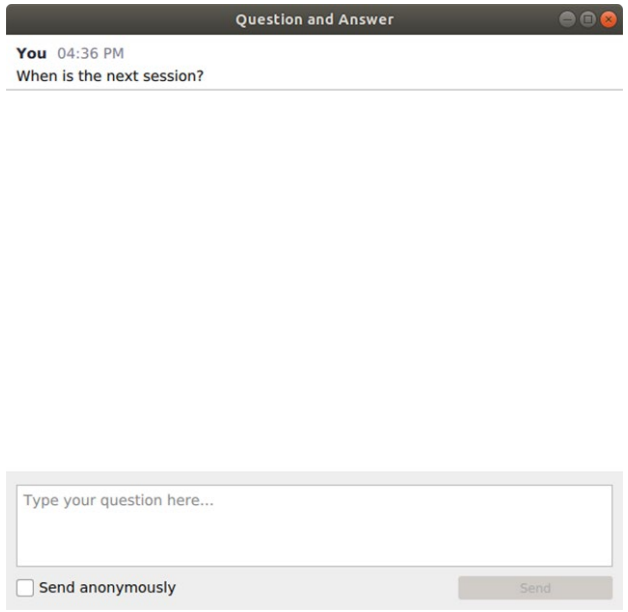
- Use the Q&A panel to submit your questions



- Talk about us on LinkedIn or BlueSky #training4standards

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  @cen-cenelec.bsky.social

Your speakers today

- Henk Vanhoutte, Chair of CEN-CLC/JTC 23 ‘Horizontal topics for Personal Protective Equipment (PPE)’henk.vanhoutte@eu-esf.org
- Laurent Houillon, Convenor of WG 1 ‘Terms and Definitions for PPE’ LHOUILLON@ifth.org
- Ronald Heus, Convenor of WG 2 ‘Compatibility, Ergonomics, Comfort’ Ronald.Heus@nipv.nl
- Giovanna Longo, Convenor of WG 3 ‘Sustainability in PPE’ glongo@mmm.com
- Karin Eufinger, Convenor of WG 4 ‘SMART PPE’ ke@centexbel.be
- Maurice Kemmeren, Convenor of WG 5 ‘Fire and Rescue PPE’ Maurice.Kemmeren@nipv.nl
- Natalie Wilson, Convenor of WG 6 ‘Inclusive PPE’ natalie@wsiltd.co.uk

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Introduction

by Henk VANHOUTTE, Chair of CEN-CLC/JTC 23 ‘Horizontal topics for Personal Protective Equipment (PPE)’

Introduction

- CEN-CENELEC sector forum PPE discussions on horizontal topics → need to be able to develop standardisation deliverables
- Also changing legal framework – not only PPE Regulation (EU)2016/425
- No intention to change the current structure of PPE TCs – existing TCs remain responsible for standards for their products
- Approved by both Technical Boards (BTs) in summer 2023
- Kick off meeting 8th of April 2024
- Secretariat : Sara Gibbs, BSI / Chair : Henk Vanhoutte
- Set up of 6 Working Groups approved end of 2024 – **we need experts to participate in the work**

Introduction – scope JTC 23

Standardization in the field of personal protective equipment (PPE) to develop horizontal frameworks, guidelines, tools and requirements to support the activities of existing product TCs.

The JTC will provide recommendations on topics such as sustainability, compatibility, diversity, smart PPE, inclusion of developing technologies, ergonomics, comfort and the application of other product legislation(s).

Product-specific aspects of PPE already covered by existing Technical Committees’ scopes and work programs will not be addressed by this JTC.

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Working Group 1

Laurent HOUILLON, convenor of CEN-CLC JTC 23/WG 1.

Working Group 1

WG1 *Terms and definitions for PPE*

Convenor: Laurent Houillon

Scope : To produce terminology definitions for personal protective equipment

Objective: to gather in one document the useful terminology for all PPE stakeholders, whatever their technical origins and interests in order to get a better knowledge of all involved sectors and to have a common understanding of the terms to be used in any JTC 23 documents.

Working Group 1

WG1 *Terms and definitions for PPE*

Approach:

- to identify the existing terminology sources
  - using *IEC Electropedia* and *ISO OBP*
  - existing terminology standards
- to set up an appropriate and pragmatical structure of the JTC23 terminology document
- to help JTC23 drafters of the other WGs for keeping the terminology consistency in documents

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Working Group 2

Ronald HEUS, Convenor of WG 2 ‘Compatibility, Ergonomics, Comfort’

CEN-CENELEC/JTC 23/WG2

Ergonomics, comfort and compatibility of personal protective equipment (PPE)

Convenor and secretariat of WG2

Ronald Heus

Convenor WG2

- Senior scientist @NIPV

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Vera De Glas

Secretariat WG2

- R&D-ingenieur @Sioen Apparel

vera.deglas@sioen.com

Introduction

- CEN (European Committee for Standardization), CENELEC (European Committee for Electrotechnical Standardization), and JTC23 (Joint Technical Committee 23) have a key responsibility in the development of standards for Personal Protective Equipment (PPE).

- Working Group 2 (WG2) in particular contributes to standards to determine that PPE is ergonomically designed, comfortable and compatible with each other, the users and the environment in which they are used.

- Aim for WG2 is enhancing the ergonomics, compatibility, and comfort of PPE to ensure that PPE meets the highest safety standards while improving user experience and efficiency, enabling industries to better protect workers and increase compliance with health and safety regulations.

Mission statement

- Our mission is to develop, contribute and promote European standards that ensure PPE is ergonomically designed, compatible with each other, other safety equipment and the environment, and comfortable for prolonged use, while safeguarding the health and well-being and productivity of users.

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Scope

- The working group is developing standards and guidelines to measure hindrance, compatibility and (dis)comfort of people using PPE that protect them from hazards and give insight in the performance of these means.

Objectives

- **Standardization of Ergonomics**

Create and refine ergonomic standards for PPE to reduce fatigue, discomfort, and injury.

- **Compatibility Improvements**

Ensure that PPE can be used together with other safety gear without compromising the protection or comfort of the wearer.

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- **User-Centric Comfort**

Focus on the comfort of PPE to improve wearability for extended use, which in turn enhances worker productivity and compliance, taking into account different scenarios, such as different climatic conditions.

- **Awareness and Adoption**

Promote the adoption of these standards across industries and manufacturers, ensuring companies comply with the latest ergonomic, compatibility and comfort guidelines.

Standards

- EN 13921:2007 - Personal protective equipment. Ergonomic principles
- EN 17528:2022 - Clothing -physiological effects - Measurement of water vapour resistance by means of a sweating manikin
- EN 17558:2023 - Ergonomics - Ergonomics of PPE ensembles
- ISO/TS 20141:2022 - Personal safety - Personal protective equipment - Guidelines on compatibility testing of PPE
- …….

Strategy

- **Research and Development**

Follow latest innovations to improve PPE

- **Standard Development**

Update standards on ergonomics and according to latest PPE developments

- **Stakeholder Engagement**

Keep all stakeholders involved to promote using the ergonomic standards

- **Implementation & Adoption**

Guidelines and training for and with PPE manufacturers to promote using

- **Marketing and Outreach**

Dissemination through all possible channels

- **Quality Control and Certification**

Develop a reliable and compliant certification process

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Conclusion

- CEN-CENELEC/JTC 23/WG2's focus on ergonomics, compatibility, and comfort of PPE will provide a significant step forward in improving worker safety, comfort, and productivity.

- By advancing standards that prioritize user experience while maintaining high safety standards, we can help industries meet both current and future challenges in PPE design and implementation.

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Working Group 3

Giovanna LONGO, Convenor of WG 3 ‘Sustainability in PPE’

CEN-CLC JTC 23/WG3: Sustainability & Circularity Aspects of PPE

Chair
Giovanna Longo

Secretary
Eric Van Wely

NSB Secretary

Who we are

- Several years of experience in CEN/ISO Standardization work
- Deep knowledge of the PPE Regulatory landscape
- Basic knowledge in sustainability

CEN-CLC JTC 23/WG3: Where do we start

EC AV PORTAL – Statement by Ursula von der Leyen, President of the EC, on the European Green Deal

CEN-CLC JTC 23/WG3: Why this WG?

High interest in improving products sustainability due to the "Green Deal", customers demand, public tenders

Several TCs worried on how to deal with Sustainability requirements: PPE experts are generally not sustainability experts

PPE Sector Forum: Creation of Guidelines for Standard Writers and for Regulators

Decision to move the standardization work to JTC23, as a horizontal topic

Here we are! We have a tough job to do, but worthwhile!

CEN-CLC JTC 23/WG3: Many ideas

CEN-CLC JTC 23/WG3: Our Plan

- Workshop
  - **When**: February 26-27, 2025
  - **Where**: CEN and CENELEC, Brussels
  - **How**: Only in person
  - **Who**: Open to everybody (registration required!)

    CEN members: CEN Meetings

    Non CEN members: CEN-CLC/JTC 23/ WG 3 Workshop Tickets, Multiple Dates | Eventbrite
- Intent
  - Get to the **same level** of knowledge
  - Understand the **needs** of all stakeholders
  - **Prioritize** work plan

Microsoft 365 Stock Image. Retrieved January 13, 2025.

CEN-CLC JTC 23/WG3: Our Plan

Microsoft 365 Stock Image. Retrieved January 13, 2025.

Workshop Agenda

- **Day 1** *(11-17h)*
  - Introduction of participants and networking lunch
  - Keynote Presentations
  - Updates on Standards Development
- **Day 2** *(9-17h)*
  - Feedback from Day 1
  - Workshop - Interactive Discussions
  - Feedback from the breakout sessions
  - Suggest a scope and work program of CEN-CLC/JTC 23/WG 3

CEN-CLC JTC 23/WG3: we need you

Experts in different fields

- Product sustainability experts
- Current participants to other sustainability standards
- Experts for each PPE category
- Notified bodies for sustainability or others
- Enforcement authorities
- SMEs and NGOs
- ...

Register by **February 12th** to ensure your presence!

Microsoft 365 Stock Images. Retrieved January 13, 2025.

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Working Group 4

Karin EUFINGER, Convenor of WG 4 ‘SMART PPE’

WG 4 “Smart PPE”

Full Title:

Smart, electronic, electrical and ICT properties of PPE and PPE ensembles

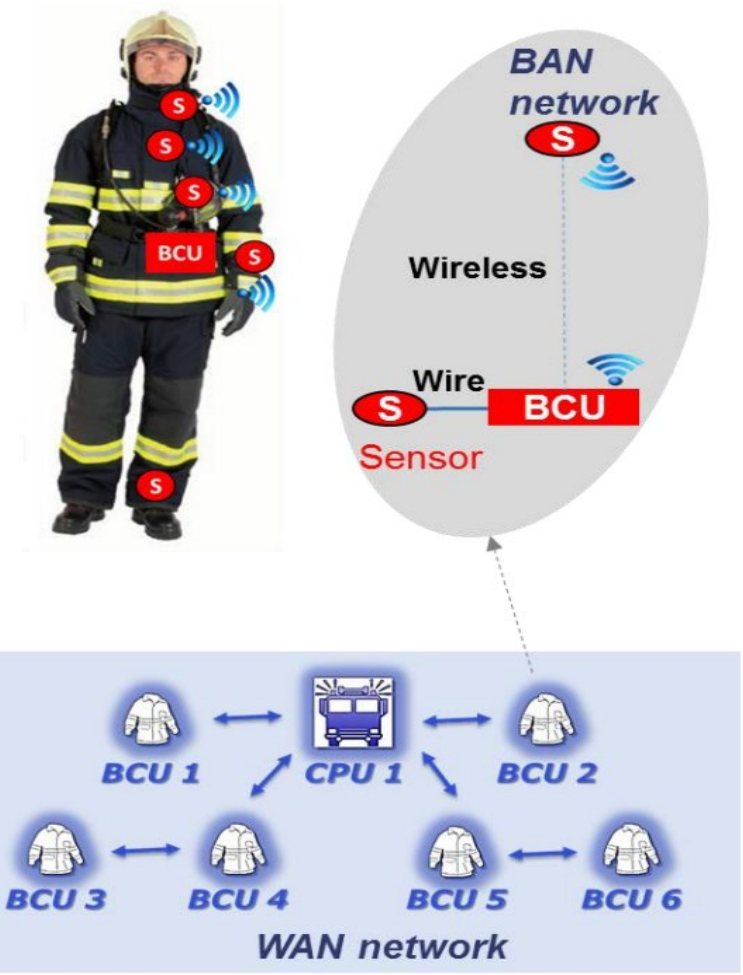
Scope:

Standardisation for PPE and ensembles of PPE with

- *integrated smart, electronic and ICT elements*
- *protection against electric and electrostatic risks*

PPE and ensembles of PPE with integrated smart, electronic and ICT elements

- "smart PPE" usually not used stand-alone but as part of a wider system
- both the system and the PPE need to be evaluated



Smart textile-based protective system for firefighters
Article · November 2014, DOI: 10.1109/ESTC.2014.6962821,
https://www.researchgate.net/publication/286491846

"Smart PPE"- Existing work and identified gaps

- CEN/TC 162 WG1, WG2 work under M/553 - *Advanced garments and ensembles of garments that provide protection against heat and flame, with integrated smart textiles and non-textile elements for enhanced health, safety and survival capabilities*
- CEN/TC 248 WG31 Smart textiles and electronic textiles (ISO/TC 38 WG32 Smart textiles)
- IEC/TC 124 WG8 Wearable electronic devices and technologies

⇒ General approach for all PPE and PPE ensembles, and inclusion of the complete smart PPE system needed

⇒ Guidelines and normative support for the certification of PPE with integrated smart, electronic and ICT elements needed

M/553 – expand work to all PPE

Standardisation request M/553 *Advanced garments and ensembles of garments that provide protection against heat and flame, with integrated smart textiles and non-textile elements for enhanced health, safety and survival capabilities* (2017 – 2021)

- CEN/TR 17512:2020 - Personal protective equipment - Smart garments - Terms and definitions
- EN 17673:2022 - Protective clothing - Protection against heat and flame - Requirements and test methods for garments with integrated smart textiles and non textile elements
- CEN/TR 17620:2021 - Guidelines for selection, use, care and maintenance of smart garments protecting against heat and flame

- Focussed on garments
- Insights relevant to all PPE

Work in CEN/TC 248/WG 31 (and ISO/TC 38/ WG32)

CEN/TR 17945:2023 - *Textiles and textile products - Textiles with integrated electronics and ICT - Definitions, categorisation, applications and standardisation needs*

- Included examples for PPE

Work for CEN-CLC/JTC 23/WG 4:

⇒ Prepare document specifically for PPE, including also the results from M/553

⇒What also needs to be addressed: Certification of PPE with integrated smart, electronic and ICT elements; for the moment there are no dedicated hEN available and thus no outlined testing and certification procedure

Work in IEC/TC 124

Scope

Standardization in the field of wearable electronic devices and technologies which include patchable materials and devices, implantable materials and devices, ingestible materials and devices, and electronic textile materials and devices.

Excluded: Standardization for specific items in the field of the following IEC TCs: TC 47, TC 62, TC 100, TC 108, TC 110, TC 119, SyC AAL and relevant areas of JTC 1.

- Viewpoint of the electronics industry.

IEC/TC 124 WG 2, ISO/TC 38 WG 32 and CEN/TC 248/WG 31 have a close cooperation.

Protection against electrical risks

(Damaged) electric vehicles pose specific risks to those working on them.

- If the vehicle is still functioning normal then the standard procedures for safe working can be followed, but also here workers can potentially encounter harmful situations.
- For damaged vehicles this cannot be guaranteed and the risk for harmful situations is high.

⇒ Currently there are no specifications for PPE to be used when working with (damaged) electric vehicles

⇒ The two main actors to be addressed are

- Mechanics (repairs and maintenance)
- Rescue workers (accidents)

Protection against electrostatic risks

Co-ordination of two standardisation activities

- CEN-CLC JWG 7(disbanded): CEN-CLC/TR 16832:2015 - *Selection, use, care and maintenance of personal protective equipment for preventing electrostatic risks in hazardous areas*
- CEN/TC 162 WG1: EN 1149 series - *Protective clothing - Electrostatic properties*
  - Part 1 (2006) *Test method for measurement of surface resistivity*
  - Part 2 (1997) *Test method for measurement of the electrical resistance through a material (vertical resistance)*
  - Part 3 (2004) *Test methods for measurement of charge decay*
  - **Part 4 (under development) *Test methods for evaluating complete garments and garment assemblies***
  - Part 5 (2018) *Material performance and design requirements*

CEN-CLC TR 16832 – requirements for revision (1)

- Update reference from PPE Directive to PPE Regulation and update normative references
- New text about garment testing with reference to EN 1149-4 and EN 1149-5
- New text and reference to the revised EN 397 for head protection
- Check for any developments in other product standards and add text as appropriate, which may require:
  - Co-ordination with other PPE product committees, and
  - A call for experts with relevant expertise about other PPE products

CEN-CLC TR 16832 – requirements for revision (2)

- Review and, if necessary/possible, clarify relationship between PPE Regulation and ATEX Directives
- More detailed explanation (including pictures) of the physics of electrostatic dissipative materials, conductive fibres, etc.
- Interpretation and common misinterpretation of measurements and measurement errors
- Guidance on PPE for Zone 0 hazardous areas and Explosion Group IIC atmospheres
- Any other new issues or questions about SUCAM that may have arisen since publication of CEN/CLC TR 16832:2015

Limitations of EN 1149-1, -3 & -5

- The requirements of EN 1149-5 presume that garments are made entirely from electrostatic dissipative materials that can be tested using either EN 1149-1 or EN 1149-3
- Garments are permitted to have attachments that are not electrostatic dissipative provided they meet the area/width restrictions given in IEC/TS 60079-32-1
- Protective clothing has become more complex and is commonly required to protect against multiple hazards
- The restrictions in IEC/TS 60079-32-1 cannot always be achieved without compromising protection

Market trend from simple to complex designs

Simple design: fabric test & design requirements

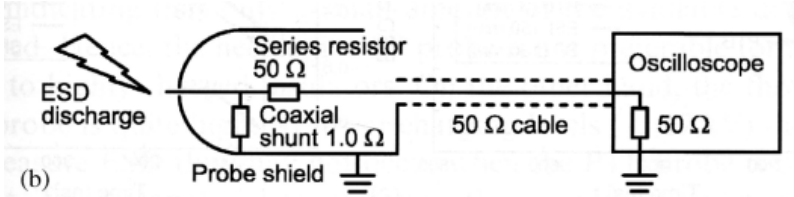
Complex design: full garment test required

Full Garment Test Requirements

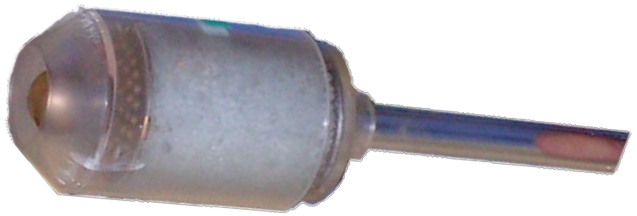
- Full garment or garment assembly must be tested
- All parts of garment, including attachments must be charged
- Charging must represent worse case in-use conditions
- Measurements must be made on all parts of garment, including attachments
- Must be able to relate measurement parameters to ignition risk

Full garment test developed by INERIS* & STFI

Electrostatic fieldmeter or voltmeter
e.g. surface potential < 1000 V



Probe for measuring charge (Q_T) transferred in ESD



Gas ignition probe, no ignition with MIE representing worst case

*INERIS has now discontinued all PPE testing

Next steps

WG 4 workshops (online only) – proposed dates

- 28 January 2025, 10.00H – 12.00H CET: SUCAM and CEN/TR Integrated smart, electronic and ICT elements
- 4 February 2025, 10.00H – 12.00H CET: Electrical Vehicles

1st WG 4 meeting (online and at BSI London)

- 12 March 2025 in the afternoon
- May/June 2025 (tentative) joint meeting of WG 4 and CEN/TC 162 Project Group

Contact WG4

Karin Eufinger

Convenor WG4

Project leader Integrated smart, electronic and ICT elements

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Convenor support WG4

Project leader Electrostatic risks

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Working Group 5

Maurice KEMMEREN, Convenor of WG 5 ‘Fire and Rescue PPE’

WG5 “Fire and Rescue PPE”

Convenor and secretariat

- **Maurice Kemmeren**
  PPE expert at NIPV
  maurice.kemmeren@nipv.nl

- **Jikke Hak**
  Consultant at NEN
  jikke.hak@nen.nl

Introduction

- Fire and Rescue PPE end-users must work in very special and exceptional circumstances. Circumstances that are a consequence of incidents and/or instability situations. Working in circumstances to primarily save people and where possible limit major environmental damage and social impact.
- Actions are always of an urgent nature. Decision-making must be made under great time pressure and often in a ‘split second’.
- Harmonisation of Fire and Rescue related product standards.

PPE for Fire and Rescue

- The group of Fire and Rescue end-users represented relies heavily on the protective equipment. These protective resources will be mostly used in combination with other PPE. The changing and unpredictable conditions mean that proper preparation is necessary.
  This preparation and results a part of risk assessments, acquired knowledge and applied science.
- JTC23 gives this specific target group of end users the opportunity to better organise themselves Europe-wide in developing, exchanging knowledge and experience of PPE with product standard committees and to achieve better and targeted alignment with practice of Fire and Rescue.

Mission statement

- JTC 23 WG5 ‘Fire and Rescue PPE’ was established to organize and harmonize, with broad support from and for European countries, the functional needs of the Fire and Rescue end-user and to support this target group with knowledge, advice and tools for the preparation and use of appropriate personal protective equipment and systems for fire and rescue organisations in Europe.

Scope

- JTC 23 WG5 ‘Fire and Rescue PPE’ will harmonize and develop advices, functional scenarios (the needs), frameworks and Technical reports to enable standards committees, industry, suppliers and end users, to improve the protective functions of PPE and PPE systems for the target group Fire and Rescue.

Objectives

- Creation of **functional scenarios** of the EU Fire and Rescue services
- A **reference point and platform** for standards committees and national standard bodies on issues and questions relating to fire and rescue PPE
- Develope **supporting documents, frameworks and guidelines** in a coherence and structure with topics such as, selection criteria, composition, interconnectivity of systems, cleaning, maintenance and creating specifications of the end-user target group

Strategy

- Research and Development
  - Follow latest innovations to improve PPE
- Standard Development
  - Feed standards committees with the functional need and scenarios to promote development PPE (systems)
- Stakeholder Engagement
  - Keep all stakeholders involved to create and promote using the standards
- Implementation & Adoption
  - Supporting instructions, frameworks and guidelines for fire and rescue end-users to support preparation
- Marketing and Outreach
  - Dissemination through all possible channels
- Quality Control and Certification
  - Develop for de end-user a reliable and compliant certification process

Number of topics of current interest

- Equivalence in availability of resources for each employee (male/female)
- Thermal performance balance (currently very relevant for the fire service but also future climate-related)
- Care (Cleanability, What is clean and what is clean enough, Qualification of cleaning results)
- Use of materials in PPE (PFAS, reimplection)
- …

This is a sampling of topics that are current.
But by mutual agreement, WG5 will deliver a work plan with topics and priorities.

Conclusion

- JTC 23 WG5 will focus on
  - contribute to standard development with user goals and experience while maintaining high safety standards, to help industries and end-users address current and future challenges in PPE development and implementation.
  - functional needs of PPE for Fire and Rescue and will develop support documents, frameworks and guidelines what will bring improvement preparation of Fire and Rescue workers safety, usability and effectiveness of PPE.

Call for participants

- Representatives on behalf of end-users

  - representatives on behalf of national level the fire and rescue organisation, which repressively aim to rescue and stabilise life-threatening conditions representing end-user unions;
  - application process via the National Standardization Body or National Committee of the participating country;
  - collective of trade unions representing end users.

For questions, send an e-mail to: Jikke.hak@nen.nl

Content

Thank you for your attention!

There is room for some questions

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Working Group 6

Natalie WILSON, Convenor of WG 6 ‘Inclusive PPE’

WG 6 – ‘Inclusive PPE’

Purpose & Background

- “European harmonised standards are used to design safe products. However, **if standards do not consider the diversity of human bodies** in terms of size, structure and composition, **they may fail to ensure the safety, comfort, accessibility and usability** of products for the whole European population…”

- European Commission Study on the Inclusiveness of Anthropometrics in European Harmonized Standards found “For **76 standards, the potential impact of non-inclusiveness on human health and safety is assessed as high**, thus calling for an **urgent revision of the relevant legislation**.”

Scope

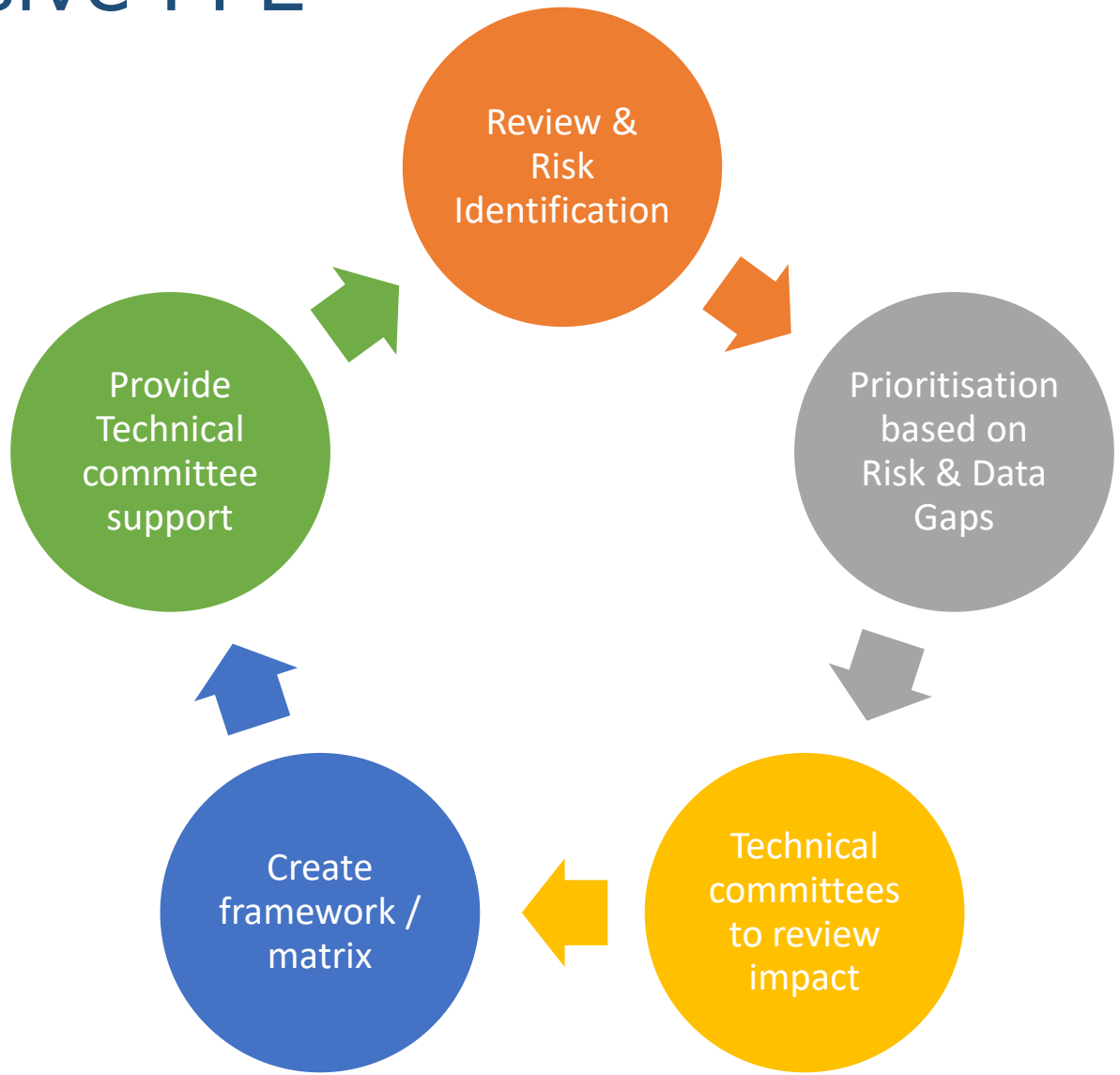
- Part 1 - **Reviewing the study of anthropometrics** to identify relevant Standards for urgent revision
- Part 2 – **Developing overarching approach to address required revisions** for relevant Standards relating to PPE & Ensembles of PPE with inclusivity as its' core element

- Future work item: create a European Standard for Provision of Inclusive PPE.

  Current BS 30417 Standard for the same being drafted for release mid 2025.

WG 6 – ‘Inclusive PPE’

Approach



WG 6 – ‘Inclusive PPE’

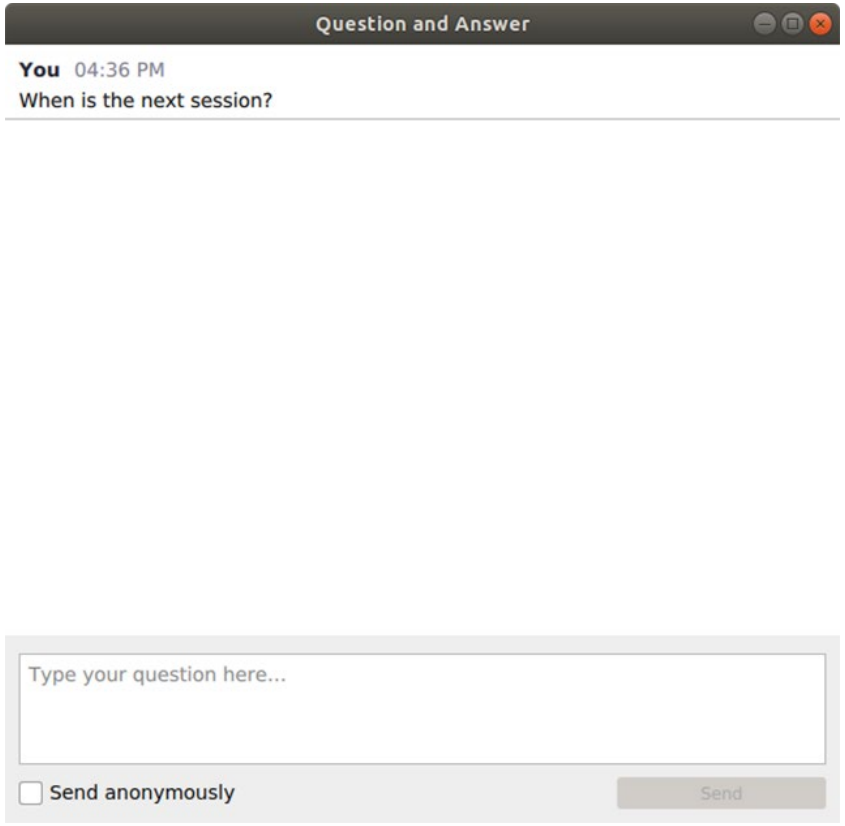
Inaugural meeting:

- Thursday 20th February, 10:00-15:00 GMT
- Remote Teams Meeting
- Registration Deadline – Wednesday 19th February
- New Work Item Proposal Deadline – Wednesday 5th February
- Registration via National Standards Body

Your feedback

Question time

- Use the Q&A panel to submit your questions



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Thank you for your participation!

Upcoming webinars/events

2025-01-23 - Webinar for CEN-CENELEC/JTCs Officers - New process for the approval of NWIs

2025-02-24 - Workshop ‘Development of complementary Product Category Rules under CPR: status & next steps’

2025-03-20 - European standardization supporting new legislative cybersecurity landscape