

# Position Paper

## CEN and CENELEC input to Horizon Europe Strategic Plan 2025-27 February 2023

### Background Information

This Position Paper has been prepared by CEN and CENELEC in reply to the European Commission's consultation on past, present and future European R&I programmes with the aim of providing input on pre-normative research needs which could contribute to shaping the strategic orientations for the Horizon Europe Strategic Plan 2025-2027.

### Introduction

The European Framework Programmes for Research and Innovation (R&I) focus more and more on the impact of research and innovation to support the uptake of innovative solutions in industry and society in order to address global challenges. This strategic objective emphasizes the market relevance of standards for valorising research results. **Standards can serve as a catalyst for innovation and help researchers bring their innovative ideas and scientific results to the market.**

The European Framework Programmes for R&I cover sectors that are very important for standardization. Many calls for proposals of these Framework Programmes make reference to standardization and request projects to actively contribute to standardization. As a result, EU-funded projects are already feeding into standardization activities, directly and indirectly.

CEN and CENELEC and their Members have invested into reaching out to the research and innovation community, as well as have participated in numerous research projects to provide opportunities to bring EU-funded research work into standardization.

Horizon Europe's Strategic Plan 2025-2027 should build on these achievements and seek to further exploit the potential of EU-funded pre-normative research to anticipate future trends in standardization.

## Standardization and pre-normative research

Standards in Europe are developed by one of the three designated European Standardization Organizations (ESOs): the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC), and the European Telecommunications Standards Institute (ETSI). The ESOs are officially recognized by Regulation (EU) No 1025/2012 as providers of European standards.

The European Standardization System is a powerful tool for addressing changes in technological-market needs, as it provides a strong framework to enable the deployment of innovation. The range of standardization deliverables, from full consensus documents (European Standards) to pre-standards (CEN-CENELEC Workshop Agreement), offer the flexibility to adapt quickly to these evolutions in the market and ensure knowledge transfer to the market.

The **European Standardization Strategy** published in February 2022 recognizes that *“there is untapped potential in EU-funded pre-normative research in support of standardisation needs”* and that *“proper resource allocation to pre-normative research can help ensure that Europe takes the lead in international standardisation processes”*<sup>1</sup>. Over the past years, the European Framework Programmes for R&I have strongly supported pre-normative research, contributing to the development of pre-standards and proving input for the future development of standardization.

There are different ways in which standardization can be addressed in research projects, intending to transfer new knowledge from the projects to the market, in accordance with the EU Policy on Knowledge Valorisation.

The **contribution to existing and/or initiating new standards or other standardization deliverables**, can take several forms such as: a proposal for changes to existing standards and/or for creating new standards, or other CEN-CENELEC documents (e.g. the CEN-CENELEC Workshop Agreement, CWA) can be delivered following an in-depth gap analysis during the project.

When a Technical Committee developing standards is already active in the same field, a project can directly provide input into the standardization processes through a **Project Liaison**, which allows the project consortium to exchange information throughout the running of the project with the standardization community and contribute to ongoing European standardization work.

Additionally, in specific cases, other standardization-related outcomes can be developed, for instance **Standardization Roadmaps or Strategies**, in which the current status of standardization in a specific area is outlined following an extensive analysis of a topic regarding standardization and potentially spot the gaps that can be investigated for future standardisation activities. They can include future fields of activities and concrete recommendations, usually summarized focusing on innovative and upcoming topics.

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<sup>1</sup> <https://ec.europa.eu/docsroom/documents/48598>

**CEN-CENELEC Guide 39** “The role of standards in support of Technology Transfer”<sup>2</sup> explains the link between standardization and the innovation process, with specific attention to the interplay between patents and standards. General information about addressing research and innovation in standardization activities is provided in **CEN-CENELEC Guide 23**, “Research Consortium Bridge – Addressing Research and Innovation in European Standardization activities and deliverables”<sup>3</sup>. Additionally, **CEN-CENELEC Guide 29**, ‘CEN/CENELEC Workshop Agreements – A rapid way to standardization’ explains the value, purpose and benefits of the Workshop Agreement, a reference document to be quickly developed for innovative markets.

Within CEN and CENELEC, the **BTWG STAIR (STAndards, Innovation and Research)** is acting since 2009 as the focal point for discussing how standardization can strengthen the link with the EU Framework Programmes for Research and Innovation and support the market uptake of projects’ outcomes.

CEN and CENELEC welcome the recent initiatives that the European Commission is undertaking to support the value of standardization in valorising research results as:

- **Code of Practice for researchers on standardisation** to provide a set of recommendations on how beneficiaries of public R&I funds can best valorise projects results through standardisation
- **Standardization Booster** to support EU Research and Innovation projects to valorise results through standardisation and address urgencies identified in the EU Strategy on Standardisation.
- **Knowledge Valorisation Platform** that connects players in Europe with the ambition to turn research results into sustainable products and solutions for the public good, be it economic or environmental benefits, social progress or improved policy making.

## Results achieved and success stories

Standardization aspects have been considered since FP4, with increasing interest in FP7 and in Horizon 2020, where its role as an exploitation enhancer was recognized. More than 140 Horizon 2020 projects had been carried out with the participation of a National Standardization Body – Member of CEN or CENELEC – in the consortium. The fruitful connection between Horizon 2020 projects and the standardization system led to more than 70 new standards (and pre-standards) developed with input from research projects.

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<sup>2</sup> [www.cencenelec.eu/media/Guides/CEN-CLC/cenclcguides39.pdf](http://www.cencenelec.eu/media/Guides/CEN-CLC/cenclcguides39.pdf)

<sup>3</sup> [www.cencenelec.eu/media/Guides/CEN-CLC/cenclcguides23.pdf](http://www.cencenelec.eu/media/Guides/CEN-CLC/cenclcguides23.pdf)

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### **Success Story: SPIDIA and SPIDIA4P**

*SPIDIA (funded by FP7-HEALTH-2007-1.2.5, under grant agreement no. 222916) and SPIDIA4P (funded by Horizon 2020 under grant agreement no. 733112) developed new technologies and standards to secure high quality samples for reliable diagnosis. Through the projects, **16 new ISO International Standards (ISO) standards and CEN/Technical Specifications (CEN/TS) have been developed** addressing the pre-analytical workflows applied to personalized medicine. Standardization work has been carried out in **CEN/TC 140** "In vitro diagnostic medical devices" and in **ISO/TC 212** "Clinical laboratory testing and in vitro diagnostic test systems".*

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Horizon Europe has been developed with the ambition of valorising R&I results through standardization to the highest possible extent. These ambitions are reflected in the high references to standardization in the first set of Horizon Europe work programmes. From an analysis of Horizon Europe work programmes 2021-2022, 125 call topics referring to standardization have been identified. Moreover, 72 CEN and CENELEC technical committees developing standards have been identified as relevant for some of these calls.

The topics addressed by Horizon Europe cover sectors that are relevant for standardization activities, including health, security, digital society and many more. The table in **Annex 1** provides a non-exhaustive list of CEN and CENELEC Technical Committees relevant to each of the six Clusters under Horizon Europe Pillar II "Global Challenges and Industrial Competitiveness".

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### **Success Story: Metrology for hydrogen vehicles**

*The EMPIR-funded project **MetroHyVe** developed methods, standards and calibration facilities to ensure accurate flow metering and fair pricing for customers at refuelling stations, and methods, reference gases and online analysers provide quality assurance and control of the hydrogen dispensed. These results support the uptake of low-emission hydrogen vehicles and the growth of Europe's hydrogen economy by increasing confidence among both manufacturers and consumers. Its successor, **MetroHyVe 2** (2020-2023) will provide scientific input to standardization of sampling from hydrogen refuelling stations and develop reference materials for laboratories to be compliant with ISO 14687 and ISO 21087.*

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Since 2014 CEN and CENELEC have been collaborating with **EURAMET**, the European Association of National Metrology Institutes, on the identification of pre-normative metrology research needs in the context of the **European Partnership on Metrology (EPM)** - a key implementation tool of Horizon Europe. On an annual basis, CEN and CENELEC Technical Committees have been consulted about the emerging research and measurement needs related to standardization. In the frame of the previous research programme for metrology (supported by H2020) this cooperation led to 16 Joint Research Projects started in direct response to a standardization need submitted by CEN and CENELEC Technical Bodies to EURAMET.

## Standardization in future Horizon Europe calls

Standardization should be even more referenced in the text of the calls or in the call topics as a tool to improve project impact and ensure that project results fit into the market. Since standardization depends on consensus with all stakeholders, a good approach can be requesting “contribution to ongoing or new standardization activities” avoiding very specific requirements. Therefore, it relies on the consortium initiative to define the best way to use standardization to enhance the impact of their results. In including standardization in calls, a wide scope of research outputs should be considered. A valuable contribution can also be achieved from supplementary evidence, new insights, or scientific explanations in existing or ongoing standardization.

Another perspective related to standardization in future Horizon Europe calls is to consider existing standards providing guidance on effective innovation practices. The focus of these standards is “how it is innovated”, such as policies, strategies, and processes, rather than “what is innovated”, for example, technologies and products. The international standards EN ISO 56000:2020 Innovation management – Fundamentals and vocabulary, and EN ISO 56002:2019 Innovation management – Innovation management system – Guidance, provide the necessary support. These standards can be used by any organization, in any sector, to boost valorisation and ensure innovation success.

The Table in **Annex 2** provides a non-exhaustive list of possible topics to be considered for future Horizon Europe calls and included in Horizon Europe Strategic Plan 2025-2027. CEN and CENELEC Technical Boards and experts from CEN and CENELEC Technical Committees have been invited to indicate pre-normative needs to be addressed in Horizon Europe.

## Annex 1

CEN and CENELEC Technical Bodies relevant to the six Clusters of Horizon Europe Pillar II (non-exhaustive list)

<b>Cluster 1: Health</b>	<b>Cluster 2: Culture, Creativity &amp; Inclusive Society</b>	<b>Cluster 3: Civil Security for Society</b>	<b>Cluster 4: Digital, Industry &amp; Space</b>	<b>Cluster 5: Climate, Energy &amp; Mobility</b>	<b>Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture &amp; Environment</b>
<p><a href="#">CEN-CENELEC Advisory Board for Healthcare Standards (ABHS)</a></p> <p><a href="#">CEN/CLC/JTC 3 Quality management and corresponding general aspects for medical devices</a></p> <p><a href="#">CEN/CLC/JTC 16 - Active Implantable Medical Devices</a></p> <p><a href="#">CLC/TC 62 Electrical equipment in medical practice</a></p> <p><a href="#">CEN/TC 140 In vitro diagnostic medical devices</a></p> <p><a href="#">CEN/TC 251 Health informatics</a></p> <p><a href="#">CEN/TC 362 Healthcare services - Quality management systems</a></p>	<p><a href="#">CEN/TC 346 - Conservation of Cultural Heritage</a></p> <p><a href="#">CEN/TC 457 - Digital preservation of cinematographic works</a></p> <p><a href="#">CEN/TC 468 - Preservation of digital information</a></p> <p><a href="#">CEN/CLC/JTC 21 - Artificial Intelligence</a></p> <p><a href="#">CEN/CLC/JTC 13 - Cybersecurity and Data Protection</a></p>	<p><a href="#">CEN-CENELEC Sector Forum on Security (SF-SEC)</a></p> <p><a href="#">CEN/TC 391 Societal and Citizen Security</a></p> <p><a href="#">CEN/TC 439 Private security services</a></p> <p><a href="#">CEN/TC 224 Personal identification and related personal devices with secure element, systems, operations and privacy in a multi sectorial environment</a></p> <p><a href="#">CEN/CLC/JTC 4 Services for fire safety and security systems</a></p> <p><a href="#">CEN/TC 127 Fire safety in buildings</a></p> <p><a href="#">CEN/CLC/JTC 13 - Cybersecurity and Data Protection</a></p>	<p><a href="#">CEN/CLC/JTC 5 Space</a></p> <p><a href="#">CEN/CLC/JTC 13 - Cybersecurity and Data Protection</a></p> <p><a href="#">CEN/CLC/JTC 19 Blockchain and Distributed Ledger Technologies</a></p> <p><a href="#">CEN/CLC/JTC 21 - Artificial Intelligence</a></p> <p><a href="#">CEN/CLC/JTC 22 - Quantum Technologies</a></p> <p><a href="#">CEN/TC 352 Nanotechnologies</a></p> <p><a href="#">CEN/TC 438 - Additive Manufacturing</a></p> <p><a href="#">CEN/TC 428 - ICT Professionalism and Digital Competences</a></p> <p><a href="#">CEN/TC 310 Advanced automation technologies and their applications</a></p> <p><a href="#">CEN/TC 247 Building</a></p>	<p><a href="#">CEN-CENELEC - ETSI Sector Forum on Railways</a></p> <p><a href="#">CEN/CLC/ETSI Coordination Group Smart Grid (CG - SG)</a></p> <p><a href="#">CEN/CLC JTC 14 - Energy management and energy efficiency in the framework of energy transition</a></p> <p><a href="#">CEN/CLC/JTC 6 Hydrogen in energy system</a></p> <p><a href="#">CEN/TC 156 Ventilation for buildings</a></p> <p><a href="#">CEN/TC 467 - Climate Change</a></p> <p><a href="#">CEN/TC 88 Thermal insulating materials and products</a></p> <p><a href="#">CEN/TC 234 Gas infrastructure</a></p> <p><a href="#">CEN/TC 228 Heating systems and water based cooling</a></p>	<p><a href="#">CEN-CENELEC Sector Forum Strategic Advisory Body on the Environment (SABE)</a></p> <p><a href="#">CEN/TC 164 Water supply</a></p> <p><a href="#">CEN/TC 165 Waste water engineering</a></p> <p><a href="#">CEN/TC 183 Waste management</a></p> <p><a href="#">CEN/TC 230 Water Analysis</a></p> <p><a href="#">CEN/TC 249 Plastics</a></p> <p><a href="#">CEN/TC 411 Bio-based products</a></p> <p><a href="#">CEN/TC 463 Microbiology of the food chain</a></p> <p><a href="#">CLC/TC 111X Environment</a></p> <p><a href="#">CEN/CLC/JTC 10 Material efficiency aspects for products in scope of Ecodesign Legislation</a></p>



<a href="#">CEN/TC 450 Patient involvement in person-centred care</a>  <a href="#">CEN-CENELEC Focus Group Organ on Chip</a>			<a href="#">Automation, Controls and Building Management</a>  <a href="#">CEN/TC 442 Building Information Modelling (BIM)</a>  <a href="#">CLC/TC 65X Industrial Automation</a>  <a href="#">CEN-CLC-ETSI Coordination Group Smart Manufacturing</a>	<a href="#">systems in buildings</a>  <a href="#">CEN/TC 371 Energy performance of buildings</a>  <a href="#">CEN/TC 312 Thermal Solar Systems and Components</a>  <a href="#">CLC/TC 8X System aspects of electrical energy supply</a>  <a href="#">CLC/TC 82 Solar photovoltaic energy systems</a>  <a href="#">CLC/TC 88 Wind turbines</a>  <a href="#">CLC/TC 21X Secondary cells and batteries</a>  <a href="#">CLC/TC 69X Electrical systems for electric road vehicles</a>	<a href="#">CEN/TC 308 characterization and management of sludges</a>  <a href="#">CEN/TC 318 Hydrometry</a>  <a href="#">CEN/TC 351 Construction products: assessment of release of dangerous substances</a>  <a href="#">CEN/TC 444 Test methods for environmental characterization of solid matrices</a>  <a href="#">CEN/TC 462 Regulated chemicals in products</a>
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## Annex 2

Topics to be considered for Horizon Europe Strategic Plan 2025-2027

	Topic	Description of the need	Involved CEN and CENELEC Bodies/ Groups
<b>Energy &amp; energy efficiency</b>			
1	Hydrogen	Pre-normative research can address: <ul style="list-style-type: none"> <li>- Transmission and distribution of hydrogen</li> <li>- Retrofitting of gas/hydrogen infrastructure</li> <li>- Underground storage</li> <li>- Mobility aspects</li> </ul>	<a href="#">CEN/CLC/JTC 6 - Hydrogen in energy systems</a>  <a href="#">CEN/TC 234 Gas infrastructure</a>  <a href="#">CLC/TC 31 Electrical apparatus for potentially explosive atmospheres</a>
2	Carbon capture utilisation and storage (CCUS)	Emissions from Carbon Capture Storage plants: <ul style="list-style-type: none"> <li>- application of methods;</li> <li>- amines/amine breakdown products</li> </ul>	<a href="#">CEN/TC 264 Air quality</a>
3	Data-driven Smart Readiness Indicators (SRI)	Pre-normative research should support the development of data-driven Smart Readiness Indicators (for buildings, grids, etc) in support of the green and digital transition	<a href="#">CEN/TC 247 - Building automation, controls and building management</a>
4	In-situ Energy Performance of Buildings (in-situ-EPB-study)	In recent years the methods to measure the energy consumption of whole buildings, elements and structures also in-situ was advanced by better sensor techniques and cheaper data collection devices. The influence of weather parameter is well known in physical phenomena and calculation (e.g. EN ISO 13786), but not included in the actual drafts of in-situ standards (e.g. prEN 17887-1) due to the high effort for correcting the measuring of these parameters. Pre-normative research on the determination of Energy Performance of Buildings and Building Elements by in-situ method compared by calculation	<a href="#">CEN/TC 89 Thermal performance of buildings and building elements</a>



		method (in-situ-EPB-study) should be carried out with an evaluation of existing scientific reports on the subject and identification of further research needs.	
5	Solar Thermal Systems and Components	Pre-normative research on qualified solar radiation data, real time, forecast and archive data	<a href="#">CEN/TC 312 Thermal Solar Systems and Components</a>
6	Energy efficiency	<ul style="list-style-type: none"> <li>- Elaborate overarching standards to rate the interaction between different energy-related appliances. (Solar, HP, household appliances, storages, batteries, controllers, etc. )</li> <li>- Elaborate laboratory procedures</li> <li>- Elaborate procedures for checking the interaction in existing systems between different appliances.</li> </ul>	<a href="#">CEN/TC 312 Thermal Solar Systems and Components</a>
7	Energy and health	<p>Development of test methods for air-to-air heat recovery components, as base for product improvements in direction of better energy efficiency and air quality (health):</p> <ul style="list-style-type: none"> <li>- Assessing of transfer of air pollutants in particular by adsorption and desorption of VOCs.</li> <li>- Combined testing of air transfer from extract to supply air (EATR) and from outdoor to exhaust air (as base of OACF) for components under practical operating points.</li> <li>- Icing behaviour of combined heat and humidity recovery components.</li> <li>- Simplified test method for leakage testing of heat recovery components and ventilation units, without the use of tracer gas, for</li> </ul>	<a href="#">CEN/TC 110 - Heat exchangers</a>

		<p>sufficiently accurate determination of the actual leakage paths and leakage quantities (as cheap pre-test for manufacturers).</p> <ul style="list-style-type: none"> <li>- Influence of installation conditions and inflow situations on efficiency and pressure losses.</li> <li>- Test procedure of combined humidity and heat recovery as a basis for forecasts for the reduction of energy and power demand</li> <li>- Reliable on-site testing of leakages and efficiency.</li> <li>- Efficiency in distinct partial load operation (air velocities of &lt; 1 m/s)</li> </ul>	
8	Heating and Cooling	Harmonization of efficiency and CO2 emission calculation of different heat providing technologies	<a href="#">CEN/TC 312 Thermal Solar Systems and Components</a>
9	Smart City	High complexity to merge several topics as circular economy, resilience and digitalization require further efforts	<a href="#">CEN/TC 465</a> <a href="#">CEN/CLC/ETSI/SF-SGCC</a>
<b>Mobility</b>			
10	Cyclic Top	<p>To cope with derailment risk, members of CEN/TC 256/SC 1/WG 28 developed methods to assess and control periodic track defects as additional criterion for the need of maintenance measures on the track (to be introduced in a revision of EN 13848 series).</p> <p>An introduction of additional acceptance requirements could lead to design modifications of some of the existing established and standardised running gears. Such design modifications would lead to extensive new acceptance tests to qualify the modified running gear again as standardised.</p> <p>If modifications on established and standardised running gear</p>	<a href="#">CEN/TC 256 Railway applications</a>

		should be included as contribution for the solution it would be necessary to perform research, design and new testing. It would be necessary to find the optimal cost balance for the whole railway system and costs had to be taken by both parties, infrastructure and rail operators.	
<b>Digital</b>			
11	Cloud and edge computing	Contribute to future standards focussing on interoperability for data sharing	CEN-CENELEC BT/WG 6 is anticipating future standardization needs in this area. <a href="#">CEN/TC 144 - Tractors and machinery for agriculture and forestry</a> works on data communication protocol standards in buildings. It also liaises with <a href="#">CLC/TC 205 - Home and Building Electronic Systems (HBES)</a> and IEC/TC 57 on data exchange between the grid and the building
12	Additive manufacturing	Based on a mapping of European research projects, support the transfer of research results toward standardisation. Provide support to European research projects to identify the relevant standards.	<a href="#">CEN/TC 438, Additive manufacturing</a>
13	Building Information Modelling (BIM)	Research on existing BIM-manuals that may be standardized	<a href="#">CEN/TC 442 – Building Information Modelling (BIM)</a>
14	Nanotechnologies	Several pre-normative needs could be addressed in the area of nanotechnologies including: <ul style="list-style-type: none"> <li>- Nanomedicine / characterization methods + testing</li> <li>- Detection of the presence of nano-objects in masks</li> <li>- Taxonomy (family creation) of nanofabrication tools (cf. EuroNanoLab action at EU level in which the</li> </ul>	<a href="#">CEN/TC 352 Nanotechnologies</a>

		<p>CNRS is present via RENATECH) in order to facilitate the platforms in the display of their mean</p> <ul style="list-style-type: none"> <li>- Description of nanofabrication processes to improve the associated quality and interoperability between platforms</li> <li>- Nanoparticles in various matrices/media</li> <li>- Nanoparticles in cosmetic products (Labeling, Test methodology for assessing the risks associated with the inhalation of nanoparticles during the application of cosmetic, Analytical strategy for the evaluation of the migration of NOAAs from packaging materials</li> <li>- Medical Devices: Testing Methodology for NOAA Release Assessment</li> </ul>	
15	Smart Standards	<p>In line with the objectives of the standardisation strategy that was published by the Commission on 2 February 2022, the standards of the future should move from texts to machine-readable formats. Standards users require more capabilities from standards such as the ability to import individual requirements, automate certain tasks based on the links between data elements, etc. CEN &amp; CENELEC already plan to introduce 'machine-readable content' (Level 3) by Dec 2024. A future Horizon Europe project could focus on 'machine-interpretable content' (Level 4) capabilities by 2027.</p>	<p><a href="#">Digital and IT Strategic Advisory Group (DITSAG)</a> and <a href="#">Smart Standards</a> project team.</p>
16	Metaverse/ Augmented Reality	<p>International discussions are taking place and a future standardization need is expected.</p>	<p>No specific TC currently addressing this topic</p>

17	Industrial Dataspaces	Data economy will play a central role in the future. To achieve European sovereignty, it is necessary to establish a standards-based European approach to industrial data spaces. Contribute to the future data framework standards focusing on factory digital thread and interoperability of manufacturing data sharing.	CEN-CLC-ETSI Coordination Group Smart Manufacturing
<b>Food, Agriculture &amp; Environment</b>			
18	Agricultural and forestry machinery	To harmonized standards series EN ISO 16119 part 1-4 "Agricultural and forestry machinery - Environmental requirements for sprayers" was published in 2013 reflecting the state-of-art and equipment of the sprayers at that time.  ISO TC23 SC6 is currently investigating the need for the start of the revision and updating process of these standards. The need to have standardized test methods has been identified and pre-normative activity would be beneficial in order to be able to cover the latest state of art for this equipment.	<a href="#">CEN/TC 144 - Tractors and machinery for agriculture and forestry</a>
19	Automated, semi-automated equipment and robots for Agriculture	Pre-normative research would be important for the development to support the future development of standards on automated, semi-automated equipment and robots for agriculture, especially with a focus on the safety of machines.	<a href="#">CEN/TC 144 Tractors and machinery for agriculture and forestry</a>
20	Zero Pollution	Pre-normative research on environmental analysis of hazardous substances	<a href="#">CEN/TC 444 Environmental Characterization</a>  <a href="#">CEN/TC 462 Regulated chemicals in products</a>  <a href="#">CEN/TC 351 Construction Products - Assessment of</a>

			<a href="#">release of dangerous substances</a>
21	Biodiversity	Research on use of existing or new standards for reporting on biodiversity indicators. Pre normative research on products in support of the biodiversity strategy	<a href="#">CEN/TC 230 Water Analysis</a> <a href="#">CEN-CENELEC Strategic Advisory Body on Environment (SABE)</a>
22	Micro Plastics	Pre-normative research on analysis of nano- and microplastics in the environment and it's health and ecological impact	<a href="#">CEN/TC 444 Environmental Characterization</a>
23	Ecodesign	Assisting, through standardization for mechanical products, in the implementation of environmental requirements under the Ecodesign for sustainable products regulation (ESPR) and supporting pre-normative research to do so.	<a href="#">CEN/TC 406, Mechanical products - Ecodesign methodology</a>
<b>Mining and Metals</b>			
24	Critical raw materials (CRM)	Support the CRM Act in preparation by the EC : <ul style="list-style-type: none"> <li>- Sustainable Mining</li> <li>- Chemical Analysis</li> <li>- CRM recycling</li> <li>- Specifications and performances of Secondary CRMs</li> </ul>	No specific TC currently addressing this topic at the moment.
<b>Health</b>			
25	Human exposure to mechanical vibration and shock	Pre-normative research addressing effects of repetitive shocks of handheld/handguided machinery on humans to derive and define consequences for occupational health and safety. This includes <ul style="list-style-type: none"> <li>- epidemiological studies on medical effects of single and repetitive shocks on occupationally active persons at the workplace with the aim of deriving best case a dose-response relationship</li> </ul>	<a href="#">CEN/TC 231 – Mechanical vibration and shock</a>

		<ul style="list-style-type: none"> <li>- measurement and signal analysis for shock vibration,</li> <li>- in vitro studies on biological function to study effect of vibration,</li> <li>- preventive measure, both in machine design and personal protection, where a need for improvement exists.</li> </ul>	
26	Anthropometric data & body measurement data	<p>A considerable part of standardization is based on body dimension data and there is a lack of up-to-date comprehensive anthropometric data.</p> <p>In addition, the recently published ISO/IEC Gender Responsive Standard Guidelines emphasize the importance of gender-specific data sets to develop gender-responsive standards.</p> <p>Research projects in this field could not only close an important data gap but also provide gender-specific data sets needed to develop gender-responsive standards.</p>	<p><a href="#">CEN/TC 122 Ergonomics</a></p> <p><a href="#">CEN/TC 207 Furniture</a></p> <p><a href="#">CEN/TC 162 Protective clothing including hand and arm protection and lifejackets</a></p> <p><a href="#">CEN/TC 332 Laboratory equipment</a></p> <p><a href="#">CEN/TC 136 Sports, playground and other recreational facilities and equipment</a></p>
<b>Space</b>			
27	Safety of GNSS based Systems	Pre-normative research addressing the safety of GNSS based systems with special focus on jamming and spoofing attacks.	<a href="#">CEN/CLC/JTC 5</a>
28	Space weather	Currently, space environment data collection is mostly done by the instrument teams on various ESA, NASA, JAXA, and other agency's missions. Different data products, often even from the same satellite mission, use different formats and rarely use the standard practices accepted for metadata in more coordinated communities such as atmospheric and oceanic sciences. As a consequence of	<a href="#">CEN/CLC/JTC 5</a>

		<p>this lack of standardization, the accessibility and reusability of data provided by satellite missions are substantially limited. The rapidly growing number of satellites and increasing number of satellite measurements of the space environment prompts a rapid development of the standards that can be considered by the ISO WG4 committee.</p>	
<b>Industrial machinery</b>			
29	Chain hoist	<p>Chain hoists are used in almost all areas of the industry and also in the entertainment business. Major problems of the chain drives are the poor efficiency and the needed open, mineral oil based, lubrication. In addition the manufacturing of the chains is quite energy consuming because of the needed heat treatment and coating.</p> <p>Pre-normative research is needed for chain drives especially to reduce the amount of lubrication and to increase the efficiency. The impact to the wear of the entire chain drive with organic lubrication should be investigated bringing together the main players from research and industry.</p> <p>Such pre-normative research could feed into a revision of the EN 818 standards.</p>	<p><a href="#">CEN/TC 147 Cranes-Safety</a></p> <p><a href="#">CEN/TC 168 - Chains, ropes, webbing, slings and accessories - Safety</a></p>



## ABOUT CEN AND CENELEC

CEN (European Committee for Standardization) and CENELEC (European Committee for Electrotechnical Standardization) are recognised by the European Union (EU) and the European Free Trade Association (EFTA) as European Standardization Organizations responsible for developing standards at European level, as per European Regulation 1025/2012. The members are the National Standards Bodies (CEN) and National Electrotechnical Committees (CENELEC) from 34 European countries. European Standards (ENs) and other standardization deliverables are adopted by CEN and CENELEC, are accepted and recognized in all of these countries. These standards contribute to enhancing safety, improving quality, facilitating cross-border trade and strengthening of the European Single Market. They are developed through a process of collaboration among experts nominated by business and industry, research institutions, consumer and environmental organizations, trade unions and other societal stakeholders. CEN and CENELEC work to promote the international alignment of standards in the framework of technical cooperation agreements with ISO (International Organization for Standardization) and the IEC (International Electrotechnical Commission).