



SLOVENSKI STANDARD SIST-V CEN/CLC Guide 39:2022

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Vloga standardov v podporo prenosu tehnologije

The role of standards in support of Technology Transfer

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**The role of standards in
support of Technology Transfer**

Edition 1, March 2022



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European foreword

This document (CEN-CENELEC Guide 39:2022) has been prepared by CEN-CENELEC BT WG 3 'STANDARDIZATION, INNOVATION AND RESEARCH (STAIR)'.

It is intended for use by the CEN and CENELEC Members in their contacts with Research and Innovation stakeholders.

Standardization and innovation are often presented by arguing that standardization can block innovation. This guide helps to counter this argument by highlighting the role of standards in promoting innovation in the market place.

NOTE Where the expression CEN-CENELEC appears it refers to CEN and CENELEC jointly.

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1 Why this Guide?

Technology transfer (TT) refers to the process of conveying results stemming from scientific and technological research to the market place and to wider society, along with associated skills and procedures, and is as such an intrinsic part of the technological innovation process.

Technology transfer covers the complex value chain linking research to its eventual societal deployment.

Relevant in any such value chain are¹:

- to protect the technical invention
- to exploit it; and
- to bring it to market.

When browsing relevant material on the web, it strikes that typically the protection of intellectual property and related licensing are addressed (e.g. https://ec.europa.eu/info/research-and-innovation/law-and-regulations/technology-transfer_en).

Yet, it is obvious that innovations, when brought on the market, also will depend on standards and have to consider standardization.

OECD in its Oslo Manual 2018² recognizes standardization as an innovation activity. A variety of opportunities of using standards and standardization as innovation indicators has been investigated³.

Nevertheless, “while increasing ground has been covered by scholars on the basic picture regarding economic impacts of standards, there is need for more granular evidence, particularly in fields like open innovation research (...) or technology and knowledge (standards) research. In the context of the latter, the topic of indicator development seems a particularly pristine field. For example, [...] a variety of channels for technology transfer, but not standards or contributions to standardization.”⁴

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It is fair to say though that the EC within its “EU valorisation policy”⁵ recognizes the value of standards as a crucial tool to get the most out of research results as standards “form a common language that allows researchers, people and industry to communicate, produce and commercialise products and services”.

In this Guide, we therefore will address:

- the benefits of standards and standardization to innovators;
- the links of intellectual property, patents and licensing with standardization.

¹ https://knowledge4policy.ec.europa.eu/technology-transfer/what-technology-transfer_en

² OECD/Eurostat (2018), Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg, <https://doi.org/10.1787/9789264304604-en>

³ Standardization and Standards as Research and Innovation Indicators : Current opportunities and future challenges; Knut Blind, 2016; available from <https://www.oecd.org/sti/049> - BlueSky_Standards_Blind.pdf

⁴ Radauer, Alfred (2020) Driving from the fringe into spotlight. The underrated role of standards and standardization in RTDI policy and evaluation. feval Journal for Research and Technology Policy Evaluation (51). pp. 59-65. ISSN 1726-6629; available from <https://repository.ftval.at/547/>

⁵ https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/eu-valorisation-policy_en

NOTE This Guide is intended to be of a general nature; developments such as recommended approaches to data standardization, whilst increasingly important (“industrial data is worth its weight in gold when it comes to developing new products and services. But the reality is that 80% of industrial data is still collected and never used. This is pure waste.”⁶), are not addressed here. How standards will support the industrial data value chain is a work in progress. For more information, one can access the discussions at the stakeholder workshop that took place on 28 September 2021.⁷

2 To whom is this Guide addressed?

The main target audience of this Guide are the researchers and providers of new technologies who want to see their research outcome or new technology taken up by the market as well as innovators, entrepreneurs and start-ups who want their innovation to enter the market, and are interested to know whether and how standardization can help them to meet their objective.

The use of standardization in support of the uptake of an innovation by the market consists of:

- the application of existing standards on which the innovative product/service relies;
- contributions to and participation in the standardization process, to ensure the standards accommodate the innovative product/service.

Whilst both aspects will be touched upon in this Guide, most attention will go to the ways researchers/innovators/entrepreneurs can interact with standardization, and what it brings for them.

Another target audience of this Guide are policymakers in Science, Technology and Innovation, operators of funding programs and venture capitalists investing in technological innovation.

Consequently, the Guide contains information on how researchers and innovators can make initial contacts with the standardization community, as well as information on the ways that CEN and CENELEC can offer them to take advantage of standardization.

General information about how research and innovation can be addressed in European standardization activities and deliverables is provided in CEN-CENELEC Guide 23, “Research Consortium Bridge – Addressing Research and Innovation in European Standardization activities and deliverables”⁸.

3 Standards and Innovation

3.1 How do standards help innovation?

Standardization will help to:

1. Promote and commercialize your innovation:

Standards create trust and enable consistency, as well as ensuring interoperability. They can ease scalability and market access. This makes it much more likely that the European and international markets will respond well to your innovation.

Companies that have contributed to the drafting of the standard will have a first-mover advantage compared to those who learn about the standard once it is published and whose solutions can be then out of the standard requirements, thus needing costly adaptations or losing the market advantage of being covered by a standard.

⁶ State of the Union Address by President von der Leyen at the European Parliament Plenary - 16 September 2020 - available from https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_20_1655

⁷ <https://www.cencenelec.eu/news-and-events/events/2021/2021-09-28-ws-standards-in-support-of-the-industrial-data-value-chain/>

⁸ <https://www.cencenelec.eu/media/Guides/CEN-CLC/cenclguide23.pdf>

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2. Comply with regulations:

The EU has an active standardisation policy that promotes standards as a way to better regulation and enhance the competitiveness of European industry. There is a variety of Directives⁹ which contain essential requirements for products to be allowed on the EU-market and where the technical specification to provide presumption of conformity with those essential requirements is described in related harmonized standards¹⁰; the essential requirements typically address safety for health, consumers and for the environment. Being involved in the elaboration of the standards makes it much easier for your work to comply with existing regulations.

3. Provide in-demand customer service:

The methodologies you use to provide your services will be instantly recognized if they are covered by standards, making it easier to drive demand for them. Standards support also helps to make sure your testing methods are up-to-date and the results comparable.

4. Keep up with leading technologies:

Standards provide information on leading industry technologies and practices, and are the basis of continuing education through testing, certification, and more. Participating in standardization activities allows you to keep abreast of market, technology, and policy changes—knowledge of which supports your entry to market and helps to enable interoperability.

5. Grow your network and establish an ecosystem:

Standardization is a co-creation process that spans different roles and sectors, including those involved with new technologies. This means that you will cross paths with a whole new scope of potential partners, including potential users and customers of your novel technology. As a co-creation process, standardization also links with open innovation, a concept also promoted by the European Commission.¹¹

6. Reputation:

Actively contributing to state of the art standardization will increase the recognition of your expertise and the reputation of your organization.

Examples of standardization supporting the uptake of an innovation are available from <https://www.cencenelec.eu/get-involved/research-and-innovation/standards-for-innovation-examples>.

On <https://www.standardsplusinnovation.eu/stories>, more “inspiring stories” can be found that show what standards have to offer to a researcher or innovator.

Other stories may be found on <https://www.cencenelec.eu/get-involved/research-and-innovation/cen-and-cenelec-activities/standards-innovation-awards/>, in particular the **Individual researcher/innovator** awards given to individuals who successfully introduced their research outcome or innovation into standardization, thereby creating impact for their work.

⁹ See https://ec.europa.eu/growth/single-market/goods/new-legislative-framework_en

¹⁰ Using the terminology from Art.2, EU Reg. 1025/2012, ‘harmonised standard’ means a European standard adopted on the basis of a request made by the European Commission for the application of Union harmonisation legislation; the objective is of course the facilitation of the single market; this relies on standardization since European Standards have to be implemented as National Standards for all 34 CEN-CENELEC member countries

¹¹ “Open innovation, open science, open to the world - A vision for Europe” (2016); EC DG R&I; available from <https://op.europa.eu/s/tzfd>

3.2 The role of standards throughout the Innovation process

Whilst standards become more relevant where a technology matures (higher Technology Readiness Levels (TRLs)), standards do support all stages of innovation, since the subjects that can be addressed by standards cover the full innovation cycle, as illustrated by the examples suggested in Figure 1.

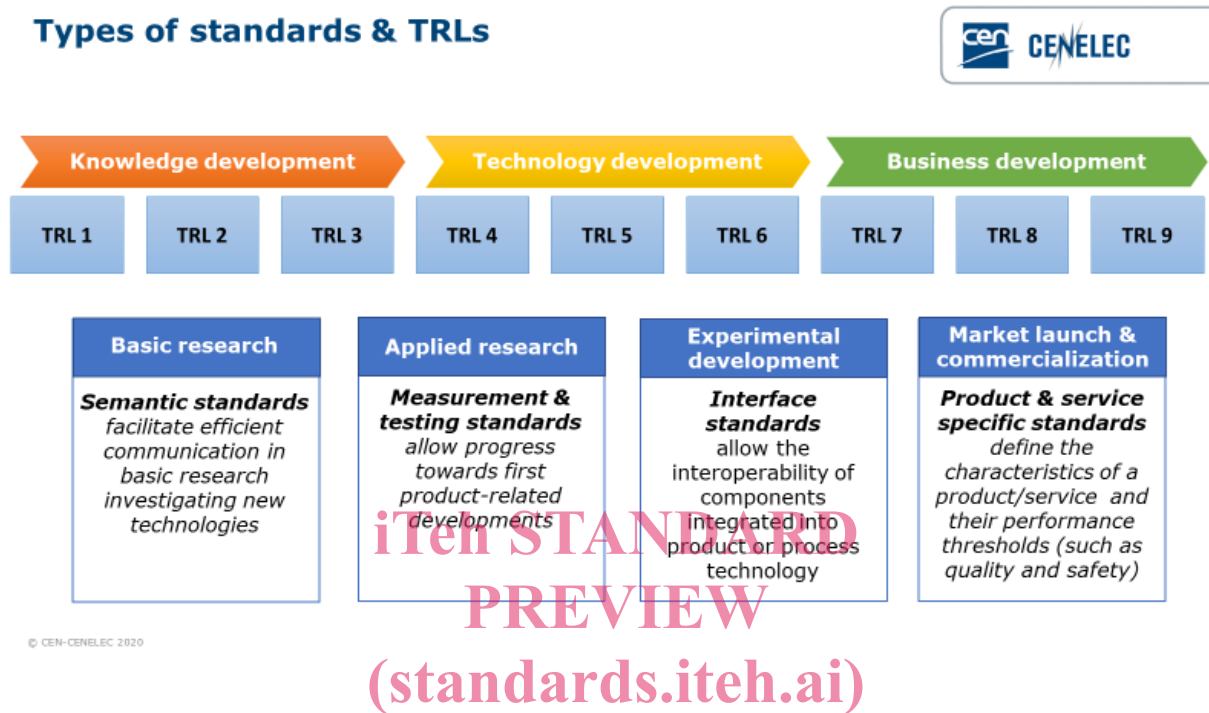


Figure 1

The two examples in Figure 2 and Figure 3 illustrate the value of standardization in support of low TRLs.

<https://standards.iteh.ai/catalog/standards/sist/a1ed0919-add7-48d0-b411-e0421125dfcc/sist-v-cen-clc-guide-39-2022>

Low TRL – Vocabularies Example 1 – Quantum Technologies

► From IEEE web -site

P7130 - Standard for Quantum Computing Definitions

ACCESS VIA SUBSCRIPTION

Explore This Project

Project Details

Project Details

This standard addresses quantum computing specific terminology and establishes definitions necessary to facilitate communication.

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Figure 2