Bridge the Gap between Research, Innovation and Standardization Community

Evidence-based Recommendations for Horizon Europe

1   Introduction

Making the leap from lab to market

Standardisation supports taking great ideas from lab to market by enabling the timely and market driven transfer of research and innovation results to the European and international market.[1] The objective of European standardisation is to agree on common specifications and/or procedures that respond to the needs of business and meet consumer expectations.

Close collaboration between a wide range of stakeholders *including experts from assessment, testing, and inspection bodies; business, industry, SMEs and start-ups; consumer organisations; environmental and societal organisations; research and technology organisations*; and standardisation bodies creates conditions for innovation, methodical soundness and functionality, stability and security of investments, practicability, and market relevance.[2]

Interoperability and standardisation are key to removing barriers and thus supporting economic growth.[3,4] They consolidate the European Single Market and strengthen the global competitiveness of European companies.

From Horizon 2020 to Horizon Europe

Setting up the 8th Framework Programme for Research and Innovation, Horizon 2020, the European Union considered these facts within the legislative framework (REGULATION (EU) No 1290/2013[5], REGULATION (EU) No 1291/2013[6]) as well as in the elaboration of the specific work programme with its calls and topics, where several references for the use of standards and the contribution to standardisation activities can be found.

The European Commissions' *In-depth interim evaluation of Horizon 2020,* SWD(2017) 220, reports that standardisation, interoperability, and norms are seen as feeding into the "Reinforcement of Framework Conditions for R&I" and thus promote the expected impacts of the programme. This is mainly true for existing technical standards as they give access to the state of the art and help researcher comply with health and safety legislation or other regulatory requirements. However, as this evaluation shows, particularly of the thematic priorities LEIT-NMBP and LEIT-SPACE, R&I projects tend to take into account existing standards but do not yet make enough use of the standardisation system as a means to disseminate and codify their results and to facilitate the exploitation of innovations. And this is where the evidence-based recommendations proposed by the BRIDGIT2-consortium start.

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[1] **COM(2015) 550** *Upgrading the Single Market: more opportunities for people and business*

[2] **COM(2016) 176** *ICT Standardisation Priorities for the Digital Single Market*

[3] **COM(2017) 453** *The annual Union work programme for European standardisation for 2018*

[4] **COM(2018) 686** *The annual Union work programme for European standardisation for 2019*

[5] **REGULATION (EU) No 1290/2013** *laying down the rules for participation and dissemination in "Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)"*

[6] **REGULATION (EU) No 1291/2013** *establishing Horizon 2020 - the Framework Programme for Research and Innovation*

2 Recommendations – Standardisation in Horizon Europe

Policy Making

- ⊘ Refer to standardisation within the definitions of **dissemination** and **exploitation**
- ⊘ **Missions** (long-term and high-impact initiatives) shall always consider standardisation as part of their planning and evaluation criteria
- ⊘ Consider the European standardisation system as a part of the European innovation landscape and thus promote its collaboration with the **European Innovation Council** and the **European Institute of Innovation and Technology**
- ⊘ Set up tools for **ad-hoc** and **follow-up financing** for standardisation

The recommendations above are dedicated to policy makers from the European Commission, the European Parliament, and the European Council setting up the legal framework for Horizon Europe.

Elaboration

- ⊘ **Systematically consider** standardisation within the preparation of calls. Increase the general references to standardisation **consistently** in the calls and improve the **quality of references** in specific topics

This recommendation is dedicated to members of the European Commission, the (associated) member states, their ministries and of their National Contact Points, the European Technology Platforms, and the Public Private Partnerships responsible for the elaboration of the detailed work programme including calls and topics.

Implementation

- ⊘ Emphasise the **advantage of** the **consultation** of or the **collaboration** with the European Standardisation System in general and with the National Standards Organisations in particular in a project, if it is asked to contribute to standardisation or to develop standards. Ask the **National Contact Points** to raise awareness on this subject and to inform about the possibility to get supported by National Standards Organisations
- ⊘ Enhance the **awareness of evaluators and project officers** and include consideration of and contribution to standardisation among the **evaluation criteria**

The recommendations above are dedicated to National Contact Points, evaluators, and project officers consulted during proposal writing and submission as well as involved in proposal evaluation and project review.

Evaluation

- ⊘ Refer to standardisation as **economic impact pathway indicator** to set **incentives for the R&I Community** for addressing standardisation

This recommendation is dedicated to policy makers from the European Commission, the European Parliament, and the European Council responsible for project and programme evaluation.

3 Evidence – Standardisation in FP7 and Horizon 2020

Policy Making

Recommendation	Evidence
● Refer to standardisation within the definitions of **dissemination** and **exploitation**	*For one thing, **standards make results of a project public**, they transfer its knowledge and results. On the other hand **standards make effectively use of the results** produced in a project in further activities.[7,8] Thus standards fulfil both definitions of dissemination and exploitation set down in COM(2018) 435[9], Article 2 (10) and (11).*
● **Missions** (long-term and high-impact initiatives) shall always consider standardisation as part of their planning and evaluation criteria	*There is no specific evidence on this topic but there are historic examples showing that the lack of timely standardisation has led to compatibility problems, duplication and waste of efforts. Therefore, the planning, discussion and road-mapping of standardisation, or even the standard-setting when relevant, shall be considered and required as a **strategic aspect** in this kind of actions, to rationalise and optimise the development of the arising fields.*
● Consider the European standardisation system as a part of the European innovation landscape and thus promote its collaboration with the **European Innovation Council** and the **European**	*Standardisation is a catalyst for innovation. This has been recognised by the European Union (REGULATION (EU) No 1025/2012[10] (3), (19)) indicating that European standardisation also helps to boost the competitiveness of enterprises by facilitating in particular the free movement of goods and services, network*

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[7] http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html

[8] **European IPR Helpdesk**: *Making the Most of Your H2020 Project. Boosting the impact of your project through effective communication, dissemination and exploitation, 2018*

[9] **COM(2018) 435** E*stablishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination*

[10] **REGULATION (EU) No 1025/2012** *on European standardisation*

Policy Making

Recommendation	Evidence
Institute of Innovation and Technology	*interoperability, means of communication, **technological development and innovation**. Additionally it is said that standards can contribute to helping Union policy address the major societal challenges such as climate change, sustainable resource use, **innovation**, ageing population, integration of people with disabilities, consumer protection, workers' safety and working conditions.* *The OECD refers in their Oslo Manual[11] to the share of firms engaged in standard-setting activities as **indicator of external factors influencing innovation**.*
● Set up tools for **ad-hoc** and **follow-up financing** for standardisation	*Research actors **do not always plan standardisation activities** in their initial work plan (at the proposal stage) and the need for standardisation may arises during the projects, once they have delivered their first results. Additionally the **standardisation needs may appear at the end of the projects**, when the research delivers its results, meaning that the resources and time are lacking to address these needs.[12]*

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[11] **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*

[12] **CEIS and EY**: *Market Study on Standardisation in EU Framework Programmes* (H2020 and FP7), 2018

Elaboration

Recommendation	Evidence
⊘ **Systematically consider** standardisation within the preparation of calls. Increase the general references to standardisation **consistently** in the calls and improve the **quality of references** in specific topics	*About **20%** of 1500 Horizon 2020 topics refer to standardisation. These **referrals vary significantly** by the type of action. Whereas 90% of the Coordination and Support Actions (CSA) refer to standardisation, just 14% of the Research and Innovation Actions (RIA) and 17% of the Innovation Actions (IA) refer to it. With regard to the thematic priority 60% of Nanotechnology (LEIT-NMP) topics refer to standardisation and just 5% of Society (SC6) topics.* *Regarding the quality of standardisation references **38%** of the 300 Horizon 2020 topics referring to standardisation ask for the **contribution to standardisation and the development of standards**. Whereas the leftover 62% give just vague standardisation references. [13]*

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[13] **BRIDGIT 2**: *Desktop Research on Standardisation in EU Framework Programmes*, 2018

BRIDGIT2

Implementation	
Recommendation	Evidence
⟳ Emphasise the **advantage of** the **consultation** of or the **collaboration with** the European Standardisation System in general and with the National Standards Organisations in particular in a project, if it is asked to contribute to standardisation or to develop standards. Ask the **National Contact Points** to raise awareness on this subject and to inform about the possibility to get supported by National Standards Organisations	*About 20% of 1500 Horizon 2020 topics refer to standardisation. 38% of the 300 Horizon 2020 topics referring to standardisation ask for the* **contribution to standardisation and the development of standards**.[14]
	First of all, about 45% of 57 assessed FP7 and Horizon 2020 projects involving National Standards Organisations found it **easier than expected to address standardisation;** *compared to 14% of 54 FP7 and Horizon 2020 projects not involving a Standards Organisation. Or perhaps even more important that only 10% of the projects involving National Standards Organisations disagreed with this statement; compared to 34% of the projects where no Standards Organisation was involved.*
	About 61% of the mentioned 57 FP7 and Horizon 2020 projects involving National Standards Organisations stated that the **standardisation process was/is adapted to the projects timeframe**; *compared to 33% of the mentioned 54 FP7 and Horizon 2020 projects not involving a Standards Organisation. Again, perhaps even more important that only 7% of the projects involving National Standards Organisations disagreed with this statement; compared to 26% of the projects where no Standards Organisation was involved.*
	About 29% of the 57 FP7 and Horizon 2020 projects involving

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[14] **BRIDGIT 2**: *Desktop Research on Standardisation in EU Framework Programmes*, 2018

Implementation

Recommendation	Evidence
	*National Standards Organisations **contribute to the development, revision, and proposal of new standards**; compared to 13% of 54 FP7 and Horizon 2020 projects where no Standards Organisation was involved.*
	***70% of the standardisation deliverables** submitted by the 57 projects involving National Standards Organisations were some kind of European or international standards. Not involving a Standards Organisation led to the fact, that no tangible standardisation results were developed, i.e. having missed the opportunity to transfer research results into the market using standards applied by industry.*
	*Finally, it should be emphasised that **87%** of the interviewees **were (very) satisfied when a National Standards Organisation was involved**.[15]*
● Enhance the **awareness of evaluators** and **project officers** and include consideration of and contribution to standardisation among the **evaluation criteria**	*The knowledge interviewed evaluators and project officers have of standardisation is often limited to a general awareness of existing standards and their importance in the dissemination and exploitation phase of the projects.*
	***Evaluators and project officers** acknowledged that they would be **interested in receiving training** and disposing of adequate tools to help them evaluating and monitoring standardisation activities in the proposals and projects, in particular for projects*

[15] **CEIS and EY**: *Market Study on Standardisation in EU Framework Programmes* (H2020 and FP7), 2018

Implementation	
Recommendation	Evidence
	which identify new standardisation needs and develop new standards.[16]

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[16] **CEIS and EY**: *Market Study on Standardisation in EU Framework Programmes* (H2020 and FP7), 2018

BRIDGIT2

Evaluation	
Recommendation	**Evidence**
◆ Refer to standardisation as **economic impact pathway indicator** to set **incentives for the R&I Community** for addressing standardisation	*The economic benefit of standardisation was quantified in some countries. In Germany standards save the economy **EUR 17 billion per annum**[17]. In France standardisation contributes directly to improving GDP at the rate of over **EUR 5 billion per year** on average[18]. In Great Britain 28.4% of annual GDP growth can be attributed to standards, equivalent to **EUR 9 billion**[19]. The European Commission is highly interested in the economic benefit of standardisation for all EU and EFTA member states, which is why a specific call for tender was launched to address this topic[20]. Thus standards shall be implemented as economic impact pathway indicators, just like IPR applications, in SWD(2018) 307[21] Part 2.*
	*In this regard the initiation of new standardisation activities or the publication of new standards would become **Key Performance Indicator** and thus fulfil the demand of **58%** of 111 experts of the R&I Community which stated, that standards should form part of the incentive/reward system in science, to ensure that standards count like scientific publications or output and to contribute to the academic/scientific 'status' and credibility, that they can justify their efforts in this respect[22].*

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[17] https://www.din.de/blob/79542/946e70a818ebdaacce9705652a052b25/gesamtwirtschaftlicher-nutzen-der-normung-data.pdf

[18] https://normalisation.afnor.org/wp-content/uploads/2016/06/Etude-ImpactEcoNorm-GB2009.pdf

[19] https://www.bsigroup.com/LocalFiles/en-GB/standards/BSI-standards-brochure-how-standards-benefit-businesses-and-the-UK-economy-UK-EN.pdf

[20] https://etendering.ted.europa.eu/cft/cft-display.html?cftId=4023

[21] **SWD(2018) 307** Impact assessment

[22] **Technopolis**: *Market Study on Needs and Challenges of Research and Innovation Communities with regard to Standardisation*, 2018

4 Benefits

A distinction can be made between the **use of existing standards** and the **contribution to future standard-setting activities**.

Use of existing standards

- ✅ **Access to and information about the state-of-the-art** and thus promotion of rationalisation and avoidance of double work
- ✅ **Assurance of compliance** with market conditions, grant of interoperability, and compatibility
- ✅ **Increase of transparency** for prospective customers and thus increase of consumer confidence and trust in innovative solutions

Contribution to future standard-setting activities

- ✅ **Access to a unique and global platform** to discuss R&I project results with stakeholders and potential customers (Networking)
- ✅ **Transfer of knowledge and R&I project results** in marketable solutions fostering the market uptake via publicly available standards (Dissemination)
- ✅ **Efficient use of R&I project results in further activities** well beyond the project duration (Exploitation)
- ✅ **Utilise the existing and interconnected** national, European (CEN, CENELEC), and international (ISO, IEC) standardisation system for co-creation and knowledge transfer for international dissemination (Upscaling)