

## Summary statement

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- In order for standards to be sustainable and effective, they should be widely shared and adopted. Therefore, standardisation would benefit from a more integrative approach. Currently, the EU domain in standardisation is rather fragmented.
- In developing standards, the practitioner perspective should be key. Standards should address the needs voiced by practitioners and, therefore, it is recommended to include practitioners in an early phase of the projects.
- Standards form an important step towards policymaking; one European standard replaces the standards on the nation level, which enhances interoperability between Member States. Therewith, standardisation can simplify complexity.

## Introduction

This CoU brief summarises the topic standardisation and relevant EU-funded projects that participated in the 13th Meeting of the Community of Users (CoU) on Secure, Safe and Resilient Societies that took place 25 – 29 March 2019 at the BAO convention centre in Brussels.

The Community of Users is a DG HOME initiative that aims to improve information transfer of research outputs and their usability by different categories of stakeholders. During the meetings and thematic workshops, policy updates and information about H2020 projects are provided and interactive discussions facilitated to ensure that solutions and tools resulting from research will reach users.

## Scope & Relevance

Standardisation is a useful tool to address the challenges that our increasing complex societies pose. Through the development and application of standards, cooperation of all kinds are facilitated and, therefore, standardisation is not to be perceived as a goal in itself, but rather as a contribution to a larger goal. An example of

the added value of standards can be found in the EU single market where standards eliminate technical barriers to trade and facilitate the free movement of goods and services, network interoperability, means of communication, technological development and innovation.

However, standards are different from legislation; the former enhances consistency and is applied on a voluntary basis. The latter is compulsory and is often based on voluntary agreements such as standards. In a way, standards can be understood as the foundations for policies; in some cases, one EU standard can replace 34 national standards and, thereby, standards are a vehicle for policy implementation.<sup>1</sup> European standardisation is based on WTO principles such as coherence, transparency, openness, consensus, voluntary application, independence from specific interests, and efficiency, which ensures the interoperability of products.<sup>2</sup>

However, the EU domain of standardisation is fragmented; a plethora of organisations is tasked with standardisation activities at the EU level and thereby, duplicate and compete against each other. Therefore, it is essential to coordinate the work of these bodies. In addition, one should remain critical towards creation of new standards. In-depth research is required in order to understand which standards are 'out there' already and one needs to explore whether the creation of a new standard is necessary. To this end, the need for a mechanism through which various stakeholders can decide whether a new standard is needed was voiced during the 13th CoU event. In this pre-normative standardisation process, different policy domains would need to be included in order to allow for an integrative approach. Moreover, taking into account the voices of the practitioners in (deciding on) developing new standards is essential in order to ensure standards are operationalised. Such bottom-up approach is likely to yield more practitioner-oriented standards that are reflecting the operational realities on the ground.

Nevertheless, it should be noted that standardisation is an area prone to failure. Due to the large area of implementation, the success of a standard depends heavily on if and how it is ultimately applied. This underscores the need for practitioner involvement in the pre-standardisation process in order to ensure that standards are in line with the needs of those who need to work with the standards, in the end.

## Thematic focus areas

During the 13th CoU event, the Thematic Workshop on Standardisation was divided into three subthemes, which are presented below:

1. Standardisation in crisis management
2. Standardisation in CBRN-E
3. Standardisation coordination

## Standardisation in crisis management

Successful crisis management is heavily dependent on effective communication. However, the transboundary nature of crisis management situations, poses a challenge to the communication strategies as one faces 28 different national work processes and 24 different languages. Standardisation enables the harmonisation of existing processes and practices, and helps to develop a common language. Through standardisation, the level of trust can be strengthened and the operational understanding between (national and international) stakeholders can be improved. Therewith, standardisation can simplify complexity.

However, it is essential to produce both technical standards and procedural standards showing practitioners how to use a solution. Standardisation is only effective when accurately implemented. Therefore, successful crisis management needs to build on human centred technologies and methodologies, support compliance and evidence based decision-making, and should build alliances through well-defined rules, duties, and rights. In this context standardised multilingual terminology and common understanding in multilingual and multicultural contexts is a must<sup>3</sup>. In developing such procedural standards, one needs to be aware of operational realities in order to ensure that the solution developed meets the needs of those working on the ground.<sup>4</sup>

## Standardisation in CBRN-E

CBRN-E events are by nature low in probability but high in impact. As a result, there is generally little willingness by authorities and industry to invest resources in this field. Due to the low incentive for investments, standardisation is particularly relevant to CBRN-E.

A standard must have value. It needs to be used and deployed. Standardisation can help to create a level playing field across the Union and ensure a minimum level of CBRN-E security throughout the EU. Fragmentation is a draw back for equipment providers and end users. Therefore, the fragmented CBRN-E market would benefit from standardisation, as this allows the end user to better understand which equipment is relevant, and it would structure the market. From the perspective of the industry, standardisation would be helpful in order to better understand which requirements their solutions should meet.

A key challenge in the CBRNE standardisation domain is the classified nature of some of the standards. Some information in these standards is too sensitive to be openly disseminated. One way to address this challenge is to share standards only with those who can prove that they are allowed to receive a copy.<sup>5</sup>

<sup>1</sup> [www.cen.eu/you/EuropeanStandardization/Pages/default.aspx](http://www.cen.eu/you/EuropeanStandardization/Pages/default.aspx)

<sup>2</sup> Patrica Compard, PPT common introduction on standardisation 13th CoU event, March 2019

<sup>3</sup> Caterina Berbenni-Rehm, PPT on International Standardisation for Crisis Management with PROMIS®,- 13th CoU event, March 2019. OASIS - Methodology and Terminology Policy for Multilingual Integrated Management Systems (MeTIMS) TC

<sup>4</sup> Caterina Berbenni-Rehm, PPT on International Standardisation for Crisis Management with PROMIS®,- 13th CoU event, March 2019

<sup>5</sup> As was done with standards on printing money.

## Standardisation in coordination

Coordination of standardisation is essential as it helps to overcome fragmentation and benefits sustainability. Coordination is necessary to better understand the process, the logic, and the need for standardisation. In addition, effective coordination is needed to develop a holistic approach and to visualize the gaps and overlaps, to set up priorities and identify further action needed. The CEN/CENELEC<sup>6</sup> Sector Forum Security has been set up to strengthen standardisation in coordination. The forum functions as an advisory and coordination body for standardisation activities related to security. It provides standards to address societal security challenges in order to create an EU-wide market

for security products and services. The framework intends to address the problem of fragmentation in standardisation. Also, it will raise awareness within the security industry on the benefits of EU standards.

Furthermore, JRC active supports standardisation. An example of JRC's efforts is the EU-US global survey on the current landscape in detection technology.<sup>7</sup> Based on the outcomes of this survey, a methodology was developed, which now functions as blueprint model. A key take away from this example is that the industry should be consulted in order to ensure cooperation rather than competition. Interoperability also promotes sustainability.

## Current debates & stakeholder perspectives

### Practitioners

The involvement of practitioners in standardisation is crucial to bridge the gap between theory, policy and practice. Two important advantages of standardisation for practitioners is that it can improve the interoperability and reduce costs for practitioners:

- Standardisation that results in increased interoperability (whether technological or information-based) provides substantial operational benefits, and can significantly reduce the barriers to cooperating with other practitioner organisations and identifying threats and/or situations as they develop.<sup>8</sup> Also, practitioners benefit greatly from efforts to introduce standards within other stakeholder groups (notably within industry and SMEs and within policymaking circles).
- Standardisation also has the potential of reducing the costs that practitioner organisations associate with the procurement of a new system because – once a standard is adopted and implemented – it allows increases the longevity (and modularity) of platforms. It should be noted that, while the pursuit of system interoperability may reduce costs in the long term, it also has the potential of increasing costs in the short term. In cases where new systems cannot be designed to integrate with legacy platforms, the adoption of a new technology and/or capability may require the adoption of a new platform. In these cases, the associated costs can be expected to be relatively high.

However, practitioners can also be affected by the introduction of standards. This is particularly the case with standards in which practitioner organisations are not consulted during the formulation process, by which the standards do not correctly reflect the needs of practitioners. Also, on the short term, standardisation can increase costs.

### Industry & SMEs

Industry and SMEs play a central role within efforts surrounding standardisation, in terms of formulating technical standards, and can (in doing so) push for technical interoperability. In case of European standardisation – which derives from a consensus-building process that involves a wide range of stakeholders (including industry) – industry has an important role in initiating the legislative process that results in their development and adoption. In order to have a successful standardisation process the industry needs to be involved. Otherwise, standardisation might be perceived as a way to limit the industry instead of ease their business.

### Policy

Policymakers have an important role in standardisation regarding allocating research budgets, defining parameters, lowering the costs, and using standardisation as a tool for policymaking.

- Policymakers have enough information to judge whether tendered proposals adhere to the principle of 'interoperability by design' (this can be achieved by allocating resources towards research into future technological requirements, currently supported standards, etc.)
- Policymakers can define parameters required for standards imposed.

6 [www.cenelec.eu](http://www.cenelec.eu)

7 [www.ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/report-use-eu-reference-methods-and-jrc-decision-tools-gmo-analysis](http://www.ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/report-use-eu-reference-methods-and-jrc-decision-tools-gmo-analysis)

8 See the European Interoperability Framework (EIF) as an example of a multilayer model which can be used to distinguish between technical, semantic and organizational interoperability (IOP).

- When standards are designed in such a way that they are easier to adhere to than they are to diverge from, the successful standards inevitably aggregate a critical mass of users, which increases efficiency and therewith lower costs.
- Standards are more and more often used as a tool to implement policies. One European standard does replace 34 national standards. CEN, the European Committee for Standardization, is an association that brings together the National Standardization Bodies of 34 European countries.<sup>9</sup>

## Research

Research and academia play an important role in informing the decisions of policymakers as they relate to standardisation by conducting pre-normative research. A concrete role for research stakeholders within standardisation ecosystem presents in these documents' formulation phase, during which stakeholders within the research category can contribute by analysing the (possible) negative externalities associated with the implementation of proposed sanctions.

## Relevant projects & project hubs

Activities conducted as part of the following projects were outlined by project representatives during the Standardisation session at the 13th CoU meeting:

- **EU-SENSE** (May 2018 – April 2021). The EU-SENSE project will provide an innovative technical solution to deal with selected shortcomings in CBRN-E protection indicated in the ENCIRCLE Catalogue of Technologies. The created system will be a step-forward in chemical detection by developing a novel network of sensors that exploits advanced machine-learning and modelling algorithms for improved performance.<sup>10</sup>
- **EU-CIRCLE** (June 2015 – September 2018) aims for an innovative framework for supporting the interconnected European Infrastructure's resilience to climate pressures, supported by an end-to-end modelling environment where new analyses can be added anywhere along the analysis workflow. Multiple scientific disciplines can work together to understand interdependencies, validate results, and present findings in a unified manner providing an efficient "Best of Breeds" solution of integrating into a holistic resilience model existing modelling tools and data in a standardised fashion.<sup>11</sup>
- **HEIMDALL** (May 2017 – October 2020) aims at improving preparedness of societies to cope with complex crises by providing a flexible platform for multi-hazard emergency planning and management. By making use of innovative technologies for the definition of multi-disciplinary scenarios and response plans, providing integrated assets to support emergency management, such as monitoring, modelling, situation and risk assessment, decision support and communication tools.<sup>12</sup>
- **INACHUS** (January 2015 – December 2018) aims to achieve a significant time reduction related to Urban Search and Rescue (USaR) phase by providing wide-area situation

awareness solutions for improved detection and localisation of the trapped victims assisted by simulation tools for predicting structural failures and a holistic decision support mechanism incorporating operational procedures and resources of relevant actors.<sup>13</sup>

- **PROMISE** (May 2016 – April 2019) integrates stakeholders like public health authorities and national food safety authorities from the old and new member countries in order to ensure the exploitation of research results into standardization and harmonization efforts and hence to contribute to sustainability of project outcomes.<sup>14</sup>
- **PROMIS®Lingua** (April 2011-September 2013) included the translation, localisation and the existing PROMIS® online services in nine languages (also called a "Business Enabling E-Platform"). With online automated translation systems, integrated tools for human and machine translation, structuring of content, and cross-lingual information retrievals that aim at facilitating global communication, access to tailored multilingual interactive services, advice on legislation, standardisation and the integrated application of management systems towards the organisational development of the Enterprise Services 4.0 (ENTR 4.0).<sup>15</sup>
- **SAYSO** (May 2017 – April 2019): SAYSO's mission is to define the reference architecture and specifications for future innovative European cost-effective and user-friendly situational awareness tools that fulfil end-user requirements and can be used across different organisations, hierarchical levels and national borders. The future development of SAYSO-compliant Situational Awareness Systems for Multiple Stakeholders will allow Civil Protection practitioners to share information, to analyse hazards and uncertainties, and to obtain a clear picture of the situation at hand with relevant advice.<sup>16</sup>

9 [www.cen.eu/you/EuropeanStandardization/Pages/default.aspx](http://www.cen.eu/you/EuropeanStandardization/Pages/default.aspx)

10 [www.cordis.europa.eu/project/rcn/214858/factsheet/en](http://www.cordis.europa.eu/project/rcn/214858/factsheet/en)

11 [www.eu-circle.eu](http://www.eu-circle.eu)

12 [www.heimdall-h2020.eu](http://www.heimdall-h2020.eu)

13 [www.inachus.eu](http://www.inachus.eu)

14 [www.promise-net.eu](http://www.promise-net.eu)

15 [www.promis.eu](http://www.promis.eu)

16 [www.sayso-project.eu/](http://www.sayso-project.eu/)

- **Smart Resilience** (May 2016 – April 2019) aims to provide an innovative “holistic” methodology for assessing resilience that is based on resilience indicators. SmartResilience specific objectives are to identify existing indicators suitable for assessing resilience of SCIs, to identify new “smart” resilience indicators (RIs) – including those from Big Data, to develop advanced resilience assessment methodology and tools, and to test and validate the methodology/tools in 8 case studies, integrated under one virtual, smart-city-like, European case study dealing with energy, transportation, health, water infrastructures in smart cities, tackling also cascading effects.<sup>17</sup>
- **STAIR4SECURITY** (January 2019 – December 2020) pre-standardisation project, which focuses on the needs of security policy makers, managers, and first responders. It is an expert platform. The main objective of STAIR4SECURITY is to create a collaborative platform as single entry point of information on the security sector coming mostly from research activities

allowing a better governance of standardisation needs in the Disaster Resilience and the CBRN-E (Chemical, Biological, Radiological, Nuclear, and Explosives) sectors. The platform will permit a better overview of current and new projects being at, national, European, or international level; ensuring more coordination between all stakeholders and responding more efficiently and timely to the critical needs following an agreed strategic vision and identified priorities.<sup>18</sup>

- **The Joint Initiative on Standardisation** is an informal EU initiative aiming for improvement of European Standardisation System.<sup>19</sup>
- **ERNICIP** aims to enhance the protection of critical infrastructures across the EU against all types of threats and hazards. It does so by providing a framework in which experimental facilities and laboratories can share knowledge and expertise. Hereby, protocols throughout Europe can (ultimately) be harmonised.

## Possible synergies (and links to policies and practitioners’ operations)

For an overview of DRR and resilience-related projects funded prior to 2018, see section 9 (Horizontal Issues) of DG HOME, “**Community of Users on Secure, Safe and Resilient Societies – Mapping Horizon 2020 and EU-funded Capacity-Building Projects under 2014-2017 Programmes**,”<sup>20</sup> The projects

referenced within this section of the aforementioned document are universally geared towards tackling similar subjects as those discussed in this brief, and thus have the potential of exhibiting synergies with them.

## Lessons learned, challenges, and way forward

One of the main challenges in the domain of standardisation is fragmentation. There are many ongoing projects, tools developed, and initiatives launched. However, these projects do not always communicate efficiently which results in duplication and loss of resources. A coordination and evaluation of standardisation system could help to overcome this. In addition, a pre-standardisation mechanism where all relevant stakeholders can share their vision on where standardisation could help to address the fragmentation. The result of standardisation only works when standards are widely shared. Therefore, the outreach of standardisation needs to be improved. In order to effectively implement such outreach strategy, Member States need to be able to develop a harmonised approach.

More practitioner involvement in the development of European standards is needed in order to obtain greater trust and confidence in standardisation. The development process of a CEN Workshop Agreement (CWA)<sup>21</sup> could be an excellent vehicle to support this.

Moving forward, CoU can serve as a vehicle to promote the need for standards; concrete steps could be defined to overcome this structural fragmentation. In future projects and research activities, standardisation need to be done in parallel in order to ensure research outcomes are more aligned with the market and practitioner’s needs.

The issue with standardisation in security is the fast changing environment including different and rapidly evolving technologies. Somehow, the process of standardisation needs to be speeded up; standardisation is an intensive process but due to its slow pace, standards might already be outdated when they are finalised. However, a successful standard can pave the way for policymaking. Therewith, standardisation is an important step towards simplifying complexity.

17 <http://www.smartresilience.eu-vri.eu/The-project>

18 [www.cen-stair4security.eu/](http://www.cen-stair4security.eu/)

19 [www.ec.europa.eu/growth/content/joint-initiative-standardisation-responding-changing-marketplace-0\\_en](http://www.ec.europa.eu/growth/content/joint-initiative-standardisation-responding-changing-marketplace-0_en)

20 [www.securityresearch-cou.eu](http://www.securityresearch-cou.eu)

21 [www.boss.cen.eu/developingdeliverables/CWA/Pages/default.aspx](http://www.boss.cen.eu/developingdeliverables/CWA/Pages/default.aspx)

## Key Contacts

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## Forthcoming CoU events & other related events

- 14th CoU event, 16 – 20 September, Brussels, Belgium
- Security Research Event, 6 – 7 November, Helsinki, Finland

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