ECSCI

European Cluster for Securing Critical Infrastructures –

Supporting standardization activities in the area of critical infrastructure (CI) resilience

ECSCI Projects

ECSCI Cluster

The main objective of the ECSCI cluster is to create synergies and foster emerging disruptive solutions to security issues via cross-project collaboration and innovation. Research activities will focus on how to protect critical infrastructures and services, highlighting the different approaches between the clustered projects and establishing tight and productive connections with closely related and complementary EU projects. To promote the activities in the area of standardization, ECSCI organizes expert meetings and other activities, involving standardization organizations and stakeholders involved in the standardization process in the area of critical infrastructure resilience.

ECSCI & Standardization: Supporting Collaborative Standardization

According to ECSCI founding principles, listed below standardization- and policy-related issues are one of the three main issues of interest:

1. Joint dissemination events such as workshops and conferences
2. Joint scientific publications
3. Contribution to standards & policies/regulations.

It is, therefore, natural that **searching for synergy and alignment through** the **organization of joint dissemination events**, appears as a natural way of action benefiting both the researchers (in this case from the single ECSCI projects), on one side, and all the other standardization process stakeholders. The recent ECSCI workshop

Collaborative Standardization and Policy Making for Greater CI Resilience in Europe

held online on **Dec. 5, 2023**, and organized by the ECSCI project Atlantis and its partner ICSS, Slovenia, with the participation of many running and finished ECSCI projects (PRECINT, FISHY, FINSEC, SUNRISE…). The basic idea was to search for a joint perspective, possibly also a joint strategy, among the main stakeholders: the European Commission, the running and closed projects, and the standardization.
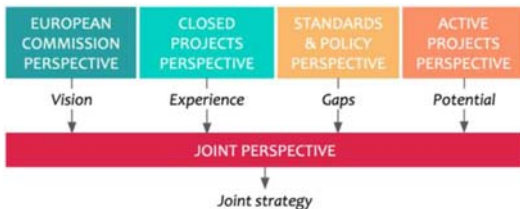
Among over 130 participants, the researchers, including SMEs, from the ECSCI projects were the most represented group (~¾). Large industry and governmental bodies, and the EU-related participants (DGs, JRC) were present with approx. 15% and 5% respectively. But no NSBs (national standardization bodies, ISO or CEN, as main representatives of the SDOs – the Standards Developing Organizations) took part, with just a few participants directly involved, as persons, in the ISO/CEN/national standardization processes.

Joint perspective – the good news: agreement about the needs…

Putting the "joint perspective" as the main point of the Workshop and the ECSCI agenda is in itself an important achievement. At the workshop, in the absence of standardization parties, the agreement about the elements was largely achieved. E.g., about the positive experiences with standardization mechanisms like CEN CWAs (CEN Workshop Agreements) and needs related to information sharing mechanisms, guidance and best practices, infrastructure datasets and resilience indicators, approaches for all-hazard and dependency assessment, improving dissemination and raising awareness, the role of AI, and foresight analysis, etc.

The needs for creating synergies between the government and private sector, bridging siloes, holistic approach to dynamic and changing environments, cross-border cooperation and other related issues were largely recognized as the way forward, but the search for the reasons why this is not happening yet was not undertaken, neither during the workshop nor in the projects.

ECSCI perspective – "We are on the right way (but…)":

The lacks/gaps in current practices were formulated primarily as recommendations and "encouragements", such as

- to refer more to relevant EU policy documents (e.g., the CER Directive, Council recommendation on resilience, and EU-NATO assessment report to identify where to contribute, or
- to better include/involve standardization bodies in the future work of ECSCI/EU projects to standardize (only!) what is really needed and what supports the regulation, and not "everything that we have produced (in the EU projects)", understood as a pragmatic imperative.

But how the "contributing to the creation of policies", how the standards should become "the core business of research projects" or how the EU projects should become "the pillars on which the future of regulation will be based" will probably still need more discussion and involvement of all stakeholders (the NSBs, in particular).

The strategy – the way forward

The need for having a "common strategy" (joint strategy), as a way to anticipate and be able to perform "foresight analyses for staying ahead" was announced as a key topic and often mentioned at the workshop. Still, no practical/-operational indication(s) related to the "how" aspects of the strategy implementation were proposed, e.g., for the issue of creating the "mechanism(s) for communicating also the 'negative experiences'".

The way forward, hence, goes over addressing the practical issues possibly hampering the implementation of the above joint strategy. These issues have to be tackled openly, in a "politicking-free" way, and include all stakeholders, not only the researchers from the EU/ECSCI projects.

The ECSCI cluster activities related to how to protect critical infrastructures and services and how to achieve "greater CI resilience in Europe", are in practice very much materialized as activities on

- *enhanced risk management and*
- *enhancing the infrastructure resilience.*

Resilience assessment helps in knowing better how an infrastructure (CI) is prepared for an adverse event, how can it withstand it, and then recover, possibly adapting-for-better afterwards. The assessment of the general "resilience level", e.g., according to the concept proposed in the ECSCI project SmartResilience, allows monitoring and comparing (also benchmarking" and "stress-testing") resilience over the operation time, independently of any particular scenarios). The resilience assessment in the case of a single adverse/disruptive event/scenario allows to predict the functionality of the infrastructure during the event (during the "scenario time") and the outcome/impact of the scenario on the infrastructure: e.g., its functionality "as-before", "better-than-before", "lost").
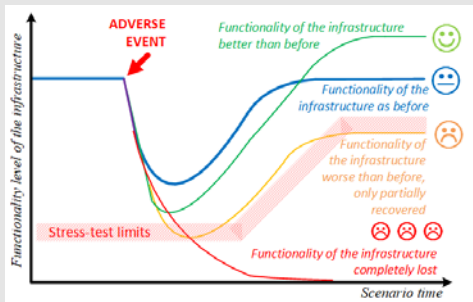

ECSCI projects yielding national and ISO standards

ECSCI project SmartResilience and InfraStress have made the above concept operational: SmartResilience, in liaison with ISO and NSBs AFNOR and ISS, has brought the concept up to the ISO level, yielding the ISO TS 31050 document on "Managing emerging risks for enhanced resilience" in 2023.
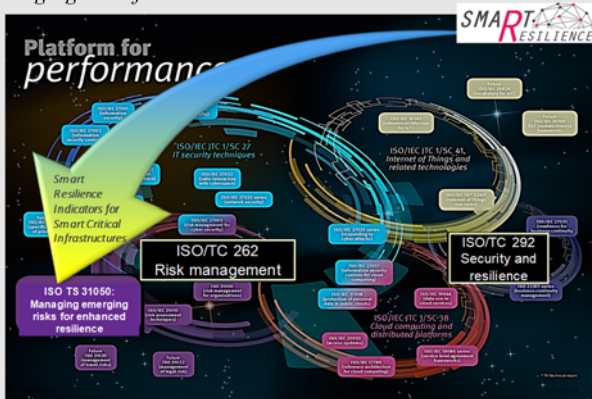
ECSCI project InfraStress, in liaison with DIN produced the DIN SPEC 91461 on "Stress-testing resilience of critical infrastructures exposed to cyber-physical threats" in 2022.
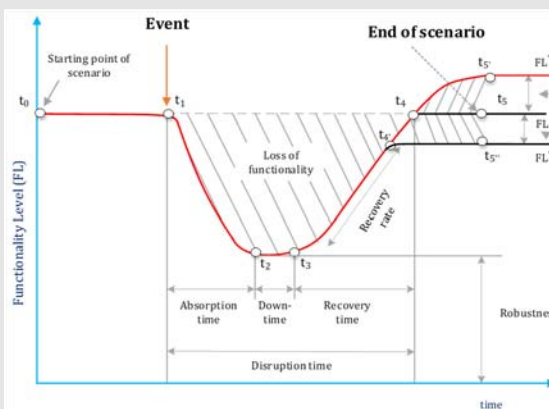
The ECSCI standardization strategy – the issues and myths to be (openly) considered and tackled

The main issues to be looked at when defining the ECSCI standardization strategy would be:

1. **Are the interests of the EU, SDOs/NSBs and EU projects same? Aligned? Diverging?**
   The same goal (aligning and establishing the same good practice) does not necessarily mean the same interests. Currently, e.g., most NSBs tend today to limit the "flood of new standards", often conflicting with the, often misinterpreted, understanding the "standards as the way to make the results of the ECSCI/EU projects sustainable".

2. **Policies vs. Standards – similar goals, different ecosystems?**
   The standards may/can support policies and regulations but do not have to and often do not. They are created, evolved and applied in different ways, within different ecosystems. ESCSI projects are, so far, seldom part of any of the two, and should therefore, develop new (ECSCI?) mechanisms.

3. **Do NSBs create standards?**
   It is a common misconception that NSBs create standards; they actually just provide the necessary framework for creating of standards. The "standardization stakeholders" create standards, within the NSB standardization projects, and managed by the NSB TCs (technical committees – e.g., the TC292 for resilience). The NSBs in ECSCI projects are, therefore, to be understood as enablers of standardization contributions of other, non-NSB, project partners.

4. **How to increase the SDOs/NSBs' interest and their participation in the ECSCI/EU project?**
   Understanding the "standardization ecosystem" and the fact that desired involvement in the ECSCI project should focus on collaboration with the TC projects, less than the NSBs, is a necessary precondition. E.g., by using and extending the currently available mechanisms, such as joint work between the ECSCI and the SDO projects. Unfortunately, current formalism makes it more difficult, if not impossible to do so, and that is so on both sides. EU projects, for instance, recognize only institutions as partners (hence, no possibility to include an "informal TC"), and the ISO regulations, for instance, accept liaisons to EU projects only exceptionally.

5. **Different time frames and unsustainability of EU projects – an unsurmountable hurdle?**
   The duration of an EU project is usually 3 years (exceptionally 4). The same, surprisingly, applies also to most standardization (e.g., ISO) projects. And still, the "time problem" is there. Its main reason is the difference in timing: an EU project does not "exist" outside the above time window, the NSB project has usually more than 2 years of preparatory time (for the NWIP – new work item proposal). In addition, the EU projects usually have the "standardization candidates" at the end of the project –too late for the normal standardization process (the reason why the, faster, CWA mechanism is the preferred one used in the ECSCI/EU projects).

Conclusions – Path towards sustainability of/for EU project results

Looking at the above main issues, one can easily conclude that ECSCI can play a pivotal role in their solution – all 5 of them. But for that, one should strengthen ECSCI and make it more operational: the main task for all members of ECSCI.