

CESAER

Scientific & technological infrastructures to help tackle local and global challenges

Position dated 13 October 2022

The leading universities of science and technology united in [CESAER](#) welcome (i) the commitment of the Council of the EU to action 8 ‘Strengthen sustainability, accessibility and resilience of research infrastructures in the European Research Area (ERA)’ of the [ERA Policy Agenda 2022-2024](#), (ii) the focus of the [Czech Presidency](#) on research infrastructures and synergies, and (iii) the [engagement](#) of wider stakeholder communities in infrastructures by the European Strategy Forum for Research Infrastructures ([ESFRI](#)).

We underline the robustness and trustworthiness of the ESFRI [Roadmap](#) and monitoring system: the European user-perspective in the access to infrastructures, the evaluation and assessment methodology and the overall working of ESFRI in our view concerns the leading approach to transnational research infrastructures in the world.

In order to boost the contribution of infrastructures to help tackle local and global challenges, achieve the United Nations Sustainable Development Goals ([UN SDG](#)) and realise the [Green](#) and [Digital](#) transitions, the ESFRI methodology indeed needs profound update and advancement. That is why we herewith promote the concept of Scientific & Technological (S&T) infrastructures as leading universities of science and technology such as our Members use such S&T infrastructures across their entire mission, i.e. for scientific and technological excellence and development, education and training, innovation and services to society (see also our [white paper](#)).

Academics engage with S&T infrastructures for research, education and innovation alike in various roles, i.e. users, designers, governors and evaluators and are therefore key to safeguarding their scientific and technological excellence. Universities engage with infrastructures as co-hosts, partners in ecosystems, co-funders, national nodes and therefore form the backbone of the European S&T infrastructure landscape.

With this position, we contribute to the ongoing debate on how to broaden the user-base of infrastructures and improve access to them to have even more impact when helping to tackle local and global challenges. We advise to (i) adopt a comprehensive and inclusive approach to infrastructures, (ii) boost the transition to open science, and (iii) advance the modes for access to infrastructures and cover integral costs.

(i) Adopt a comprehensive and inclusive approach to infrastructures

The magnitude of the local and global challenges demands (i) the broadening of the ‘impact’ definition from creating jobs and boosting economic growth towards the contribution to economic, ecological and social sustainability, (ii) the diversification of access units and corresponding services, and (iii) reaching out and servicing broader and new user communities.

- We advise to broaden the current socio-political narrative around infrastructures from a sector-driven to an objective-driven approach and broaden the impact dimension in methodologies, including mapping of the outcomes of infrastructures to the UN SDG.

- We advise to adopt challenge-based approaches early on involving a broader range of user communities, target audiences and partners in the design, development and implementation of infrastructures and the definition of access units and services.
- We underline the need to improve partnerships and cooperation patterns between different players in infrastructure ecosystems to improve and speed up value chains aimed at creating natural, social, inspirational, scientific, technological, ecological and economic value.
- We emphasise the great importance of reaching out to policymakers at all levels, funders and citizens through testbeds, living labs, demonstration sites and deep demonstration to further embed and increase societal relevance of S&T infrastructures.
- We call upon regional and national governments and ESFRI to better align their strategic prioritisation of, and commitments to, infrastructures in the governance structures with the strategic prioritisation and commitment of university leadership, and to acknowledge better the roles of universities as national nodes in European Research Infrastructures Consortia and to include them in decision-making.
- We reiterate our call to seek, associate and cherish close science and technology allies and underline that this is particularly true in the field of pan-European infrastructures. We urge the EU institutions to engage third countries which share our values and sense of urgency of local and global challenges, even if they are not associated with Horizon Europe. We call upon ESFRI to continue engaging with Switzerland and the United Kingdom in particular.

(ii) Boost the transition to open science

In the light of the exponential growth of data and what we can do with it, we underline the intrinsic link between action 1 and action 8 in the [ERA Policy Agenda 2022-2024](#) and the critical role of S&T infrastructures to help boost the transition to open science as service providers. We point out that while openness is often needed for science to truly help tackle global challenges such as climate change, technology may be subject to considerations around knowledge safety and security, including foreign government and business interference. Universities therefore deploy specialised units to provide scientists with (i) guidance and recommendations on how to deal with related legal regulations, and (ii) support services with regards to Research Data Management (RDM). It is equally important to monitor the RDM system itself: cost models must be transparent and sustainable and go hand-in-hand with open science and openness of infrastructures. Openness of infrastructures and preventing vendor lock-in are indeed enablers for reusability and innovation.

- We point out that global cooperation in S&T infrastructures is crucial to safeguard a sustainable and humane future for all, and may function as a key lever in science diplomacy. We therefore call upon the EU institutions to put S&T infrastructure cooperation at the heart of their Global Approach to Research & Innovation.
- We call upon ESFRI and its infrastructures to engage more and better with the [EOSC Association](#), and underline the need to involve the EOSC Association in the ESFRI Stakeholder Forum.
- As the transition to open science highly depends on the reform of scientific evaluation and reward structures, researchers who have made their research data open, and enabled and developed subsequent (re-)use outside or inside of academia should be rewarded accordingly.

- We call upon national and European legislators to provide clarity and design legal frameworks in such a way that researchers know what they are allowed to do and what they are not allowed to do.

(iii) Advance modes for access, optimise models and cover integral costs

We advise to (i) advance the modes for access to S&T infrastructures, (ii) optimise the governance and operation models of S&T infrastructure, and (iii) cover the integral costs.

- We point to the need and our commitment to contribute to advancing the modes for access to S&T infrastructures in (i) the strategic analysis of the S&T infrastructure landscape, (ii) the update of the ESFRI Roadmap and implementation of the infrastructures performance monitoring framework, (iii) the revision of the [European Charter for Access to Research Infrastructures](#), (iv) the implementation of the recommendation from the report on the ERIC Framework, and (v) the better integration of e-infrastructures, including through EOSC.
- When differentiating access units and related services to broader and new user communities, we point out the need to optimise the governance and operation models of S&T infrastructures also with a view on regulatory frameworks such as state aid.
- We urge funders for infrastructures to cover the integral costs (i) for access to infrastructures and (ii) services related to RDM.
- We call upon the European Commission to design the next generation of EU funding instruments - before presenting its proposals to Council and Parliament - in a way that allows for synergies in the funding of scientific and technological infrastructures throughout their entire lifecycle.
- We invite the EU institutions to come forward with concrete proposals on how to substantially increase the EU budget for the contribution to critical parts of pan-European infrastructures (think of standardisation, [key technologies](#) and cross-border infrastructure) to mitigate risks to infrastructures and bridge the gaps of availability from national funds.
- We urge the European Commission to better involve our sector and other stakeholder and user communities in the definition of needs feeding into the development of related work programmes under Horizon Europe.

For more information, please [contact](#) our Deputy Secretary General Mattias Björnmalm.

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