



POSITION PAPER, MAY 2024

European policy for research and technology infrastructures

In today's rapidly evolving technological landscape, where global advancements in green and digital technologies are transforming industries at an unprecedented pace, the importance of state-of-the-art research infrastructures (RIs) and technology infrastructures (TIs) in Europe is decisive.

This position paper adds to the [RISE position paper on FP10](#) (feb 2024) providing further guidance for RIs and TIs in the future framework programme for research and innovation (FP10) and the parallel discussions on the policy development for a European coordination mechanism for TIs.

Supporting our argumentations in this position paper is the recently conducted mapping of national and international technology infrastructures ([project: INIT 2021-2022](#)) supported by the Swedish innovation agency (Vinnova), which included a survey with detailed data from 143 Swedish technology infrastructures and



"Integrating a dedicated funding line for technology infrastructures in FP10, and establishing a European coordination mechanism for technology infrastructures, will facilitate the process of introducing cutting-edge technologies on the European market."

Monica Ringvik, CTO, RISE

in-depth interviews with 48 tech infrastructure representatives, customers, owners, financiers, universities, RTOs, communities, regions, and agencies. The INIT-mapping clearly illustrated the need and ambition for increased internationalization, whereby the project continued with the establishment of an international support office ([TIRA MISO – Technology Infrastructure Management and International Support Office](#)) by RISE in collaboration with Business Sweden, supported by Vinnova.

Definition and policy affiliation of research infrastructures and technology infrastructures

“Research infrastructures” (RI) and “technology infrastructures” (TI) are two conceptual terms with different acknowledgment in the EU and in the Member States. The concept of TI is at an early stage of recognition the European research community whereas RI is well established.

Despite the many similarities between the concepts, it is central to acknowledge the significant distinction in TIs connection with industrial customers and their needs upon establishment. This perspective contrasts with RIs which primarily serve research needs and are not typically based on business models for industrial utilization. Capturing this fundamental difference is essential when adopting public policy and programs for RIs and TIs. Hence, RISE advocates for the policy development of TIs to align with both the EU’s research policy and its industrial policy evolution. We believe that integrating support for TIs in FP10, as well as establishing an EU coordination mechanism for TI, also serve as a solid means to align the EU’s industrial policy goals with its research policy activities.

Integrating support for Technology Infrastructures in FP10

To ensure that end-users’ perspectives are considered in the programming and implementation of support for TIs, there needs to be separate funding lines for technology infrastructures in FP10 (as opposed to integrating support for existing RI structures in pillar 1). Thereby, industrial actors’ access and need for a developed TI landscape in

RESEARCH INFRASTRUCTURES

Research infrastructures means facilities that provide resources for the research communities to conduct research and foster innovation in their fields, including the associated human resources, major equipment or sets of instruments; knowledge-related facilities such as collections, archives or scientific data infrastructures; computing systems, communication networks and any other infrastructure of a unique nature and open to external users, essential to achieve excellence in R&I; they may, where relevant, be used beyond research, for example for education or public services and they may be single cited, virtual or distributed (Horizon Europe regulation, 2021)

TECHNOLOGY INFRASTRUCTURES

Technology infrastructures are facilities, equipment, capabilities, and support services required to develop, test and upscale technology to advance from validation in a laboratory up to higher TRLs prior to competitive market entry. They can have public, semi-public, or private status. Their users are mainly industrial players, including SMEs, which seek support to develop and integrate innovative technologies towards commercialization of new products, processes, and services, whilst ensuring feasibility and regulatory compliance” (EC staff working document Technology Infrastructures, 2019)

Europe should outline the guiding principles. Thus, if the current pillar structure is retained, support for TIs should be placed in pillar 2 with its focus on industrial competitiveness.

A dedicated TI funding line in FP10 should be connected to the European partnerships and the RD&I needs as road mapped in the European partnerships’

strategic agenda. The co-programmed partnerships in Horizon Europe play a crucial role in fostering collaboration, leveraging resources, and accelerating progress towards achieving the EU's research and innovation objectives. Connecting funding lines with these partnerships would enable foreseen sectorial TI mappings, TI foresight analyses and TI networks with existing industrial RD&I communities and expertise. We encourage the EC to launch pilots in FP9 for additional sectorial TI mappings and analyses of industrial needs, with the objective of identifying gaps and proposing potential upgrades of the European TI landscape within relevant sectors.

If the current pillar structure and clusters are maintained in FP10, each cluster in pillar 2 could include calls for activities promoting industrial access to TIs and the establishment of European TI networks (both networks between TI host organizations and end-users, but also networks between TI host organizations). Another aspect to consider is the European TI landscape's ability to attract global talents and expertise. Europe's high-tech industries operate in a global market and there is arguably a need for international networks and collaboration with associated FP countries.

An argument put forward in the ongoing discussions about RIs and TIs in FP10 is that both types of infrastructures should be integrated as cross-cutting components. RISE believes this proposal contains important points regarding synergies and the potential to earmark RI/TI activities across the pillars. However, current RI support (WP pillar 1) has been successful and should continue to efficiently address gaps for RIs in research communities. Thus, it may be unnecessarily complex to restructure the support lines for RIs, and adding support for TIs, as cross-cutting components when both types require separate programming procedures (for ensuring TIs connectivity with industrial RD&I needs and RIs activities connectivity to research communities).

Lastly, it is evident that the European TI landscape is much less integrated than the RI landscape. Therefore, a funding line for TIs in FP10 is one component that would contribute to the development of



“Future EU policies and support for technology infrastructures would also serve to bridge the gap between the EU's research and industrial policy, a key component for Europe's ability to take lead in the technological race.”

Adam Andersson, Head of EU affairs, RISE

a connected European TI landscape, which forms the basis for advocating the establishment of a European coordination mechanism for TIs;

Development of a European coordination mechanism for TIs

RISE posits that sustainable TIs are those with strong commitment from industrial stakeholders, based on business models that aim to ensure revenue covers operational costs. However, achieving this financial sustainability for TIs presents a formidable challenge. Escalating initial investment costs have become a significant obstacle, with neither host organizations, industries, nor public funds adequately capable to cover the investments needed. Thus, RISE calls for the creation of a European TI forum (European coordination mechanism for TIs), recognizing the pressing need for the EU to improve its agility in technological advancement to stay competitive globally. This necessity extends to supporting Europe's technological industries and ensuring the region remains attractive for pre-commercial applications. Currently, a lack of European

coordination and investment among member states persists, alongside a shortage of networks connecting end-users with TI host organizations. Bridging these gaps at the European level is essential to forge sustainable TIs.

RISE stresses the following points to be considered in the development of a governance structure for TIs at the European level;

- The TI governance structure must be separated from RI governance (ESFRI) for ensuring alignment with the EU's industrial policy and competitiveness agenda. However, ESFRI and support for RIs could serve as blueprint for a European TI forum (foster cooperation among EU member states, coordinate funding, and develop strategic roadmaps for investments).
- For the goal of connecting and strengthening the European TI landscape, we argue for setting up one TI coordination mechanism, instead of several thematic mechanisms. A single European TI forum would be better equipped to deal with cross-sectoral deployments which arguably will play a significant role for maintaining state-of-the-art TIs across Europe.
- Considering that TIs are linked to both research and industrial policies, the forum should convene representatives from industrial stakeholders and TI hosting organizations, in addition to Member States' Ministries of Industry/Enterprise (or equivalent) and Ministries of Education. Representatives from different MS Ministries would facilitate the alignment of national industry- and technology strategies with national research policy
- One objective of the TI mechanism should be to create a dynamic forum advising RDI chapters in the EU's industrial policy, notably connecting proposals for TI investments with industrial acts and/or industry alliances.

- The sectoral approach (e.g., sectoral mappings and roadmaps) constitutes important guidance in joint investment prioritization. However, sectoral mappings should not solely outline the coordinated approaches towards investments. To maintain alignment with end-users needs in highly transformative sectors, it is also important to consider the involvement of RTOs and other TI-host organizations foresight models of emerging technologies and industrial deployment.

Conclusion

Ongoing discussions about developing policies and programs for RIs and TIs highlight the importance of planning and implementing effective European coordination in this area. As conversations continue within influential groups like the EC expert group, ERA, and among Member States and stakeholders regarding FP10, RISE aims to provide valuable insights to offer further guidance.

However, it's important to acknowledge that there are still many unanswered questions that need to be addressed to ensure effective planning and implementation of European coordination for TIs. With ownership of over 100 test and demonstration environments classified as TIs, RISE is ready to actively engage in ongoing discussions and share our experiences in creating sustainable TIs. Through collaboration and sharing knowledge, we can work together to shape a strong and connected TI landscape that drives European innovation and competitiveness.

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