Council of the European Union

Brussels, 28 May 2025
(OR. en)

9513/25

ERAC 19
RECH 250

NOTE

From:	General Secretariat of the Council
To:	Delegations
Subject:	European Research Area and Innovation Committee (ERAC) plenary meeting, 12-13 June 2025, Gdansk ERAC Opinion on Research Infrastructures (RIs) and Technology Infrastructures (TIs) in Europe

Delegations will find in annex the draft ERAC Opinion on Research Infrastructures and Technology Infrastructures in Europe (with an annex), in view of its adoption by the ERAC plenary on 12-13 June in Gdansk.

ERAC Opinion on Research Infrastructures (RIs) and Technology Infrastructures (TIs) in Europe

Draft submitted for adoption by the ERAC plenary on 12-13 June 2025

Introduction

ERAC requested that the group of Rapporteurs frame the Opinion on RIs and TIs in Europe around two main questions reflected in document 6310/25 (see more information on this below).

With the support of the Commission, the group of Rapporteurs (FR, IT, ES, CZ) developed this frame with a questionnaire (doc. 6310/25 Annexe 1) to the ERAC members and associated countries. The Rapporteurs informed ERAC of their plans to reach an Opinion at the ERAC meeting on 14 February 2025. The rapporteurs also included relevant bibliography on RIs and TIs (doc. 6310/25 Annexe 2).

The editors sent this consultation to ERAC delegations in the third week of February 2025. Replies from delegations to the questionnaire were obtained until the end of March. The editors maintained a series of meetings to work on analysing the responses; this allowed the Rapporteurs to have a final draft by the end of April which was further revised after the comments received by some delegations in May. The ERAC Steering Board finally assessed the document in view of its approval in the June 2025 ERAC meeting.

The questions were separated into two sections and focused on politically relevant challenges and topics that need a clear orientation from the Member States to elaborate the ERAC Opinion, and in view of the next Commission´s Strategy on Research and Technology Infrastructures.

The Opinion includes short summaries of replies to the questionnaire and a more comprehensive analysis can be found in the Annexe.

Proposal to the two questions included in the ERAC´s mandate from the group of Rapporteurs (based on the responses to the questionnaire):

1. ***How to strengthen the ecosystem of cutting-edge facilities and services of Research Infrastructures (RIs) and Technology Infrastructures (TIs) to optimise their role for Scientific, Technological and Innovation excellence and competitiveness, including issues like accessibility, skills development, critical technologies and digitalisation?***

ERAC recalls that the European Union hosts excellent, innovative research infrastructures—single sited facilities as well as distributed research infrastructures, complemented by networks of national facilities—which are highly valuable and specific assets for the European research and innovation landscape and put Europe in a frontrunner position for further development.

To further enhance this advantage of our R&I ecosystem compared to other regions of the globe, ERAC proposes to optimise the role of RIs and TIs in fostering excellence and supporting competitiveness and that **the Commission and Member States, in close dialogue with Associated Countries, need to advance the political discussion and reinforce the sustainability, the complementarity, accessibility, and strategic coordination of the entire infrastructure ecosystem**. The complementarity between RIs and TIs, a continuum from fundamental research to industrial R&D, is a key consideration towards a common strategy underlined several times by the Council[1][2], and has been a driving element in this Opinion.

ERAC proposes a series of **strategic recommendations** that would contribute to creating a real European infrastructure ecosystem, strengthening the competitiveness of the Union:

A **coordinated EU-wide analysis is needed of RIs and TIs capacities and an inventory of national/regional RIs and TIs mappings**[3] in strategic technologies and industrial sectors, based on the political priorities set by the European Union. This should be undertaken to have a holistic view of the infrastructures of European relevance. Among several aims, it should help clarify their roles across Technology Readiness Levels (TRLs) and the R&I value chain and support a continuum from fundamental research to industrial deployment. The mapping of these infrastructures should

---

[1] 15429/22 Council conclusions Research Infrastructures.

[2] 10182/24 Council conclusions Strengthening knowledge valorisation as a tool for a resilient and competitive industry and for strategic autonomy in an open economy in Europe

[3] The mapping exercise should minimise administrative burden and align with each country's capacity to assess its infrastructures.

also **identify gaps and overlaps**, enabling the alignment of national and EU investments and considering the users´ needs and the societal priorities. TIs' mapping, and to some extent the RIs' mapping, is essential to reach a strategic alignment allowing successful private-public partnership for TIs with agile funding to respond to changing technological and users´ needs.

RIs often operate at low TRLs and TIs at high TRLs, however this is not in one direction, further to *research push* where TIs develop on research outputs of RIs, there is also a *technology pull* where RIs provide deeper scientific understanding in areas identified as industrially relevant by TIs. While the activities of RIs and TIs may overlap, their intended uses differ: RIs are primarily intended for curiosity-driven, fundamental and pre-competitive research and development, whereas their activities for competitive development are allowed and encouraged. In contrast, TIs are understood to be mainly set up to provide environments for applied research and development, technology scale-up, testing and validation.

A visible and robust system of transnational access needs to be developed. The European Commission should explore, together with MS, in close dialogue with Associated Countries, the implementation of sustainable, long-term funding mechanisms for transnational access (TNA) tailored to the distinct missions of RIs and TIs. For TIs, TNA should rely on demand-driven access models prioritising industry co-funding and public-private partnerships, complemented with vouchers and subsidised services for SMEs and Start-ups. Improving visibility and use across the EU also relies on simplification and harmonised access policies.

Developing skills and training. As recognised in the European Skills Agenda of the Commission, there is a clear need to strengthen European talents. Joint training schemes, staff mobility, exchange, and a staff retaining scheme should be fostered to build the skills base needed to fully exploit advanced facilities, which are key to the Union's strategic autonomy.

ERAC considers that when it comes to TIs, it is critical to identify **the needs of the industrial users and prioritise supporting critical technologies** based on the political priorities set by the European Union. MS have underlined that policy tools such as joint undertakings could serve as a model for further initiatives supporting critical technologies' development and industrial scaling. Given this context, and in view of the preparation of the next MFF, as well as the focus on strategic technologies, Research Infrastructures and Technology Infrastructures should be fully integrated into broader industrial strategies. This integration should be based on clear EU-added value and demonstrated market failures in the provision of the necessary services. A co-investment framework

involving the private sector, Member States (including regions), and the EU could support this approach.

While the standalone Framework Programme remains the cornerstone for generating excellent knowledge and innovation across the Union, closer alignment between research, development, and innovation (RDI) and industrial policy will ensure that RIs and TIs contribute directly to key European objectives, including technological sovereignty and sustainable economic growth.

One of the key elements to take advantage of top-level infrastructures in the Union would be **increasing the digitalisation and data sharing** of the results obtained by the users of the infrastructures. A common and integrated digital platform for data management and exchange, such as the European Open Science Cloud, could accelerate the valorisation and industrial application of research results and facilitate synergies between RIs and TIs, and should take into account the different needs of researchers and industry users regarding FAIR (Findable, Accessible, Interoperable, and Reusable) data and intellectual property rights. This will support reproducibility, efficiency, and innovation across sectors, while ensuring data interoperability and secure industrial, commercial use and societal uptake.

2. ***How to ensure a strategic governance that improves the prioritisation and pooling of investments in RIs and TIs?***

ERAC and the Council have provided political orientations and analyses in political debates at the ministerial and Director General levels over the last three years. The Council agreed that RIs and TIs are a part of the same infrastructure ecosystem, and improving the coordination of this ecosystem at the EU, national and regional levels will increase our competitiveness.

One of the challenges for the future will require an insightful discussion among the Commission and Member States, in close dialogue with AC, to foster the coordination and explore a possible shared governance[4] if there is significant progress in the integration of infrastructures at EU level

[4] In this ERAC opinion, we have clearly separated the use of the **coordination and governance** concepts to facilitate the message of the Rapporteurs.
Coordination is the process of joint efforts by the Member States (MS) and the EU experts to identify common priorities through strategies, roadmaps, and other planning instruments. It involves aligning efforts, avoiding duplication, and fostering synergies across national and European initiatives. As an example, the mission of ESFRI is to support a strategy-led approach to policy-making on research infrastructures in Europe, in alignment with broader policy goals, and to facilitate multilateral initiatives leading to the better use and development of research infrastructures, at EU and international level.

(funding from private and EU sources, regulation, etc). **This ERAC opinion highlights the key elements that should drive the debate forward.**

This **Opinion proposes specific directions for developing a lean umbrella coordination mechanism on RIs and TIs** that would be efficient in terms of suggesting joint priorities and funding opportunities for the coherent European infrastructure ecosystem. While recommendations are clear, the MS and the Commission need an insightful approach to ensure a solid political engagement, address the need for reliable national and EU funding, and explore an ambitious roadmap that could lead to a shared governance of the infrastructure ecosystem. This possible mechanism for coordination and governance, especially for TIs, must be adapted to industrial needs and industry mechanisms and regulations.

The European infrastructure ecosystem needs to be coordinated in line with its unique characteristics, taking into account the industrial and R&I policy. Thus, strategic planning of European infrastructures should also be aligned with users' needs, sectoral initiatives, EU priorities, and national and regional needs. Currently, RIs support scientific activities, technology development, and implementation, and take advantage of a coordinating governance structure at the EU level (i.e., ESFRI) with a relevant scope and competences. However, fragmented interests at the national level occasionally slow down cooperation among Member States.

On the other hand, in general terms, TIs, which are essential for industrial innovation and regional economic development, lack such coordination mechanisms at the national or European level. While ESFRI provides a valuable framework for RI coordination based on the experience and knowledge of the MS representatives participating in ESFRI and the maturity of the RI ecosystems at the national level, no equivalent exists for TIs.

A common/shared RIs and TIs governance would mean a significant step further and require a dedicated and insightful discussion between the Commission and the Member States in close dialogue with AC. ERAC underlines the need for a clear, long-term EU strategy to overcome

---

. **Governance,** on the other hand, encompasses putting in place all means, including funding decisionsand structured advisory mechanisms established through transparent procedures, in order to achieve the fixed goals. It includes the responsibilities for, accountability and operating principles, established to set strategic directions, ensure the supervision and long-term sustainability.

fragmentation, better align national and EU funding priorities, and guide investments according to impact and excellence that could lead to shared governance. While RIs require stable, structural funding for frontier and excellent research, TIs need a challenge-driven approach focused on industrial competitiveness and deployment of strategic technologies, and expanding access to existing TIs beyond local ecosystems. This European strategy should support a holistic view of a coherent ecosystem of pan-European RIs and TIs while respecting their distinct missions.

ERAC considers that a dedicated governance framework for TIs is essential. Still, a staged approach could be most appropriate given the early stage of development of a European policy on TIs and the lack of specific national strategies in many countries. The future structure should consider national practices, reflecting the industrial and applied nature of TIs while ensuring strong synergies with RIs. This could imply creating a light coordination structure for TIs in the short term, and a possible way of complementing with ESFRI in time for the next MFF. Ultimately, strategic recommendations should be provided for the entire research and technology infrastructure ecosystem, including RIs, TIs, data and digital.

Different funding approaches are needed for RIs and TIs, and a strategic EU framework could help synchronise policies and streamline co-investment mechanisms. The preparatory work done for this opinion has evidenced misalignments between EU and national priorities, fragmented funding mechanisms, and inconsistent policies that hamper investment pooling and long-term planning. This is especially important for TIs, which currently lack consistent national strategies and face governance fragmentation at the national level. RIs and TIs have different proximities to the market, missions and user profiles; EU and national funding needs to be tailored accordingly.

RIs, with an excellence-based mission and able to close the innovation gap, require long-term, structural and sustainable public funding and dedicated support for transnational access. TIs, with a more applied and industrial focus, benefit from flexible funding that supports scale-up and innovation, where public funding plays a trigger effect. TIs should involve strong engagement from industry and private sector stakeholders, fostering joint investment between the private sector, Member States, and the EU and should therefore be aligned with sector policies**.** In the future, any relevant EU funding instruments must reflect these differences to enable efficient use of resources and impactful investment.

MS have identified legal, regulatory, and bureaucratic barriers, such as accounting separation of economic and non-economic activities and fragmented funding streams, that

impede cross-border cooperation and access to infrastructures. Any strategic governance should work to harmonise these aspects, encourage joint investments, and promote transnational access schemes that support excellence and close the innovation gap.

Particularly, the GBER (Reg. 651/2014) does not adequately reflect the distinct missions and use cases of RIs and TIs. Member States understand that any modification could impact the functioning of the internal market. However, there is consensus that TIs are not adequately reflected in current regulations, leading to legal uncertainty. ERAC considers that flexibility for the economic activity levels is needed for both types of infrastructures. Nevertheless, the lack of precise definition and the ambiguous status of TIs in the EU legislation, including State aid, creates legal uncertainty and discourages public and private investment. Revising the GBER should address this ambiguity between RIs and TIs and provide clear guidance, which is essential for enabling strategic investments from the public and private sectors at the national level. In view of the next MFF and the challenges of the competitiveness of the Union and its strategic autonomy, the State aid framework needs to reflect the reality of the research and technology infrastructure ecosystem. ERAC calls on the Commission to reflect on the most suitable way to achieve this, working with the Member States' experts on research and technology infrastructure policy.

RIs and TIs ecosystem

Question 1: Where do you see the biggest potential for complementarity between RIs and TIs? How can these synergies be best supported at EU and national levels?

The most important complementarity between research infrastructures (RIs) and technology infrastructures (TIs) is that they typically operate at different ends of a common 'pipeline' which starts from the low technology readiness levels (TRL) of fundamental research and finishes at the high TRL of industrial R&D. A country highlights that this is not necessarily one-directional: further to *research push* where TIs develop on research outputs of RIs, there is also a *technology pull* where RIs provide deeper scientific understanding in areas identified as industrially relevant by TIs.

The most popular measure is extensive mapping by EU and national governments, on which the 'ecosystem' approach of RIs and TIs and strategic alignment efforts should be based on. Two countries mention their own national mapping exercises as examples of good practices, while one country calls for the involvement of ESFRI, including for TIs. One country warns to not duplicate but rather build on the work of the RITIFI project.

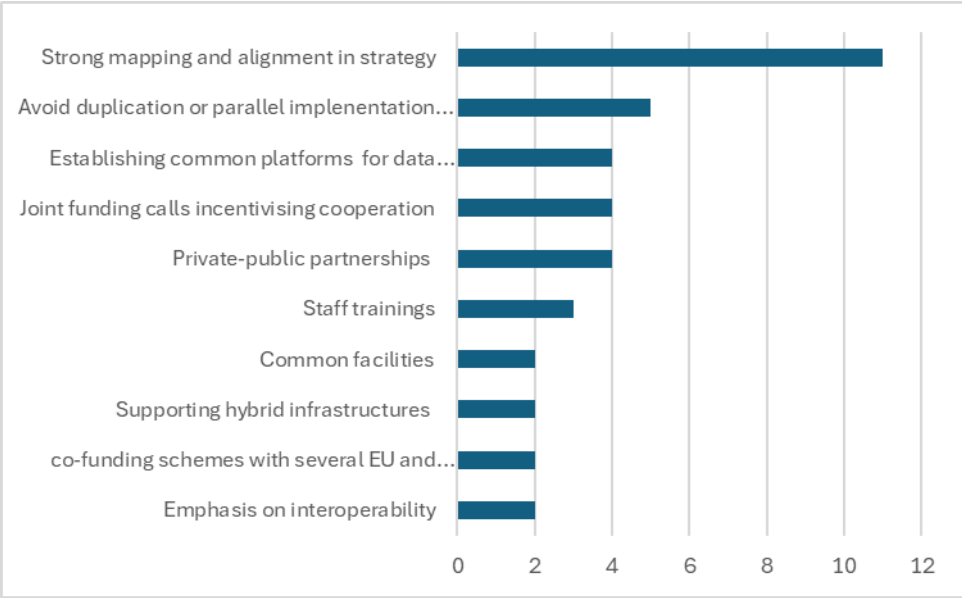
Several countries are in favour of a private-public partnership for TIs with agile funding to respond to changing technological needs, while providing access to SMEs. For a country, TIs should emphasise business expertise, which would be facilitated by such a partnership. For another country, the private sector should also be involved in the investment phases for TIs, which could act as a 'gateway' to attract private funding for the whole RI&TI ecosystem. Two countries would consider co-funding schemes bringing together several EU funding streams as well as national funds.

Some countries highlight that certain infrastructures could be categorised as both an RI and a TI: a country refers to infrastructures acting at intermediate TRLs (3-6), while other countries refer to specific areas such as marine engineering, digital twins, advanced materials, semiconductors, clean energy and life sciences. Several countries argue that joint funding calls in these areas with RIs and TIs in the same consortia would incentivise cooperation. Interoperability between RIs and TIs is important notably in these areas.

Staff exchanges and trainings are a key area of cooperation as they familiarise researchers and management with both fundamental and close-to-market, applied research. Another area of RI and TI cooperation is data management and valorisation: establishing common platforms for data exchange would accelerate industrial applications of research outcomes.

Despite these intersects, the respondents strongly call for preserved funding for RIs and that the two types of infrastructures should not have to compete against each other, also noting that the stakeholders for TIs and RIs are generally different, and that there should be no possibility of 'gaming' the definition for funding purpose. The ecosystem approach should give more flexibility to the user through collaborative service models. One country considers that an EU approach to TIs is premature.

Overall, the rationalisation of costs and the consolidation of the landscape remains a priority for several countries, including TIs and RIs sharing operational support and organisational management.



Question 2: What should be the actions of RI and TI to decrease the innovation divide between regions and MS?

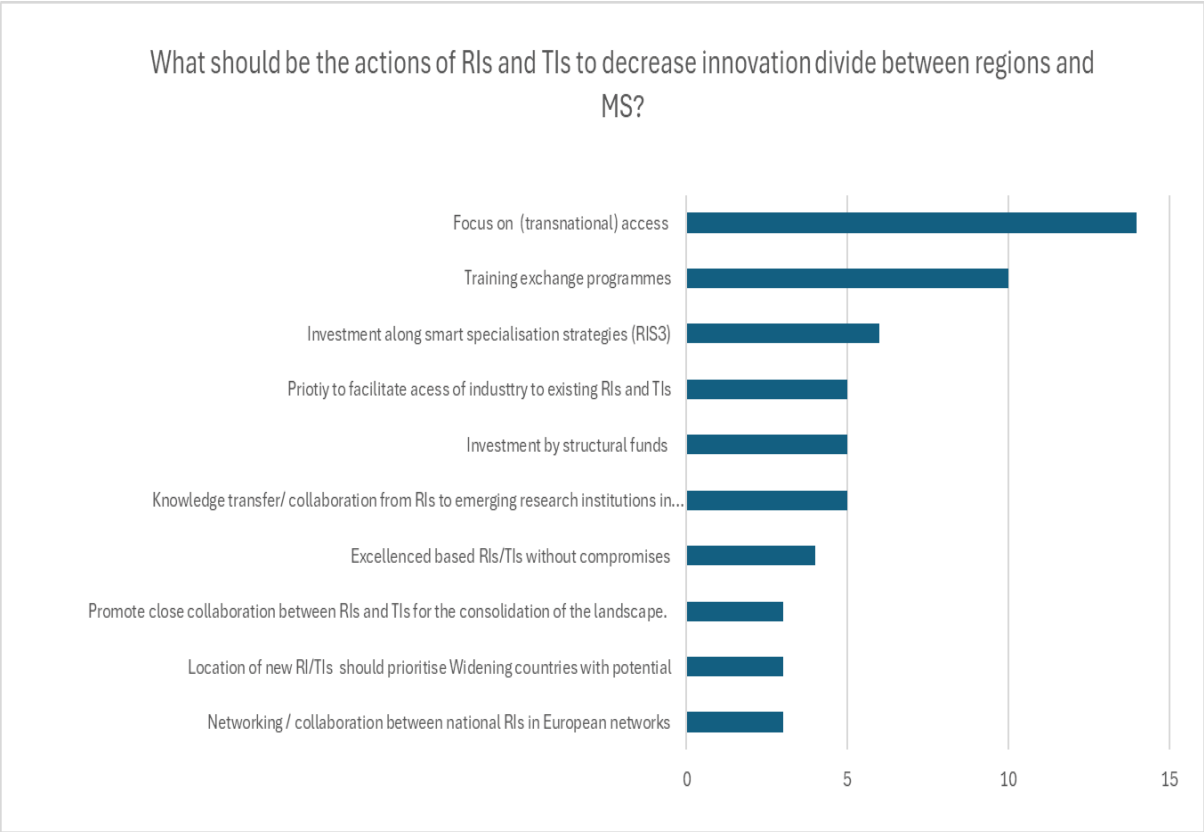
The most effective measures to decrease the innovation divide within Europe are related to enabling and reinforcing the mobility of talent notably through transnational access to research infrastructures (RIs). Several countries argued that specific capacity should be reserved for researchers from 'widening' countries. Several countries also mentioned the importance of remote access to bridge geographical divides and, for a country, of raising awareness for these opportunities. More extensive training and exchange programmes are also feature prominently. Several countries also mention access of SMEs.

Several countries consider implementing investment along smart specialisation strategies for regions, including with support from structural/cohesion funds. One country argues that these funds should also support operational costs.

A country also refers to extensive networking between RIs including 'twinning' of RIs in 'widening' regions with more established institutions. For several countries, close cooperation between RIs and TIs is also important to facilitate the consolidation of the landscape.

More direct measures also received support: 'widening' regions with potential should be prioritised for the location of new RIs and TIs, especially in the context of distributed RIs, and the operation of central nodes could be supported by EU funds.

Finally, four countries argue that there should be no compromises in the 'excellence' criterion regarding RIs and TIs, so measures related to 'Widening' should be implemented outside the R&I programme.



Question 3. In your country:

a. ***What are the particular characteristics of the RIs and TIs to differentiate them from each other in your country? (i.e. level of economic activities, dedicated regulation, etc.)***

b. ***Do you have a procedure for obtaining recognition as a TI?***

c. ***Is there a national policy for TIs in your country, specific plans or recent experiences?***

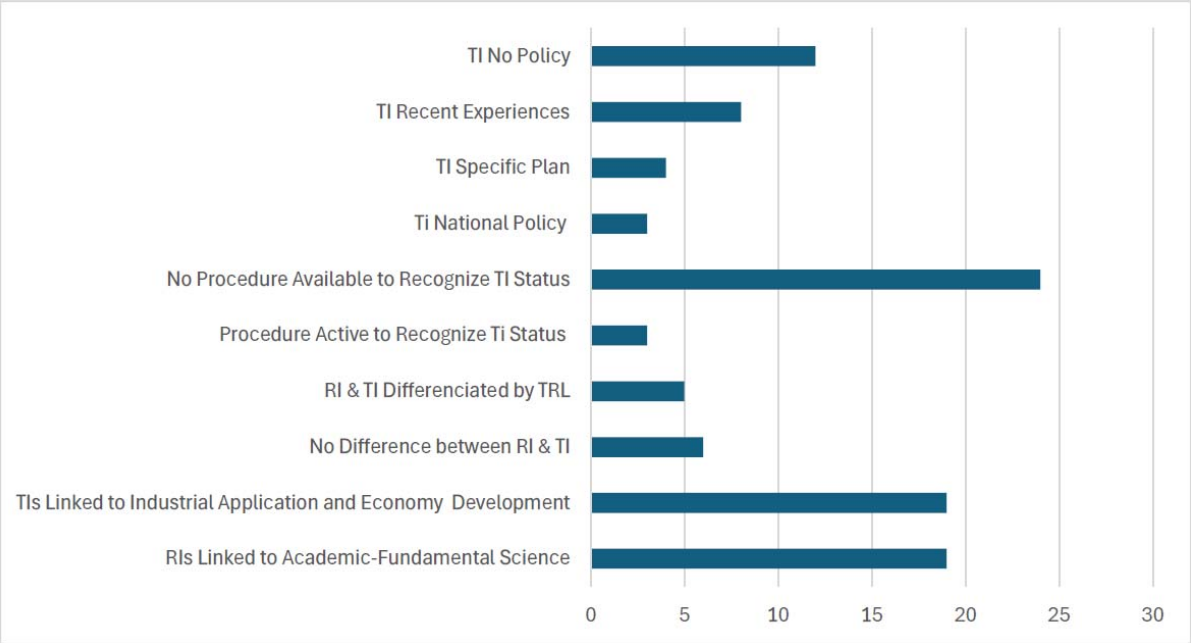
From general point of view the main characteristics that differentiate RI and TI are related to TRL where RIs operate at lower TRLs as they are focused on academic research and fundamental science, while TIs operate at higher TRLs, supporting technology development, validation, and industrial applications.

Below is reported a more detailed analysis of the answers received on the three sub questions and a graph that summarizes the main answers in statistical detail.

a. The differentiation between Research Infrastructures (RIs) and Technology Infrastructures (TIs) is often based on their intended use and user community. RIs are generally focused on academic and fundamental research, often linked to universities and research centers. They primarily serve the scientific community and are involved in knowledge creation and scientific discovery. Conversely, TIs focus on the valorization, circulation, and transfer of knowledge and technology, aiming to generate economic and social value. They are often connected to private companies or public-private partnerships and serve industry and innovation ecosystems.

b. The presence of a procedure for obtaining recognition as a TI varies. There are active procedure to recognize TI status in three countries but in many cases, there is no formal procedure, and recognition is more ad hoc or based on specific criteria or frameworks. Often, the decision and funding for TIs are done on a case-by-case basis, sometimes involving dialogue between the state, promoters, and potential user communities.

c. National policies for TIs also vary. In many instances, there is no dedicated national policy, but elements related to TIs may be included in broader research and innovation strategies. Some countries have developed roadmaps or strategic plans that mention TIs, and they may be supported through various policy frameworks and programs at national or regional levels. Recent experiences often include initiatives to foster collaboration between RIs and TIs and support their development as a strategic part of regional innovation ecosystems.



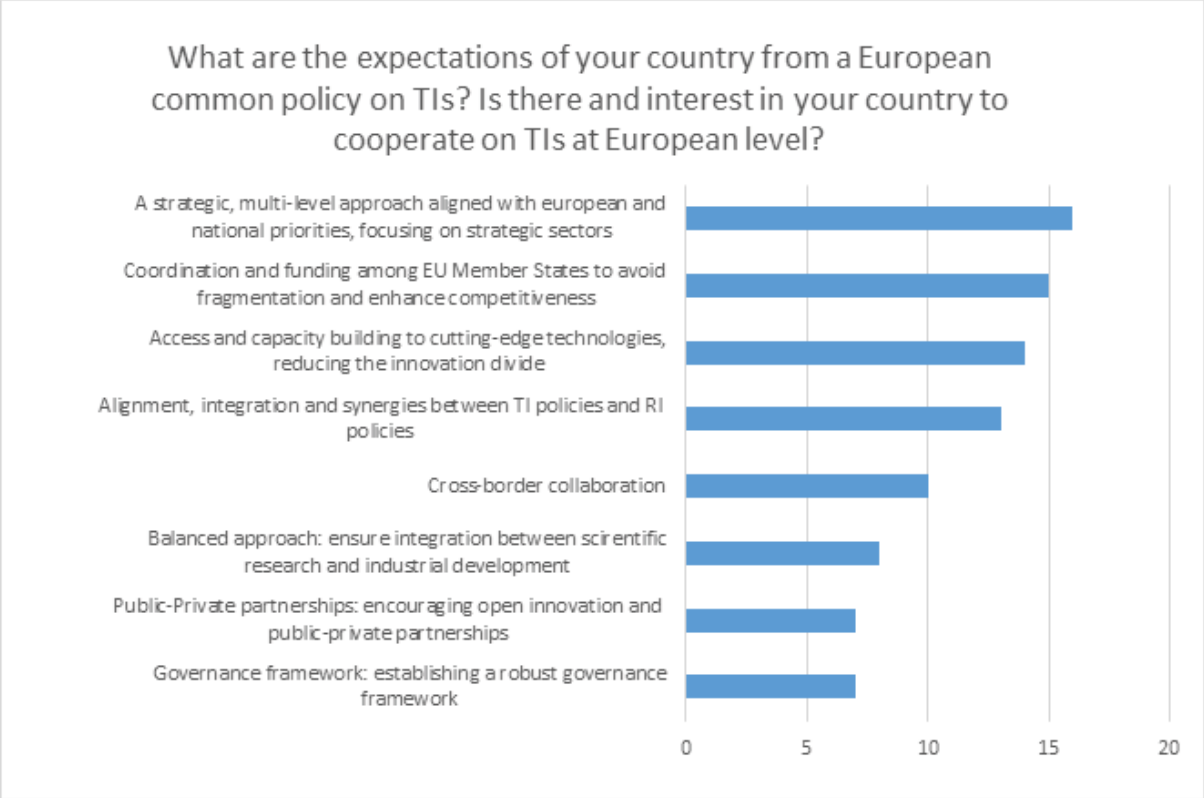
Question 4:

a). What are the expectations of your country from a European common policy on TIs?
b). Is there an interest for your country to cooperate on TIs at European level, if this is the case, according to which approach?

There is a clear interest for cooperation at European level on TIs and for developing the holistic approach concerning TIs and RIs. An inventory of the national mappings of the TIs landscape in EU strategic areas should be a priority in order to prevent the duplication and to provide the consolidation of the TIs ecosystem, screening for potential overlaps with other types of infrastructures, or blind spots. Strategic planning and priority setting as well as long-term strategy is expected from the European common strategy on TIs, which would identify the TIs with highest impact on European applied research and innovations where pooling of resources is desired in order to avoid fragmentation and to identify gaps or needs from key industry areas for the prioritizing of Tis investments. Facilitating the sharing of resources and knowledge across borders will maximize the potential of European TIs, while ensuring regional cohesion will support the innovation capacity of users from all over the EU. Recognizing that the transition between RIs and TIs is very fluid, a holistic approach is privileged by the countries, ensuring a balance that integrates both scientific research and industrial development and providing a smooth transition from research to application.

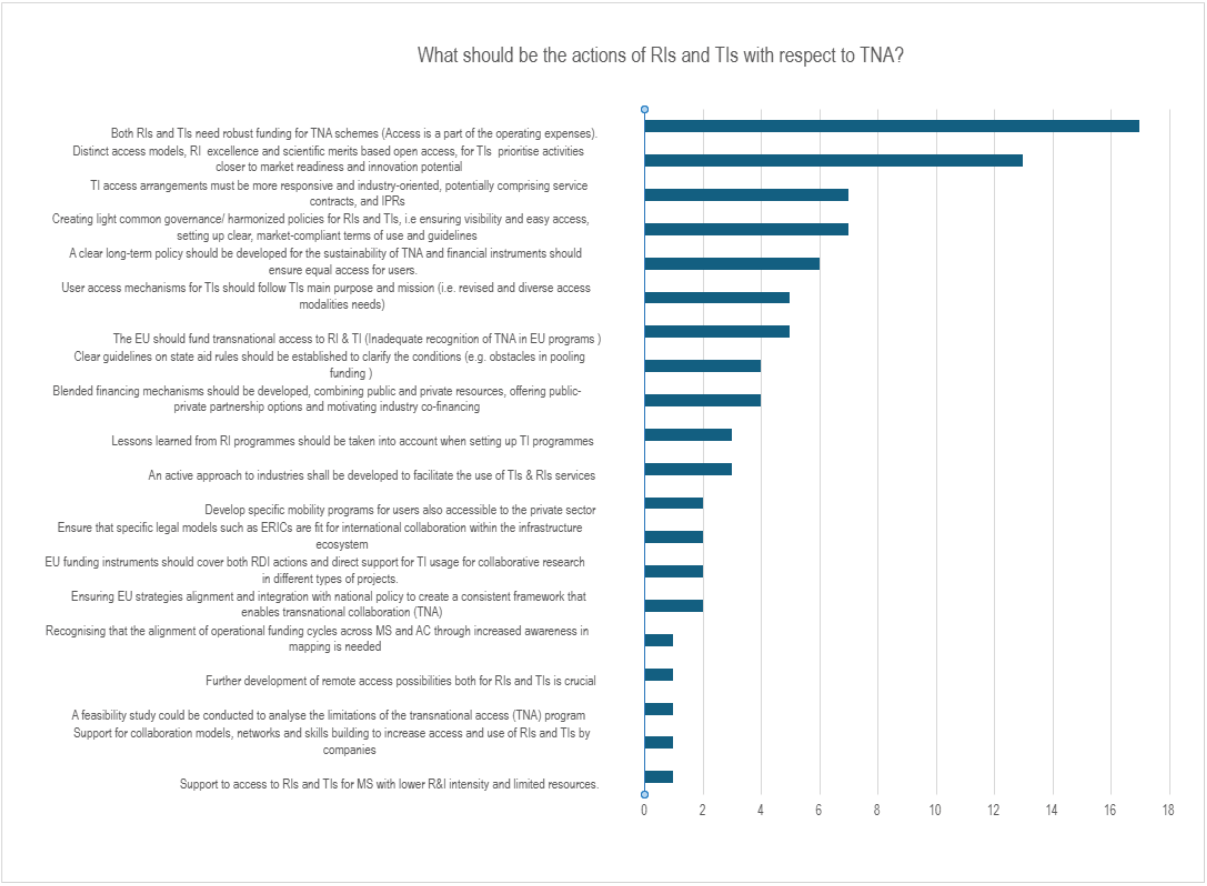
Synergies between RIs and TIs are also expected, at the same time ensuring that the RIs and TIs can coexist without competing for funding. For this purpose, a clear setting of funding criteria of TIs, as well as simplified and harmonized procedure of recognition and funding of TIs, including clarification of State Aid rules, will be very helpful. It is also expected that the TIs strategy will be aligned with the EU strategic priorities, added value at EU level cooperation should always be a guiding principle.

A strategic approach is privileged by the countries, which should be aligned with regional, national and European priorities, focusing on strategic sectors and cross-border cooperation. Overall, it should be focused on practical benefits for users, such as joint development of testing facilities, knowledge-sharing networks, and transnational funding models that strengthen European competitiveness.



Question 5: Opportunities for transnational access to RIs and TIs rely mostly on EU funding, which has however significantly decreased over the last 10 years for RIs, and is very limited and occasional for TIs. Should the user access mechanisms of TIs be differentiated to those of RIs? What do you consider as the best way for ensuring adequate opportunities for transnational access in the future?

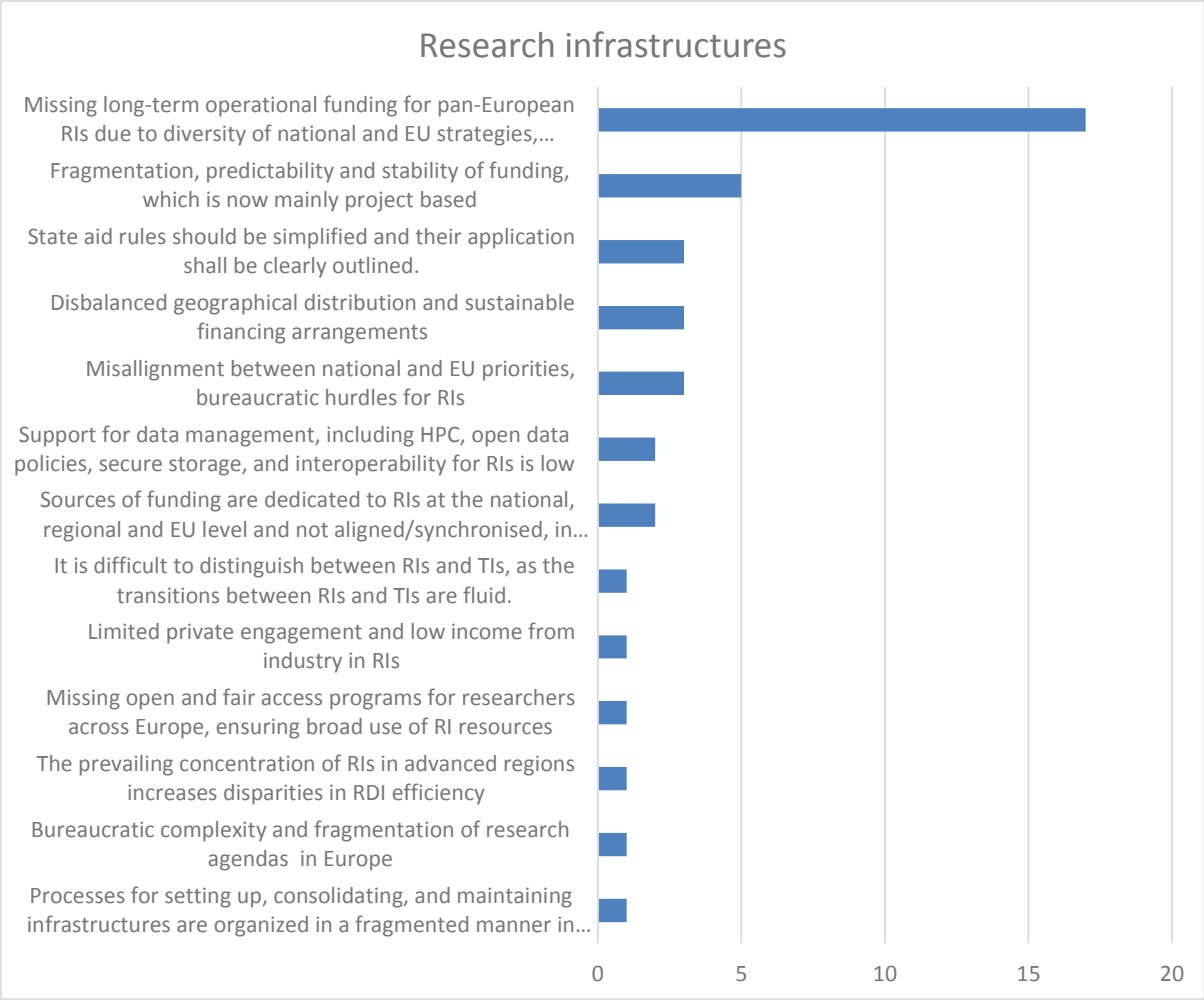
The majority of MS/AC agreed that both RI&TIs need sustainable funding for transnational access (TNA) that shall come to a large extent from the EU. Existing TNA access models shall be revised, and efforts should be made to a) improve administrative frameworks, b) collaboration models, including support of networks and funding of capacity and skills building that can support access and use of RIs and TIs by private sector. While fundamental principles should be maintained and be technically similar, access to TI`s and RI`s shall distinguish the different target groups, and the access modalities shall ensure that both scientific and industrial communities can maximize the value of the use of these infrastructures. Well-defined, clear, and long-term access policies are crucial to ensure fair, transparent, and efficient use of both RIs and TIs across Europe, while also balancing regional and industrial needs. The access models including TNA shall include industry public-private partnerships with cost-sharing principles and sustainable funding models. Access arrangements for TIs must be more demand driven, industry-oriented and fit commercial schedules. Light common governance and streamlined policies will assure higher visibility and efficient TNA to TIs.

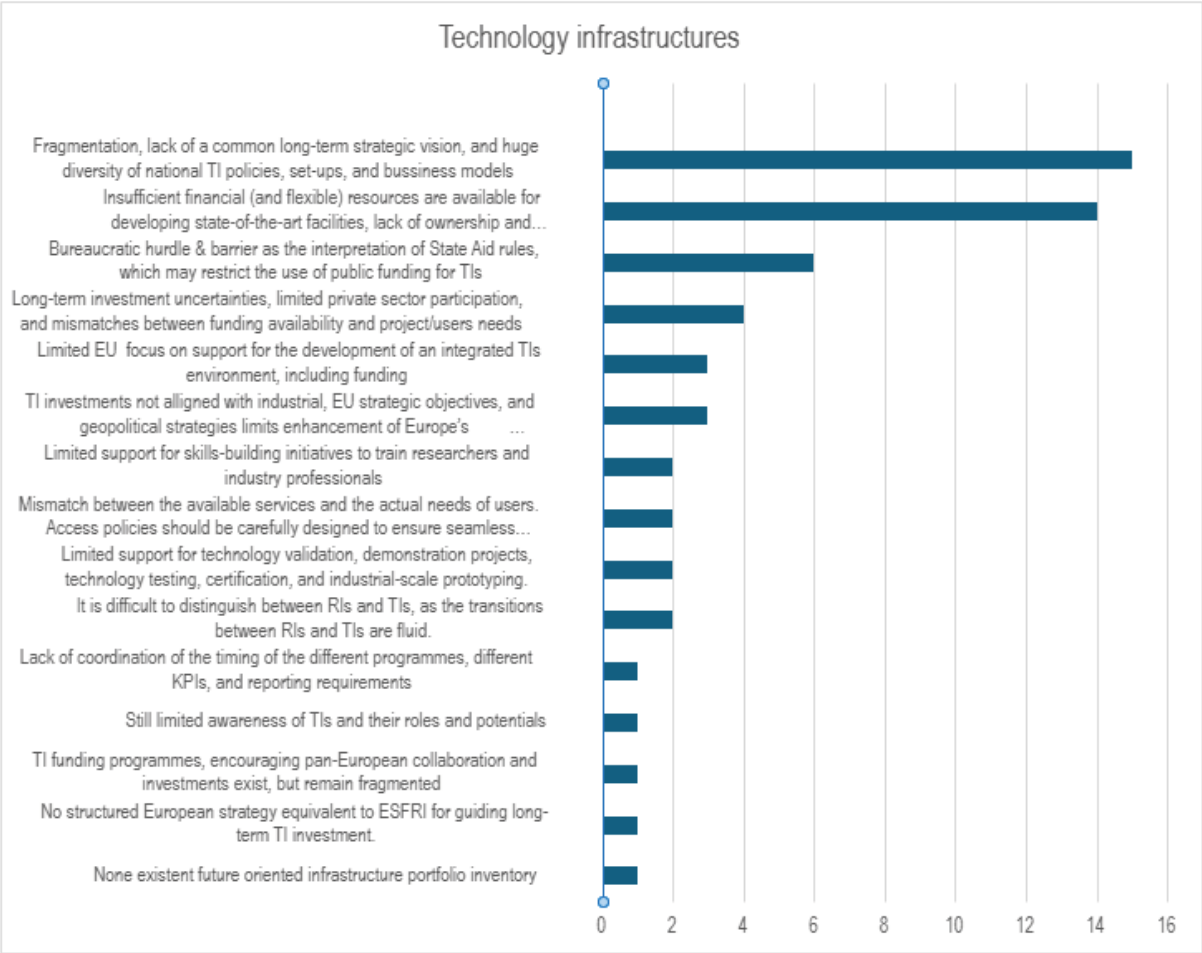


Governance: Prioritisation and pooling of investments in RIs and TIs

Question 6: What are the most important obstacles in effective and efficient pooling of funding for investments of the Member States and the EU funds and programs in RIs and TIs, and for operation of pan-European infrastructures in a global competitive context? Please answer separately for RIs and for TIs.

Though the RI ecosystem has been found well matured by most of the MS/AC, still a large number of them identified the persisting differences in national and EU strategies and the connected funding as the biggest obstacle in pooling resources. Absence of predictable longer term institutional funding, that would replace project-based funding models has been seen by several MS/AC contributing to the fragmentation of the ecosystem. Different perception within the national implementation of state-aid rules has been identified as another challenge for both RIs and TIs. For Tis the two major obstacles were fragmentation and lack of common strategic vision, which together with different national TI policies, huge administrative burdens, and insufficient resources leads to slow adaptation of workable TIs models. Several MS/AC also identified the mismatch between the needs and the offered services, or limited support to technology validation and testing, as problematic. In general, the variety of obstacles found in the MS/AC replies to the questionnaire was much broader, identifying lower maturity of the TI ecosystem.





Question 7:

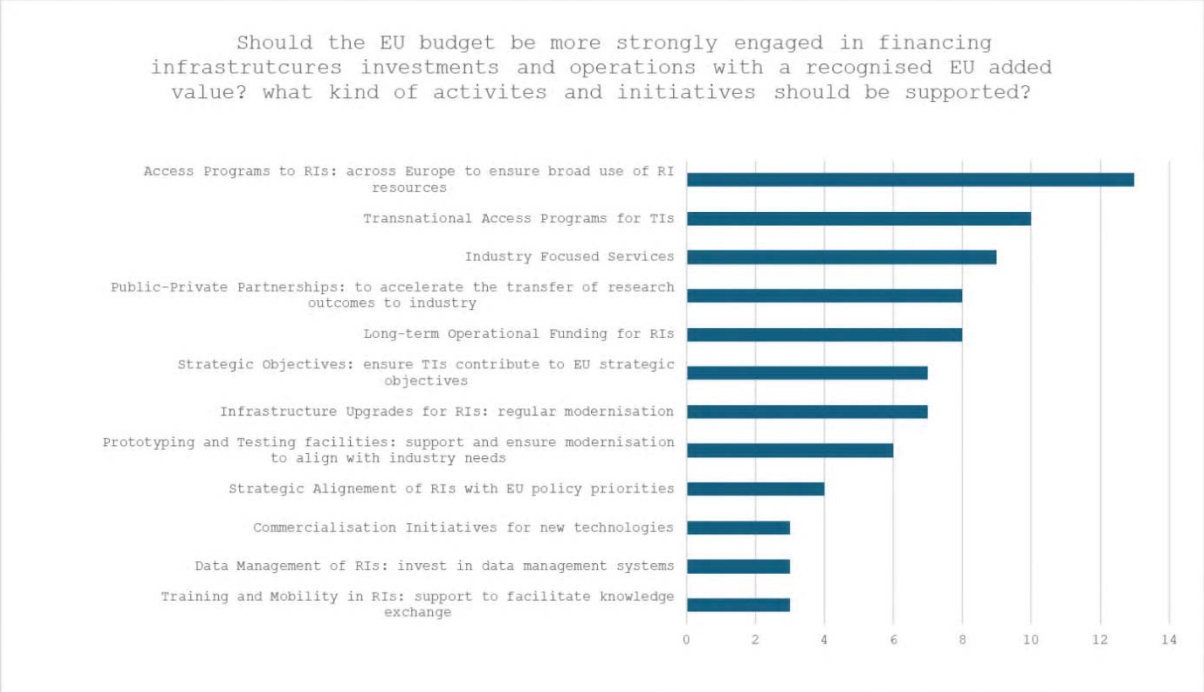
Should the EU budget be more strongly engaged in financing infrastructures investments and operations with a recognised EU added value? What types of activities and initiatives should be supported? Please answer separately for RIs and for TIs and precise if you want a separate approach for these two types of infrastructures.

There is a need for an EU strategy for TIs and RIs with a clear priority in the EU budget to support this strategy. The EU budget should contribute, as much as possible, to the development of a joint RI-TI ecosystem, matching the strategy of investing in excellent research and closing the innovation gap. Besides, supporting activities and initiatives that involve collaboration between EU member states and associated countries – across both RIs and TIs will be helpful in strengthening Europe's competitive position globally.

Recognising that RIs and TIs have different missions and user profiles, EU funding should be tailored accordingly, and separate funding approaches are needed. For RIs with an excellence-driven approach, stable, not project-based but structural EU funding is essential in order to support the frontier excellence research, contributing to ERA and responding to global challenges. Dedicated funding should ensure the sustainability of their operations and specifically support transnational access. For TIs, the challenge-driven approach should prioritise industrial competitiveness and technology deployment, focusing on strengthening EU technological sovereignty and competitiveness in strategic areas (e.g. AI, 5G, cybersecurity, etc.). TIs should involve strong engagement from industry and private sector stakeholders, fostering joint investment between the private sector, Member States, and the EU**.** A stronger link with industrial communities and a more integrated approach between RDI and industrial policy are necessary. For the TIs more clarification is needed on State Aid rules.

Given the level of resources needed, and the world competition, the fragmentation of policy frameworks for investments in 27 non-coordinated national policies is no longer possible. Therefore, there is a need for and EU strategy for TIs and RIs with a clear priority in the EU budget to support this strategy. Moreover, competitiveness through innovation will not be possible for the EU by supporting only on basic research on the one hand, and start-ups on the other hand. Technology development and validation is required before a laboratory result can be transferred to industrial deployment.

There was also a suggestion, looking back to the last 10-15 years, to think about re-evaluation of EU funding mechanisms to RIs and Tis. A new (co-)funding mechanism could be envisaged to make the joint financing of the construction, the operation and the transnational access of research infrastructures and potentially the technology infrastructures in Europe easier.



Question 8: What main challenges or barriers did you encounter in investing and supporting to RI and TI at national level? Please answer separately for RIs and for TIs.

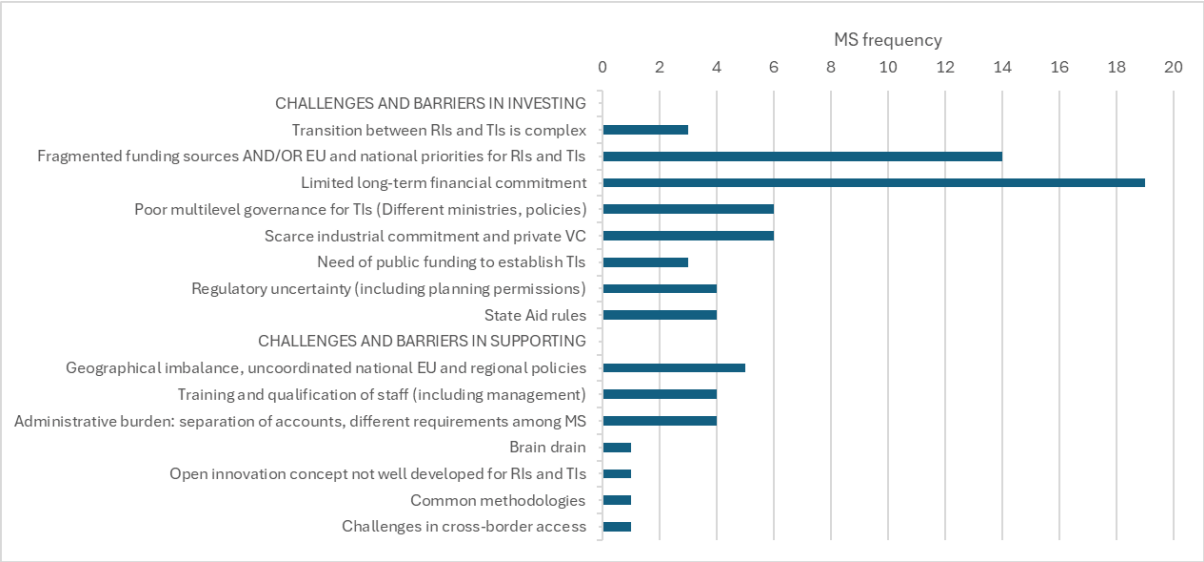
Increasing the competitiveness of the Union relies, at least partially, on the idea that specific sectors and technologies -which require large investments on infrastructures- will play a key role in our strategic autonomy. All countries have shown the need to eliminate barriers to investing in Research and Technology infrastructures at EU and national levels.

The responses to this question also showed topics already shown in other parts of the survey, such as the fact that RI and TI are part of the same ecosystem, the lack of a clear TI definition, the geographical imbalance and brain drain, or the need for staff training and qualification (including management). As for RIs, TIs suffer from regulatory and policy barriers (the lack of clear definitions and applicable rules) which can be seen in detail in Q10.

The survey showed that both RI and TI share barriers:

- Most MS have identified European coordination and a long-term funding strategy for RI as key to fostering EU and national investments and support. Most MS highlight the need to align national priorities and financial capacities while addressing administrative and bureaucratic burdens that cause inefficiencies and drive-up operational costs.

- TIs are definitely in a more complex situation. The debate on the need for TI to increase our competitiveness and whether there is a need for EU TIs, has brought up several challenges. In fact, few countries have a specific strategy and not all Member States have the same capacity to finance TIs. The lack of an EU TI strategy and political recognition becomes a governance burden. The survey also showed that those MS with TIs strategies usually lack a coordinated action -some MS with TI investment point at distinct ministries having fragmented political and funding priorities-, which leads to the inability to leverage synergies effectively at the national or regional level. A clear consequence is a shortage of financial resources dedicated to TIs, hindering their development and modernization. For some MS, an EU strategy and public funding for CAPEX and OPEX are needed, and they should help leverage private investments and improve our competitiveness. These challenges prevent private sector investment from being attracted due to unclear returns and financial risks that make it difficult to develop sustainable TIs. Some MS has also underlined that *TIs have more impact at the industrial and regional levels where coordination is more difficult.*



Question 9. The Report of the Expert Group on Technology Infrastructures identifies three basic implementation options in which a horizontal coordination mechanism for TIs could be established:

a) integrated into an already existing governance structure (i.e. ESFRI) with relevant scope and competences,

b) embedded into a new governance that could be set up to foster EU's competitiveness and oversee the related priority setting and investments, or

c) established as a completely new body dedicated exclusively to Technology Infrastructures.

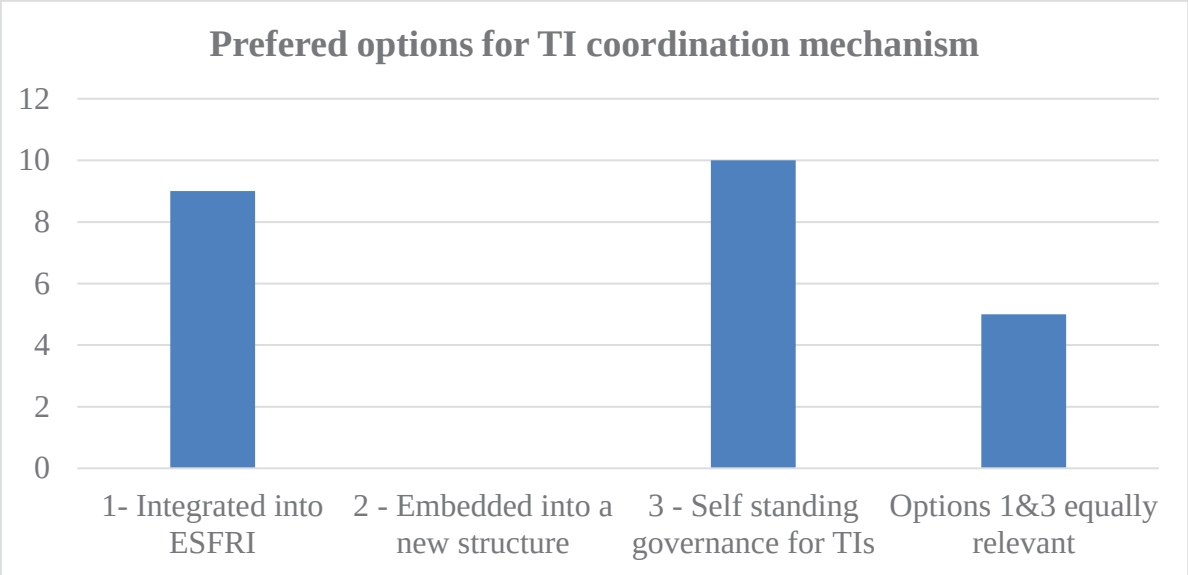
The Expert Group considers that TIs are distinct from RIs and should be governed in line with their unique characteristics, emphasising industrial policy as much as R&I policy. Therefore, the option recommended by the Expert Group is the creation of a new, dedicated TI governance body based on the specificity of TIs.

What is your view on the governance on TIs? Would you choose among these three options?

The proposal of the Expert Group to have a multi-actor coordination framework for TIs with two levels is a good starting point. Such coordination should reflect their unique characteristics and needs, as well as be capable of linking industrial policy objectives with research and innovation policy. This could be implemented in two ways.

First, a completely new body dedicated exclusively to TIs could be established. This would provide a coordination that is tailored specifically to the needs and objectives of TIs, including strong industry engagement and alignment with industrial strategies. It would enable focused decision-making and funding aligned with the dynamic needs of industries and emerging technologies. Such body would need to cooperate closely with ESFRI to ensure synergies between RIs and TIs wherever relevant and to avoid duplication of efforts and funding.

Second, the mandate of ESFRI, including its structure and modus operandi, could be adapted to integrate the responsibility for strategic development of TIs in the EU. This would provide an overarching framework for the development and capacity building for both RIs and TIs allowing maximisation of synergies and coordination of EU and national efforts for the entire ecosystem of infrastructures supporting science, innovation and technology development efforts. It would also provide the critical mass to coordinate research and technology infrastructure policy with broader EU strategic objectives, including industrial competitiveness. However, such structure may risk being less well adapted to the specific needs of RIs and of TIs.



Considering the early stage of development of a European policy on TIs and the lack of specific national strategies in many countries, a staged approach could be most appropriate. This would imply the creation of a light coordination structure for TIs in the short term with the intention of converging it with ESFRI in time for the next MFF, in view to provide a strategic steering for the entire research and technology infrastructure ecosystem.

Questions 10 on State Aid & GBER:

a. **RIs and TIs can be used for both economic and non-economic activities. When public funding financed infrastructures with economic activities, State Aid rules apply. What should be the allowed economic activity level at which the exemptions apply?** ***Please answer separately for RIs and for TIs.***

b. **Are RIs and TIs adequately reflected (legal certainty) in the General Block Exemption Regulation and State Aid Regulation to allow the ministers responsible for financing and planning these activities in your country (i.e. ministry of finances and ministries for research and technological activities)? What are the main weaknesses you find?** ***(I.e. reduce the administrative burden on the justifications applicable to financing infrastructures that include so far clear separation of accounts of economic and non-economic activities, demonstrate the existence of a market failure, Incentive effect of the aid.)***

a. Allowed Economic Activity Level for Exemptions:

In summary, there is some consensus in asking for different levels of e.a. for each type of infrastructure while allowing flexibility to accommodate the mixed-use nature of some RI and TIs.

RIs rules under SA and GBER regulations are well known. Funding should primarily support non-economic activities such as research and dissemination of knowledge. Any economic activities (e.a.) must remain separated and limited to no more than 20% (which seems fair to almost all MS) of the infrastructure's overall capacity or annual activity. Flexibility is expected if the relation with the private sector is focused on the core mission of the RI.

Despite the lack of clear rules for TIs, some MS suggested that they should have e.a. levels above 20% with some flexibility that would permit upgrades/investments in the infrastructure.

b. Reflection in General Block Exemption Regulation (GBER) and State Aid Regulation:

There is consensus that RIs and TIs are not yet adequately reflected in current regulations, leading to legal uncertainty. MS understand that any modification could have an impact in the functioning of the internal market. However, a clear definition of RI/TIs boundaries, missions and users of each type of infrastructures is needed so that the concept, interpretation of e.a. and uses of RIs and TIs would not overlap.

The GBER (Reg 651/2014) primarily addresses public RIs, with limited mention of TIs, which can be open to interpretation by european/national/regional authorities. This creates challenges in applying State Aid rules and compliance of the GBER uniformly, especially given TIs' unique industrial focus. Thus, most MS expressed that TIs are not well reflected in the SA and GBER regulation. Some MS suggested that the current reference to Testing and experimentation infrastructures (TEI) equating to TIs in footnote 32 of *Communication from the Commission – Framework for State aid for research and development and innovation 2022/C 414/01*- creates uncertainty. Some MS pleaded to remove it, and in any case, there is a clear need for clarification, especially if TIs will play a key role in the competitiveness of the Union.

Other main challenges identified by MS include: demonstrating the existence of a market failure or the incentive effect of aid can be challenging, adding to the complexity of justifying public funding for infrastructures; reducing the administrative barriers and; improve the communication, especially with DGCOMP and, finally, foster common practices among MS to reduce divergent interpretations of the Sa and GBER regulations.