



Council of the
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OUTCOME OF PROCEEDINGS

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To: Delegations

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Subject: Research Infrastructures

- Council conclusions (approved on 2 December 2022)

Delegations will find in Annex the Council conclusions on Research Infrastructures, approved by the Council at its 3914th meeting held on 2 December 2022.

Council Conclusions on Research Infrastructures

The Council of the European Union,

RECALLING:

- its *Conclusions of 1 December 2020 on the New European Research Area (ERA)*¹, underlining the research infrastructure (RI) domain as a priority to develop the ERA Policy Agenda and implement the ERA Actions, and outlining the need for long-term sustainable investments in the European RI ecosystem to contribute to excellent results in fundamental and applied sciences, and deliver the comprehensive knowledge needed to address present and future challenges;
- its *Conclusions of 28 May 2021 on Deepening the European Research Area: Providing Researchers with Attractive and Sustainable Careers and Working Conditions and Making Brain Circulation a Reality*², noting the essential role that highly skilled talents play in the operation of RIs and e-infrastructures;
- its *Conclusions of 28 September 2021 on Global Approach to Research and Innovation – Europe’s Strategy for International Cooperation in a Changing World*³, stressing the importance of openness and international cooperation in RIs for the advancement of science, science diplomacy, tackling global challenges and increasing access to excellence, and encouraging the European Strategy Forum on Research Infrastructures (ESFRI) and the Commission to support activities of RIs aiming at further development and implementation of the global RI network in cooperation with partner countries, based on shared fundamental values and principles;

¹ 13567/20.

² 9138/21.

³ 12301/21.

- its *Recommendation of 26 November 2021 on a Pact for Research and Innovation in Europe*⁴ that encompasses RIs as a priority area for joint action in the European Union (EU) to further deepen a functioning internal market for knowledge and calls for enhancing integration of the European RI ecosystem to maximise the benefits and impacts of investments in RIs, and provide knowledge-based solutions to global societal and economic needs;
- its *Conclusions of 26 November 2021 on the Future Governance of the European Research Area*⁵, setting out the ERA Policy Agenda for the period 2022–2024, and suggesting that ESFRI continues with its work as an independent Commission Expert Group, and closely coordinates with and regularly informs the ERA Forum;
- its *Conclusions of 10 June 2022 on European Missions*⁶, emphasising the critical importance of RIs in achieving the objectives of European Missions and of ESFRI in guiding the strategic development of the European RI landscape and fostering RIs’ contribution to the implementation of European Missions.

GENERAL POLICY PERSPECTIVES

1. ACKNOWLEDGES that a fully functional and operational European RI ecosystem, which efficiently integrates European, national, as well as regional RIs of various sizes, is a vital cornerstone in the development of renewed ERA, plays a central role in Europe’s ability to provide with knowledge-based solutions to grand societal challenges, to support overall EU priorities and contributes to prosperity and well-being in Europe.

⁴ OJ L 431, 2.12.2021, p. 1-9.

⁵ 14308/2021.

⁶ 10124/22.

2. AGREES that RIs constitute a fundamental pillar of research and innovation (R&I) ecosystems in Member States and the EU as a whole, providing researchers innovators and other stakeholders with unique knowledge and expertise, experimental devices and technical resources, and extensive collections of data sets and related ICT and computing services, which are necessary to perform cutting-edge fundamental and applied research, extending frontiers of knowledge, and to develop state-of-the-art technologies, feeding into innovations; RECOGNIZES the role of RIs in promoting excellence in R&I and helping European researchers, innovators and other stakeholders become more competitive at a global level.
3. UNDERLINES benefits and impacts of public investments in RIs on industries, small and medium-sized enterprises (SMEs) and other relevant actors, through the activities such as proprietary access to RIs, contractual research, joint R&I, training and industrial supply of top-class products and services to RIs; EMPHASIZES the importance of further development of capacities and services of RIs addressing private sector needs in order to strengthen European competitiveness.
4. ACKNOWLEDGES that, beyond their fundamental missions in the areas of R&I, nationally and regionally anchored RIs act as an amplifier for regional development, when offering highly qualified jobs, including the managerial, scientific, technical, administrative and other positions, and boosting development of their sites and neighbouring regions by stimulating the development of new businesses, supply chains, civil infrastructure and related services, thereby shaping regional economic strategies.
5. RECOGNISES the importance of further strengthening and facilitating broader access to RIs; ACKNOWLEDGES that a more balanced distribution of excellent RIs across Europe and construction of nationally and regionally anchored RIs embedded in the Smart Specialisation Strategies of their host countries and regions hold a great potential to accelerate closing of the R&I divide, foster openness, harvest the full potential of the R&I excellence and increase the cohesion in Europe.

6. INVITES ESFRI to look into the approaches by Member States, the Commission, international organisations and RIs to assess scientific, societal and economic impacts of investments in RIs, identify good practices, develop a monitoring framework, test it and elaborate recommendations to national and regional RI stakeholders by the end of 2023.
7. RECOGNISES the open access policies of RIs as a major contribution to stimulating knowledge and brain circulation, promoting high-quality and specialised training to students, researchers, innovators, managers and technicians, strengthening inter-sectorial and international mobility, and attracting talented students, early career researchers, leading scientists, highly skilled innovators and entrepreneurs from all over the world to Europe, thereby enhancing Europe's international collaboration in R&I and reinforcing the competitiveness of the European R&I ecosystem globally.
8. UNDERLINES the importance of the professional training of the staff in charge of RIs for the development of its knowledge and competences; CALLS on Member States and the Commission to explore options for a common approach for the staff of the RIs, especially in the case of a European Research Infrastructure Consortium (ERIC).
9. ACKNOWLEDGES that both RIs and technology infrastructures (TIs) are a part of the same infrastructure ecosystem; UNDERLINES that mapping users' needs for TIs, taking into account relevant work of ESFRI, is one of the prerequisites for the identification of a way forward for the implementation of the TI concept within the ERA Policy Agenda and a starting point for any future strategies and activities.

CONVERGING RESEARCH INFRASTRUCTURE AND OTHER SECTORIAL POLICIES

10. UNDERLINES the potential of RIs, integrating a large variety of stakeholders, including outside R&I, and providing multidisciplinary solution-oriented services, in contributing to convergence of R&I policies with other sectorial policies; ENCOURAGES Member States and the Commission through ESFRI to identify how RIs can optimally contribute to the implementation of Horizon Europe and, in particular, of European Partnerships and Missions, and initiatives such as industrial technology roadmaps.
11. ENCOURAGES the RIs to design new services based on different missions of RIs, and to contribute to the European and global wider policy objectives, such as the green transition, digital transformation and resilience of the EU economy, and the United Nations Sustainable Development Goals, in RI strategic agendas in order to exploit the full potential of the European RI ecosystem.

INTEGRATING RESEARCH INFRASTRUCTURES IN THE EU'S RESPONSE TO CRISES

12. APPRECIATES the immediate call for action by ESFRI, and early reaction and essential contribution by European, national and regional RIs to address the Covid-19 pandemic crisis; WELCOMES the adaptation of RIs to unprecedented conditions of operations, to continue to serve users despite containment measures, to implement innovative modes of operation, enabling fast track, remote and virtual access, to re-baseline user programmes in line with pressing societal needs and to prioritise user experiments of critical relevance.

13. ACKNOWLEDGES that the European RI ecosystem, as a part of the EU's overall response to crises, proved its readiness to accommodate to sudden crises; CONSIDERS the European RI ecosystem a key component for the post-crises recovery with a great potential to strengthen resilience and preparedness of the European society in order to cope with any present and future crisis; CALLS on Member States and the Commission through ESFRI, as well as RIs, to elaborate on scenarios to manage possible upcoming crises, including energy supply difficulties.

ENSURING THE LONG-TERM SUSTAINABILITY OF EUROPEAN RESEARCH INFRASTRUCTURES

14. ACKNOWLEDGES that the RI funding requires strategic investments through the entire RI life-cycle, including the phases of concept development, design, preparation, implementation, construction, operation, major upgrades, reorientation, decommissioning and termination, which spreads over decades; ENCOURAGES Member States to form a sustainable political commitment on long-term funding of RIs, thereby facilitating a stable, reliable and predictable financial planning of RIs and their development, including through the use of EU programmes under shared management and INVITES the Commission to support them in those efforts.
15. INVITES Member States and the Commission through ESFRI to perform an analysis of the types of financial support to the European RIs throughout their life-cycle, identify good practices and synergies of various RI funding resources, and explore appropriate RI funding models and corresponding RI funding initiatives.
16. CALLS on Member States and the Commission for coordinated efforts in the spirit of their co-design, co-creation and co-implementation to promote and advance synergies in the RI funding at the regional, national, macro-regional and European level to increase the efficiency of investments in RIs.

17. EMPHASISES the vital role of highly skilled personnel in constructing and operating RIs, and serving users and meeting their needs; REITERATES the Council invitation to the Commission to present initiative for a European framework on research careers.
18. STRESSES that long-term sustainability of RIs does not stop at financial or human resources considerations but that their environmental impact should also be taken into account; CALLS on Member States and the Commission through ESFRI, as well as RIs, to reflect on this impact and to develop methods for measuring it.

ADVANCING THE RESEARCH INFRASTRUCTURE ECOSYSTEM IN EUROPE

19. INVITES Member States, the Commission and stakeholders to proceed swiftly with the implementation of the ERA Policy Agenda for the period 2022–2024 and, in particular ERA Action 8 (“Strengthen sustainability, accessibility and resilience of RIs in the ERA”) and other activities on ESFRI’s work plan 2022–2023; CALLS on the Commission to ensure that ESFRI is closely involved in the work of the ERA Forum when relevant, which is essential for an effective exchange and contribution of RIs to the implementation of the ERA.
20. UNDERLINES the role of ESFRI in triggering and structuring coordinated approaches at both European and national levels to the RI policy-making, resulting in, among others, roadmapping and landscaping processes, leading to a more coherent RI policy-making in Europe; in this respect, CONSIDERS that the coordination between ESFRI and the European Open Science Cloud (EOSC) Steering Board is needed; INVITES Member States to reinforce their efforts directed at the RI roadmapping and landscaping, while considering guidelines, recommendations and good practices developed through ESFRI, and while respecting the national diversity.
21. INVITES Member States to carry out peer review-based RI monitoring exercises in line with ESFRI’s good practices and based on a set of criteria, including context, narratives and managerial, scientific, technical, financial and other indicators, by which the progress and performance of RIs throughout their life-cycle may be monitored appropriately.

22. ENCOURAGES Member States and the Commission to provide incentives, including financial ones, to RI operators to continue networking, clustering, associating, and, if appropriate, to develop scenarios for integrating and even merging their facilities, and RI capacities and capabilities across scientific disciplines and research domains at the regional, national and European levels to promote consolidation of the European RI ecosystem.

DEVELOPING THE EUROPEAN INFRASTRUCTURE FOR SCIENTIFIC DATA AND DIGITAL TRANSITION

23. ACKNOWLEDGES the critical role of RIs in producing, collecting, processing, storing and providing quality certified scientific data in accordance with the FAIR (*Findable, Accessible, Interoperable and Reusable*) principles, thus facilitating the use of such data across a broad range of disciplinary domains and internationally, and fundamentally contributing to the implementation of EOSC and open science policy.
24. ENCOURAGES Member States and the Commission to promote the development of national data and e-infrastructures by mobilising regional, national and EU funding; ACKNOWLEDGES FAIR data management plans as essential components of research enabling and performing organisations; and ENCOURAGES Member States and the Commission to promote investment in education and training of scientific data curators; CALLS on Member States to federate their regional and national data and e-infrastructures within EOSC.
25. ACKNOWLEDGES the fact that EOSC is being developed in a complex environment with European, national and regional constituents that involves generic and thematic components with different levels of maturity and priorities; RECOGNISES a key role of ESFRI and thematic RIs working together with EOSC core developers and operators to speed up the implementation of open science policy and the FAIR data management, and to promote interdisciplinary R&I in Europe.

26. RECOGNISES the digital transition as a major opportunity for RIs' development, their accessibility, interoperability and integration in the European and global digital R&I ecosystem; INVITES Member States and the Commission to promote digitalisation of RIs throughout their entire RI life-cycle.

REINFORCING THE EUROPEAN STRATEGY FORUM ON RESEARCH INFRASTRUCTURES

27. ACKNOWLEDGES the essential position of ESFRI as a strategy forum, driven by Member States, to conduct a regular, open and structured dialogue with European RI and R&I stakeholders through the ESFRI Stakeholder Forum in order to analyse their needs and bottlenecks and to provide Member States and the Commission with evidence-based and timely advice, and strategic vision for an effective long-term sustainable development of the RI ecosystem in Europe; WELCOMES considerations of ESFRI on how best to involve associated countries, stakeholders and relevant third countries on a case by case approach based on shared fundamental values and principles.
28. APPRECIATES that ESFRI operates on the basis of consensus, integrating views of all its members, respecting geographical, economic, societal and cultural diversity in Europe, allowing for reaching solutions based on the principle of variable geometry while meeting common macro-regional and European needs, based on scientific excellence, and promoting cohesion and inclusiveness.
29. INVITES Member States and the Commission through ESFRI to perform a comprehensive analysis of the European RI landscape with the aim to identify existing synergies and complementarities, expose persistent deficiencies, shortcomings and gaps, and propose improvements on accessibility, networking, clustering, associating and even merging of European, national and regional RIs, and their deeper integration in a fully functional and interoperable European RI ecosystem; INVITES Member States and the Commission through ESFRI to publish the outcomes of the European RI landscape analysis, considering the results of the ongoing monitoring process undertaken by ESFRI; INVITES Member States to consider on a voluntary basis taking up the ESFRI monitoring methodology as appropriate.

30. INVITES Member States and the Commission through ESFRI to develop the next edition of the *ESFRI Roadmap*, including a strategy report on the European RI ecosystem, strategic orientations for the future European RI agenda development, and an overview of the ESFRI Projects and Landmarks, and publish the *ESFRI Roadmap* before the end of 2025.
31. TAKES NOTE of the ongoing work by ESFRI to explore, analyse and consider viable options for a reinforced and long-term sustainable support structure of ESFRI, thereby strengthening its capacity to deliver comprehensive strategic advice in the context of expanding and maturing European RI landscape, including EOSC and e-infrastructures, and the growing complexity of the European infrastructure ecosystem and the ERA Policy Agenda and the need to support overall EU priorities.

EVOLVING THE EUROPEAN CHARTER FOR ACCESS TO RESEARCH INFRASTRUCTURES

32. INVITES the Commission to present an initiative, following the consultation within ESFRI, on a revised *European Charter for Access to Research Infrastructures* by the end of 2023 in view of the evolving European RI ecosystem and landscape of RI facilities, which accommodate their user strategies and access policies for operations under various business models, serve users in the physical, remote and virtual access modes via secure connectivity, and enable mission-oriented and fast-track access to perform experiments and conduct studies of urgent societal and economic relevance.

ENHANCING THE EUROPEAN RESEARCH INFRASTRUCTURE FRAMEWORK

33. REAFFIRMS the relevance of the ERIC Framework to allow for the setting up of RI operating entities; ACKNOWLEDGES the progress made with 25 ERIC established since its entry into force; TAKES NOTE of the assessment of the ERIC Framework by the Commission Expert Group, contribution by ESFRI and the Commission report on the ERIC Framework; INVITES the Commission to propose an initiative by the end of 2023 on the possible evolution of the ERIC Framework, taking into account these Conclusions and in close cooperation with ESFRI and the ERIC Committee while considering the ERIC Forum expertise.

DEVELOPING THE GLOBAL RESEARCH INFRASTRUCTURE ECOSYSTEM

34. TAKES NOTE of the outcomes of the *International Conference on Research Infrastructures* (ICRI), held in Brno under the auspices of the Presidency of the Czech Republic of the Council of the EU from 19 to 21 October 2022; WELCOMES the *Brno Declaration on Fostering a Global Ecosystem of Research Infrastructures*.
35. CALLS on Member States and the Commission through ESFRI to elaborate a method to map the global RI landscape, linking the European, national and regional RIs in a multi-disciplinary and cross-sectorial way with the macro-regional and global levels, and consider cooperation schemes taking into account the political priorities of the EU's external relations and based on the EU's values and principles for the international R&I cooperation, including the principle of the balanced reciprocal openness, promoting a level playing field and underpinned by common framework conditions.
36. INVITES Member States and the Commission through ESFRI to intensify sharing of experiences and exchanging good practices at European and global level in the areas of RI policy-making, funding, roadmapping, landscape analysis, user strategies, access policies, governance, management, monitoring and assessment, thereby promoting and facilitating international cooperation between RIs, and feeding in high-level strategy debates to be held in relevant international fora, particularly at the biennial ICRI.