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# WHITE PAPER ON ACCESS TO DISTRIBUTED RESEARCH INFRASTRUCTURE SERVICES

Recommendations from the H2020  
PILOT Projects ATMO-ACCESS, NEP, ORP

September 2025

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# Introduction

The purpose of this White Paper is to present recommendations on the most appropriate models, mechanisms, and best practices to establish optimal conditions for implementing access programmes for distributed research infrastructures. It is the result of a long process of consultation and collaboration among the three Pilot projects funded under H2020 INFRAIA-03-2020 – Pilot for a new model of Integrating Activities, all launched in 2021. From the very beginning, the projects set up a series of joint meetings (12) to address common issues, including annual project meetings, cross-attendance at each project's events, and targeted sessions to discuss recommendations from the projects' outcomes. These exchanges fostered an environment for sharing and comparing of experiences, across the three Pilots that cover different scientific communities and research infrastructures (RIs), with varying levels of maturity in governance and legal recognition:

- **ATMO-ACCESS** (Solutions for Sustainable Access to Atmospheric Research Facilities) brings together three established and mature RIs (ACTRIS ERIC, ICOS ERIC, IAGOS-AISBL) in the atmospheric domain, recognised as landmarks on the ESFRI roadmap, and benefiting from an advanced level of organizational and legal integration.
- **NEP** (NFFA-Europe Pilot) is an advanced nanoscience research infrastructure that is being evaluated for inclusion in the 2026-ESFRI Roadmap. Operating since 2016, it offers coordinated access through a Single Entry Point to a variety of facilities, from large RIs to unique academic laboratories, supporting multi-approach user projects.
- **ORP** (Opticon RadioNet Pilot) represents the consolidation of two long-standing astronomical research infrastructure communities, OPTICON and RadioNet, uniting optical and radio astronomers within a single pilot framework.

Dialogue among the three Pilot projects has been constant and constructive. Based on the experience gained, this White Paper reflects a collective, iterative process capturing both shared insights and the diversity of views that naturally arise among the RIs at different stages of development and across diverse scientific domains. It presents the key recommendations derived from these discussions.

# Key recommendations from joint H2020 Pilot projects

The following seven recommendations summarise the joint outcomes of the three H2020 Pilot projects. They highlight key conditions for strengthening user access and ensuring the efficient use of RI services through improvements in the design of Horizon Europe Infrastructure projects.

## RECOMMENDATION 1: USER ACCESS IS AT THE CORE OF THE RESEARCH INFRASTRUCTURE PARADIGM

RIs are designed, created and operated to generate maximum and excellent scientific output from the engagement of the widest and most qualified community of researchers.

By providing access, distributed research infrastructures act as engines of frontier science with an international dimension, offering a unique entry point to facilities for users who lack equivalent resources in their own countries. While the impact of the Pilot projects on science and innovation can be fully assessed only in the long-term after the end of the projects, all three Pilots have supported ambitious initiatives that have enriched the scientific and innovation ecosystem. The transnational dimension of user access plays a crucial role, motivating and testing RI upgrades, enabling benchmarking between infrastructures and fostering collaboration across borders. The constant demand for access (TA/VA) within the three Pilot projects is a key indicator of their relevance and illustrates the need for such projects.

EU Framework programmes play a unique and indispensable role in sustaining the RI ecosystem. They provide dedicated funding for access to distributed RIs, particularly where no sustainable business model exists to support user access. This EU-level, public support is essential to ensure that scientific excellence, rather than financial capacity, determines who can benefit from and contribute to Europe's research facilities. While sustainable access funding should ultimately rely on a combination of complementary sources, a survey with potential funding agencies (e.g., national science foundations in Europe) revealed that no viable alternative to EU-funded programmes currently exists. The three Pilot projects therefore strongly recommend maintaining EU-funded opportunities for transnational and virtual access (TA/VA) as a key instrument. ERICs, as well as other recognised RIs operating within existing governance frameworks, may help facilitate additional funding mechanisms, but significant challenges remain.

### Key message 1:

**Continued EU support for Transnational and Virtual Access (TA/VA) is essential to foster scientific excellence and openness, as no viable alternative funding mechanisms currently exists.**



## RECOMMENDATION 2: AVOID DECOUPLING RI DEVELOPMENT AND USER ACCESS

The H2020 Pilot project formula of >60% support to access and remaining support to (joint) research and management of the consortium to improve the technical offer has been successful in all three domains. The Horizon Europe INFRA programme introduces a functional separation between INFRADEV, INFRATECH, INFRAEOSC, and INFRASERV, with only the latter allowing for user involvement through transnational access. This structure makes it more challenging for RIs to develop user-focused service upgrades and incorporate user feedback effectively. Certain RI developments, such as new instrumentation or data management pipelines, need validation by selected external users before reaching the maturity level to become standard offerings.

Currently, the planning of support measures for technical upgrades and access provision has become increasingly uncertain due to the competitive selection process for project funding and the timing of the different INFRA calls. Moreover, the requirement for challenge-driven INFRASERV projects to align with societal challenges results in consortia and objectives that differ significantly between INFRATECH and INFRADEV projects.

Differences in scope and design across the INFRA calls make it challenging for RIs to implement strategies that are both coherent and widely understandable. Maintaining a development component within INFRASERV projects is adequate to support the short-term evolution of services within a single RI or a consortium of RIs, ultimately benefitting all users. Nonetheless, opportunities of support for users to contribute as co-developers or beta-testers in major RI upgrades remain limited.

### Key message 2:

**Maintaining close alignment between RI development, management, and user access helps ensure that services remain coherent and effective. Allowing a limited fraction of TA-VA in INFRADEV, INFRATECH and INFRAEOSC projects could provide highly valuable, timely validation of new strategies and development priorities.**



## RECOMMENDATION 3: AVOID STRUCTURALLY INCOHERENT, OVERLY LARGE CONSORTIA

Building overly large, challenge-based or multi-topic consortia by grouping RIs with fundamentally different scientific goals and operational models creates structural difficulties for access provision. Very large grants, such as the €35 million large-scale pilot foreseen in INFRASERV in the 2026–2027 Work Programme, impose significant administrative burdens, risk forming unmanageable consortia, create harmful fragmentation, and can dilute focus on the projects' scientific objectives. Experience from the Pilot projects indicates that budgets around €10–15 million are better suited to support focus, strategy-oriented consortia, where roles are clear, coordination is effective, and scientific objectives remain central.

Access policies, technical requirements, and user expectations vary greatly across disciplines. Forced integration often requires redundant development to harmonise access processes, resulting in poor alignment with actual user needs and in inefficient use of resources. Large, multi-domain consortia can also complicate coordination and performance monitoring, discourage scientifically-driven leadership, limit the pool of eligible coordinators, and alienate users who prefer direct engagement with the RIs relevant to their work.

Calls should be structured around well-defined scientific communities, rather than prioritising broad ESFRI domains or artificial groupings, with funding levels aligned to their ability to deliver projects effectively and produce quality outputs, including FAIR data.

INFRASERV projects should continue to prioritise curiosity-driven, excellent science. For the academic communities, curiosity-driven approaches are most effective in maintaining coherence in access projects, although challenge-driven initiatives may be appropriate within a limited scientific focus (e.g., atmosphere and health domain). A flexible funding system, reflecting the number of RIs involved, could support projects of varying size while consistently addressing user needs. This model has successfully been implemented in past infrastructure cluster projects.

### Key message 3:

**Medium-sized (€10–15 million), focused projects work best, enabling consortia to remain coherent, maintain clear roles and effective coordination, and better align scientific objectives with user needs, while avoiding the administrative burden and fragmentation associated with very large, multi-topic consortia.**





## RECOMMENDATION 4: SIMPLIFY FINANCIAL RULES AND PROJECT STRUCTURES FOR TRANSNATIONAL ACCESS

The current organization of TA projects is overly complex and increasingly difficult to manage, starting from the project preparation. Provisional allocation of access, the integration of facilities' host organisations as project beneficiaries, and strict reimbursement mechanism under existing TA/VA rules lead to inefficiencies and managerial challenges for coordinators, beneficiaries and users. Greater flexibility in financial rules is needed to optimise access management and accommodate the variety of user requests.

Successful schemes previously adopted by the EC, such as “lump sums” and “cascade grants”, or “service contracts” should be extended to RIs, positioning them as trusted actors capable of managing access costs and service provision, while reducing administrative overhead. Where appropriate, delegating greater responsibility to ERICs and well-established RI consortia, identified in the ESFRI landscape, to manage and oversee TA activities would further increase effectiveness.

Furthermore, some large and active research communities (such as in the astronomy domain) require distributed facilities across multiple countries, often including Widening countries, and may not involve ESFRI or ERIC legal partners, highlighting the need for complementary mechanisms to ensure access and coordination for these fields.

Together, these measures would enable more flexible and sustainable access models that better serve both providers and users.



### **Key message 4:**

**Greater flexibility in financial rules, including lump sums, cascade grants, and service contracts, combined with delegating responsibility to well-established RI consortia, can reduce complexity, streamline management, and enable more effective and sustainable transnational access.**

## RECOMMENDATION 5: ENSURING CONTINUITY OF ACCESS BY OPTIMIZING TIMING OF INFRA CALLS

While engagement with users can take diverse forms tailored to the specific scope of different measures (INFRADEV, INFRATECH, INFRAEOSC, INFRASERV), disruptions in service provision must be avoided, as they jeopardise collaboration and reduce the effectiveness of subsequent, time-gapped projects. Continuous and predictable access is therefore crucial for all users, particularly non-academic users.

The experience of launching the Pilot projects only at the end of H2020 illustrates this point clearly. Their delayed start limited opportunities to contribute to Horizon Europe planning and created gaps in TA provision, resulting in a surge of user applications, particularly during the final call, driven by concerns that future opportunities might not materialise in a timely or predictable manner. Disruptions in access service provision undermine trust, interrupt long-standing collaborations, and significantly reduce the effectiveness.

To prevent such situations, we strongly recommend to better synchronise the timing of INFRA calls to ensure continuity of access and support the long-term engagement of scientific communities, while clustering of deadlines and resulting resource overload should be avoided.

This should be complemented by maintaining thematic continuity in INFRA calls. Frequent changes in call scope, as noted previously, make it difficult for users to understand how to access available opportunities and, ultimately, reduce the optimal use of RI services. A well-timed, sustainably organised access system, clear and understandable even to non-academic users, would be far more effective in promoting the optimal use of RI.



### **Key message 5:**

**Better timing and thematic stability of INFRA calls are crucial to ensure continuous, predictable access, support long-term user engagement, and maximise the scientific impact and usability of Europe's research infrastructures.**



## RECOMMENDATION 6: EXPANDING TNA OPPORTUNITIES BEYOND INFRA IN FP10

The concept of TA/VA to RIs is restricted to the INFRA Work Programme in Horizon Europe under Pillar 1- “Excellent Science”. Where they exist, ERICs and other recognised RIs should be empowered and entrusted with greater responsibility to organise and manage access schemes. This approach should apply not only under Pillar 1 but also to projects funded under Pillars 2 and 3.

Under Pillar 2- “Global Challenges and European Industrial Competitiveness”, projects aligned with thematic clusters such as the Green Deal, digital transformation, health, and security are funded without clear integration with existing RIs, even though target-driven basic research often relies on RI services to address societal challenges. TA/VA concepts and mechanisms should be explicitly embedded in these projects funded under Pillar 2 to better promote access to high-quality data and facilities. Currently, associated proposals often lack a clear pathway to utilise RI services, and their use is not explicitly accounted for in financial reporting, highlighting the need for more transparent and structured access mechanisms.

Similarly, Pillar 3- “Innovation and Industrial Competitiveness” should actively promote the use of RI services by the private sector, with access serving as a key mechanism to facilitate collaboration between academic and industrial partners. Private sector engagement could further be encouraged by adapting the transnationality rule, for example by allowing national private sector access under RI supervision.

This calls for unified and simplified policies, reporting, and reimbursement mechanisms, in both INFRA and Cluster/Research and innovation (RTD) projects. Linking TA/VA into Cluster/RTD initiatives would leverage EU Member State investments, support co-funded calls, and ensure the continuity and legacy of access services, while also providing a model for national funding strategies. The dual role of RIs, to address global challenges and competitiveness in industrial innovation, can be realised by coordinating INFRASERV projects with Pillar 2 and Pillar 3 initiatives.

### **Key message 6:**

**Embedding transnational and virtual access into Pillar 2 and 3 projects ensures optimal use of RI services, strengthens academic and industrial engagement, and supports these objectives through effective use of funding.**



## RECOMMENDATION 7: PROMOTE THE INTERNATIONAL DIMENSION OF RIS

European RIs must fully embrace their international dimension to strengthen scientific excellence and foster global collaboration. The three Pilot projects have demonstrated this potential, receiving and funding a substantial number of applications (around 10%) from international researchers affiliated to entities outside the European Research Area, and enabling access to facilities located beyond Europe's political boundaries and/or operated by international consortia.

As world-class research facilities increasingly emerge in other regions of the world, mechanisms that enable European researchers to access these infrastructures is essential to maintain connection to cutting-edge science that may no longer be hosted in Europe. At the same time, European RIs can serve as leading training hubs for researchers from other regions, reinforcing reciprocal value and promoting European expertise.

While some international access is already possible, the EU should develop clear modalities to promote reciprocal access agreements, ensuring mutual benefit and allowing European researchers to access international facilities under comparable conditions. Co-funded programmes involving both EU and third-country stakeholders could offer a sustainable model to support such international access.

A dedicated financial framework to integrate international consortia into RI access projects is currently lacking. Strategies that position global engagement as a core RI objective, supported by harmonised administrative procedures and interoperable access systems, would benefit all stakeholders, particularly European researchers. Expanding remote and hybrid access models would further enhance inclusivity and strengthen Europe's global scientific presence. Dedicated monitoring tools should be developed to track international access flows and measure outcomes, thereby supporting strategic planning and demonstrating the impact of these initiatives.

By fostering a globally connected RI ecosystem, Europe can continue to lead in scientific innovation while contributing meaningfully to global policy, capacity-building and collaboration efforts.

### **Key message 7:**

**European RIs should promote their international dimension by developing reciprocal access agreements, expanding hybrid and remote access models, and providing dedicated funding to support global collaboration, thereby enhancing scientific excellence, fostering inclusivity, and strengthening Europe's global research presence.**



## Conclusion

The three H2020 Pilot projects (ATMO-ACCESS, NEP, ORP) highlight the central role of transnational and virtual access in the European RI ecosystem. They demonstrate that **flexibility, continuity, and proportionality** are essential in access policies, with stable and predictable support being key to strengthening Europe's scientific excellence, global competitiveness, and societal impact. These findings are translated into seven concrete recommendations, which together illustrate how the principles identified by the Pilots can guide policy and practice. The future EU Framework Programme (FP10 and beyond) offers a unique opportunity to embed these principles to consolidate Europe's leadership in an open, integrated, and sustainable RI landscape.

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