

Transform 4 European Research and Innovation (T4ERI)

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Work Package 2 Collaboration in Research and Innovation Report on the pilot evaluation for all initiatives in WP2 (D2.6)

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Executive Summary

This document corresponds to the **D2.6**: Report on the pilot evaluation for all initiatives in WP2 and aims at providing a concise overview of the piloting activities, highlighting key findings, successes, challenges, and recommendations derived from all pilot activities in WP2: Collaboration in Research and Innovation.

This deliverable is therefore the result, not only of the pilot phases themselves, but also of the preparatory work that led to the development of the CONNECT4RESEARCH tool namely: i) the mapping of the key research areas and main calls of interest within Transform4Europe, ii) the analysis of the legal and regulatory framework at a national level for all members of the alliance, iii) a concept for a potential online tool to facilitate infrastructure-sharing among the Transform4Europe Alliance, iv) the potential link to and synergies with existing bodies, protocols and initiatives pertinent at European and International level as well as v) feasibility of developing an online tool for sharing infrastructure across the members of the Alliance.

The Pilot study on the use of the CONNECT4RESEARCH tool developed in WP2 also incorporates inputs from a number of tasks implemented to achieve the objectives of WP2: Collaboration in Research and Innovation.

Specifically, D2.6 has been elaborated taking into consideration relevant information and the results of the pilot phases of CONNECT4RESEARCH partnering and infrastructure-sharing tool, both outputs from the following Tasks respectively:

- T2.1 Online research collaboration opportunity map and partnering tool
- T2.4 Enable joint access to key research infrastructures across the alliance

The objective was to test the usefulness and interest of the Transform4Europe research community in the CONNECT4RESERCH tool in view of providing the members of the consortium with all the necessary information about the actual options for:

- a) identifying and contacting partners for future collaboration in Research and Innovation,
- b) sharing key Research Infrastructures (RI) across the Alliance

in order to facilitate the discussion and the decision-making process for selecting the most appropriate solutions for the Transform4Europe alliance.

Introduction

The European Research Area (ERA) is facing new challenges due to the increasing demands for Research Infrastructure (RI) in various fields, including environment and climate research, humanities, social sciences, and medical research. The ERA is improving the efficiency and effectiveness of the overall European research and innovation

ecosystem, with a renewed ERA expected to exploit the significant contribution of R&I in achieving Europe's wider policy objectives and make ERA more responsive to society.

The outreach of RIs to other European agendas and policies is decisive, as they are crucial for European research and the sustainable development of the ERA. Investment in RIs is directed by the needs of science and shared policy priorities, while advanced infrastructures create the basis for the development of science itself.

Unique cutting-edge scientific facilities attract the best researchers from around the world and anchor European science in global research efforts and structural investment in RIs is required to meet both new scientific needs and contribute to the global challenges we face.

The Alliance adopted the definition of the <u>European Charter for Access to Research Infrastructures for Research Infrastructures</u>, according to which:

Research Infrastructures are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields.

They include: major scientific equipment (or sets of instruments), knowledge-based resources such as collections, archives and scientific data, e-infrastructures, such as data and computing systems and communication networks and any other tools that are essential to achieve excellence in research and innovation. They may be 'single-sited', 'virtual' and 'distributed'

PILOT PHASE in Task 2.1: Online research collaboration opportunity map and partnering tool

In this piloting phase, all T4ERI partners have tested the CONNECT4RESEARCH partnering tool (Pilot Platform). The idea was to explore with enough time the interest in this component of the CONNECT4RESEARCH tool and the potential for fostering joint collaborations in research, innovation (joint publications, collaborative research activity, mentoring, etc.) among the Transform4Europe members.

Objectives

This pilot phase aims at shedding light on the effectiveness and efficacy of the CONNECT4RESEARCH tool. The results are incorporated to this document which is one of the deliverables of T4ERI Work Package 2: Collaboration in Research and Innovation (WP2) that aimed to:

- 1. Set up an online research collaboration opportunity map and partnering tool for the T4E partner institutions in all research areas
- 2. Create a joint agenda for research and innovation in the T4E focus area of digital and environmental transformation for smart, sustainable and inclusive regions
- 3. Develop innovative and collaborative cross-alliance research centres

4. Enable access to partners' key research infrastructures

The specific objectives of this pilot phase were to:

- 1. Test the usefulness of the main output of *Task 2.1: Online research collaboration opportunity map and partnering tool* which is the <u>CONNECT4RESEARCH tool</u> (researchers partnering component) developed by the UA (OGPI IT) team.
- 2. Verify the success of the incorporation of the results of survey on the use of the tool at all T4ERI universities in view of exploring the potential fostering joint R&I initiatives among the beneficiary institutions.
- 3. Extract conclusions and agreement on suggested next steps

Methodology

Then the pilot test phase was launched officially:

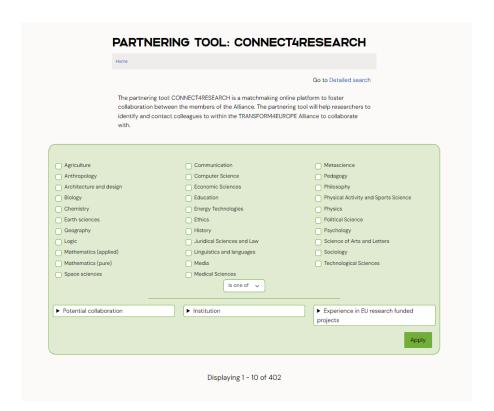
- An official communication was sent to a selected group of researchers at UA to get the first impressions of the research community
- An online info day about the tool was organized by UA for all members of the Transform4Europe alliance on 11 January 2024 to present the CONNECT4RESEARCH tool, including the infrastructure-sharing platform.
- An online meeting with CTOs of the T4EU Alliance (including new members) was organized on 18 April 2024 to collect feedback about the tool, potential synergies with existing tools at partner level and discussion of way forward
- May to June 2024: more communication was made at individual partner level to advertise the benefits of using the tool for the participation in the T4EU Seed funding programme (i.e. UA's internal info day was organized on 20 May 2024)
- Since the launch of CONNECT4RESEARCH, WP2 team has been monitoring the tool
 visitors' behavior. Tracking the user behavior of visitors to the T4ERI Tool allows us
 to obtain information about how they interact with the website. To obtain this
 information, a periodic process of collecting and evaluating data is carried out. This
 process is used as a tool to evaluate the progress and overall performance of the
 website and to analyze the source of traffic.
- Drawing conclusions on all the above to propose the next steps.

The current version of this document is updated as 26 July 2024.

Pilot Implementation

- Duration: 7 months (1 January 26 July 2024) has served to explore with enough time the interest in this component of the CONNECT4RESEARCH tool and the potential for boosting joint Research and Innovation among the researchers of the beneficiary institutions
- **Scope:** all members of the Transform4Europe alliance were invited to use and test the tool

- Method: online testing by the CONNECT4RESEARCH registered users (former and new users, including new members of Transform4Europe) during this period.
 Researchers were requested to provide their feedback via the online feedback form.
- Deviations: Given the time that IT solutions need to be implemented and/or improved, the coordinator of WP2 decided to launch the pilot as soon as CONNECT4RESEARCH tool was ready (July 2023)
- Technical Specifications of the tool
 - o Domain web.ogpi.es/t4eri/
 - Developed using Drupal 9 (CMS)
 - Hosted in our server at University of Alicante (GDPR compliance)
 - Full back up every 2 days.
 - o Periodic maintenance.



Challenges encountered in the registration process

- A. Control of new user registration
- B. Incorrect information in the field "Other research areas".
- C. Studies involving a combination of multiple academic disciplines (interdisciplinary)
- D. Frequent request for incorporation of new research areas
- E. Taxonomy of research areas not updated
- F. Design problems for displaying many fields in tree form

A. Control of new user registration

Current status:

Users with institutional email from the alliance

→ Automatic activation and subsequent review of new areas included.

Users with non-alliance email

→ Manual activation and subsequent review of new areas included.

Challenge:

Delay in user activation for users with non-alliance email.

Solution:

Verification of a profile by reviewing daily → working days.

B. Incorrect information in the field "Other research areas".

Challenge 1:

A user registers indicating new research areas that in reality are not such or do not fit in the current organization so they cannot be added.

Challenge 2:

Difficulty in defining what is a research area and what is not.

Solution:

Add that information in the researcher's profile as "Other expertise"

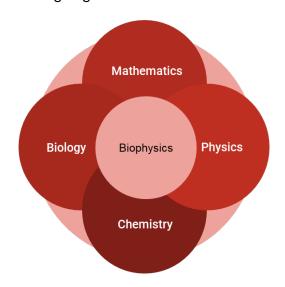


C. <u>Studies involving a combination of multiple academic disciplines (interdisciplinary)</u> Challenge:

Where and how can interdisciplinary studies be grouped? **Solution:**

- Duplicate the study indicating in parentheses the disciplines to which it belongs.

- Current example (image below):
 Biophysics (Biology), Biophysics (Physics), Biophysics (Chemistry), etc.
- Show the term as unique and accessible from both disciplines → Implies redesigning the tool. NOT FEASIBLE



D. Frequent request for incorporation of new research areas

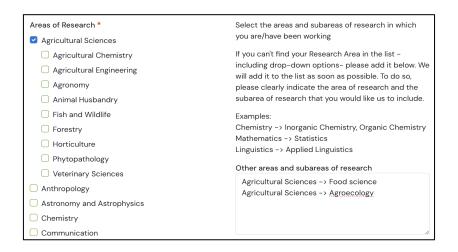
Challenge:

There are often requests for the inclusion of new research areas that are not on the list.

Solution:

To include new areas as long as they are level 1 and 2.

Taxonomy update should be done **before addition of new partners**



E. Taxonomy of research areas not updated

Current situation:

The list of research areas is defined according to the UNESCO codification of the year 2013, with a depth of level 2 and some minor additions.

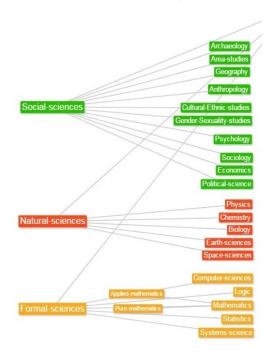
Challenge:

The taxonomy of research areas does not accurately reflect the current reality.

Solution:

Redefine the research areas according to a list of:

• academic fields https://en.wikipedia.org/wiki/List_of_academic_fields or scientific disciplines https://en.wikipedia.org/wiki/Branches_of_science



F. Design problems for displaying many fields in tree form

Current situation:

30 areas and 370 sub areas shown in one tree (level 1-2).

Solution:

Modify current structure or use another system such as an autocomplete field.

See example in https://web.ogpi.es/t4eri/partnering-tool-detailed

Areas of Research *	Select the areas and subareas of research in which you are/have
Agriculture	been working
□ Anthropology	If you can't find your Research Area in the list -including drop-dow
Architecture and design	options- please add it below. We will add it to the list as soon as possible. To do so, please clearly indicate the area of research and
Biology	the subarea of research that you would like us to include.
Chemistry	Examples:
Earth sciences	Chemistry -> Inorganic Chemistry, Organic Chemistry
Geography	Mathematics -> Statistics
☐ Logic	Linguistics -> Applied Linguistics
Mathematics (applied)	Other areas and subareas of research
Mathematics (pure)	
Space sciences	
 Environmental studies and forestry 	
 Communication 	
Computer Science	
☐ Economic Sciences	
☐ Education	
☐ Energy Technologies	
☐ Ethics	
History	
Uridical Sciences and Law	
Linguistics and languages	
☐ Media	
Medical Sciences	
■ Metascience	
Pedagogy	
Philosophy	
Physical Activity and Sports Science	
☐ Physics	
Political Science	
☐ Psychology	
Science of Arts and Letters	
Sociology	
☐ Technological Sciences	
☐ Tourism	

Current developments

- A. Incorporation of new partners
- B. Updates/new levels in Research Areas taxonomy
- C. Infrastructure-sharing tool

A. <u>Incorporation of new partners</u>

Important: This is linked to T4EU WP4, task led by UJM

- Consolidate and further develop the partnering tool from T4ERI Horizon project
- integration of the new partners
- develop concept for the shared use of research infrastructure

There is a milestone associated in T4EU: MS113 Consolidated partnering tool further developed (*Partnering tool published on the intranet and concept for shared use of research infrastructure approved by all partners*).

B. <u>Updates/new levels in Research Areas taxonomy</u>

Incorporation of a 3rd level in the taxonomy.

Possibility of adding a lower level in the taxonomy (current or updated) to be able to encompass many fields of study that are not currently there.

Level 1	ightarrow Level 2	→ Level 3
Agriculture	ightarrow Agricultural engineering	→ Biological systems engineering
Computer Sci	ences → Computer commu	nications (networks) \rightarrow Cloud computing
Physics	ightarrow Mechanics	→ Analytical mechanics

✓ Physics
☐ Acoustics
☐ Biophysics (physics)
 Electromagnetism
Electronics
☐ Fluids (physics of)
☐ High Energy Physics
Mechanics
Analytical mechanics
 Applied mechanics
☐ Biomechanics
☐ Molecular Physics
☐ Nanostructure Physics

Analysis method

The statistical data analysis tool used to obtain the information is the OGPI Analytics platform hosted at the domain https://piwik.ogpi.ua.es/

OGPI Analytics is the corporate service that monitors and evaluates the effectiveness and efficiency of the OGPI websites. It is based on the open-source analytics platform "Matomo" and is installed on a PHP/MySQL web server. Both the infrastructure and software are under the full control of the OGPI-University of Alicante and comply with the current EU data protection legislation.

- Data source: All information has been obtained through the OGPI Analytics platform.
- **Tool used:** The statistical data analysis tool used to obtain the information is the OGPI Analytics platform.
- Variables and definitions

A brief summary of the types of metrics used during the analysis:

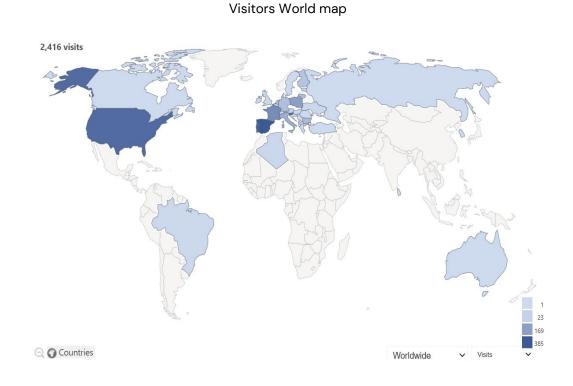
- 1. **Unique visitors:** The number of unduplicated visitors coming to the website. Every visitor is counted once, even if they visit the website multiple times a day.
- 2. **% of returning visitors:** The percentage of returning visitors.
- 3. Page views: The number of times a page was visited.
- 4. Average time spent on page: The length of time the visitor spent on the page.
- 5. **Sessions**: The number of sessions performed by visitors. A session starts with the first event and ends 30 minutes after the last event (after the session is over)
- 6. **Average session time**: The duration of a session measured from the first to last event during a visit.
- 7. Average page views in session: The number of page views during a session (page views / average session time).

- 8. **Event**: An event is an action taken by a visitor on the website, like a page view, download, outlink, etc.
- 9. **Bounce rate**: The percentage of sessions during which visitors viewed only one page and didn't continue to another page view. Bounce rate = (Bounces / Sessions) * 100%
- 10. Countries of origin: The number of countries from which a visitor entered the website.
- 11. **Average page rendering time**: The time taken to create the render tree, layout, and finally draw the website in the browser.
- 12. **Average server response time**: The time taken to receive the first byte of response from the server to the browser's request.
- 13. **Entries**: The number of times a page was the entry point to the website for a visitor.

Key Findings

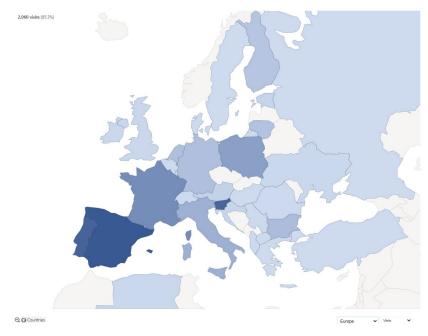
This section summarizes the major findings resulting from the piloting activities therefore it includes data, statistics, or anecdotal evidence supporting the conclusions. The data have been extracted for the entire duration of the pilot phase: from 01/01/2024 to 26/07/2024.

The following images show different visitors maps where it is shown how the CONNECT4RESEARCH tool has been visited by users from all over the world for a total of 2416 visits during the above-mentioned period. These statistics are reported in D2.6 as of 26 July 2024.



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Map of European Visitors



Visitors per T4EU countries in order of number of visits (and percentage)

Visitors from Spain: 385 (18,7%)



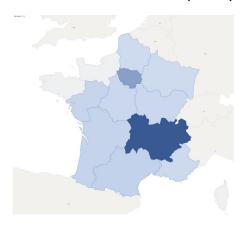
Visitors from Portugal: 351 (17%)



Visitors from Slovenia: 342 (16.6%)



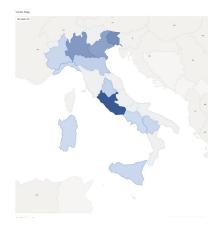
Visitors from France: 224 (10.9%)



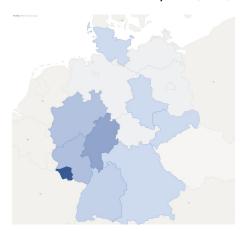
Visitors from Poland: 169 (8.2%)



Visitors from Italy: 122 (5%)



Visitors from Germany: 76 (3.1%)



Visitors from Lithuania: 69 (2.9%)



Visitors from Estonia: 18 (0.7%)



Visitors from Ukraine: 8 (0.3%)



Visitors from North America (including default location when system is unable to locate the user origin): 332 (13.7%)



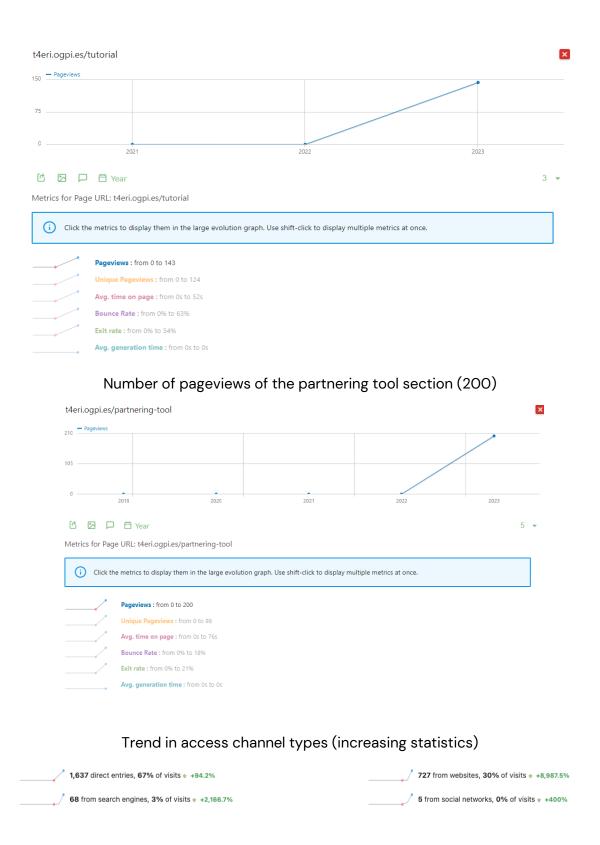
Visits overview during the period of the pilot phase

	2,441 visits + +185.5%
^	4 min 17s average visit duration
	51% visits have bounced (left the website after one page)
	10,843 pageviews, + +75.7%

Views of the different pages of the tool (including unique pageviews and bounce rate)

PAGE URL	PAGEVIEWS	▼ UNIQUE PAGEVIEWS	BOUNCE RATE	AVG. TIME ON PAGE	EXIT RATE	AVG. PAGE LOAD TIME
⊕ t4eri	44.2% 2,726	1,242	35%	00:01:16	23%	1.27s
⊕ user	11.7% 724	437	50%	00:01:40	32%	1.33s
☐ /index	11.6% 718	330	32%	00:01:19	45%	1.15s
☑ /tutorial	2.3% 143	124	63%	00:00:52	54%	1.45s
☐ /partnering-tool	3.2% 200	98	18%	00:01:16	21%	1.33s
☐ /members-of-the-alliance	2.2% 138	85	27%	00:00:39	12%	0.7s
⊕ members-of-the-alliance	2% 125	84	29%	00:01:03	17%	1.22s
☑ /feedback-webform	1.6% 99	73	73%	00:01:10	44%	1.65s
☐ /links-of-interest	1.5% 92	61	50%	00:01:18	20%	0.65s
☐ /events	1.2% 77	54	0%	00:00:33	13%	0.6s

Number of pageviews of the tutorial to guide the researchers in the registration process (143)



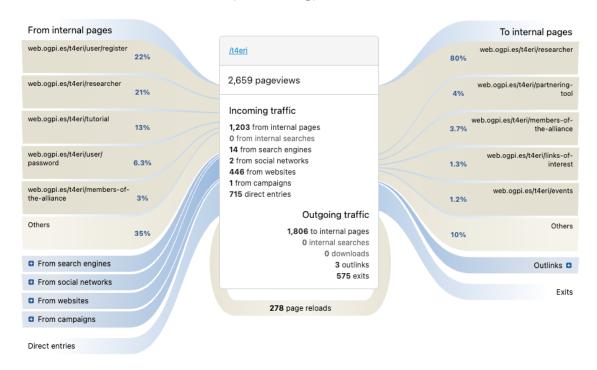
All access channel types (including number of visits and average time spent in the tool)

Channel Types					
CHANNEL TYPE	▼ VISITS	ACTIONS	ACTIONS PER VISIT	AVG. TIME ON WEBSITE	BOUNCE RATE
Direct Entry	1,615	5,954	3.7	3 min 30s	58%
☐ Websites	724	4,158	5.7	5 min 7s	36%
WEBSITE	▼ VISITS	ACTIONS	ACTIONS PER VISIT	AVG. TIME ON WEBSITE	BOUNCE RATE
transform4europe.eu	549	3,420	6.2	5 min 30s	30%
www.ucp.pt	90	300	3.3	3 min 21s	74%
intranet.univ-st-etienne.fr	33	252	7.6	6 min 0s	6%
mail.google.com	8	41	5.1	5 min 20s	13%
partage.univ-st-etienne.fr	8	21	2.6	1 min 16s	389
com.google.android.gm	7	30	4.3	5 min 59s	29%
ucppt.sharepoint.com	7	38	5.4	7 min 40s	57%
statics.teams.cdn.office	6	18	3	50s	33%
ffcs.braga.ucp.pt	4	4	1	Os	100%
www.porto.ucp.pt	3	13	4.3	7 min 33s	67%
(10 ▼
Search Engines	68	117	1.7	1 min 56s	76%
+ Social Networks	5	71	14.2	8 min 9s	09
+ Campaigns	4	52	13	9 min 59s	0%
4					
⊕ □					10

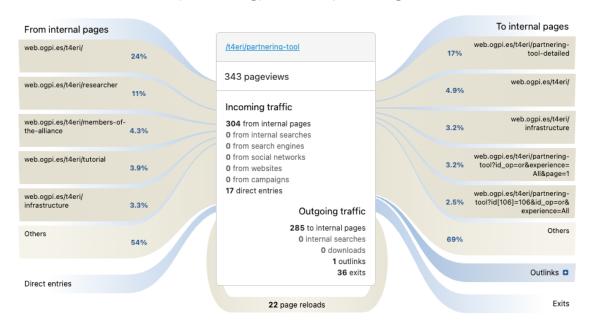
The tables and figures above show that the visitors come from all over the world, that users are coming from at least all European countries participating in T4ERI (including new partners and associated: Portugal, France, Slovenia and Ukraine), an increasing interest in the CONNECT4RESEARCH tool during the pilot phase, a very diverse array of access channel types.

Most views are coming from direct entries (67%) whilst the second most preferred option was through different websites (30%): transform4europe.eu, www.upc.pt, intranet.univ-st-etienne.fr, mail.google.com, etc.

OVERVIEW OF TRANSITIONS – what visitors did before and after visiting the page https://web.ogpi.es/t4eri/



OVERVIEW OF TRANSITIONS – what visitors did before and after visiting the section https://web.ogpi.es/t4eri/partnering-tool



Successes

The CONNECT4RESEARCH tool is seen by many of the stakeholders by one the most successful and impactful outputs of the T4ERI project. To this day there are **more than**

400 researchers from all Transform4Europe members registered and using CONNECT4RESEARCH.

The numbers of **visitors** in the platform as of end of July 2024 is more than **3300** since its launch, more than <u>2200 of them having accessed just during this pilot phase</u>.

The numbers of **pageviews** during the pilot phase are also really high for a platform entirely developed in the framework of an EU-funded project: more than **2650**.

Most of the access channel types to the tool have been by direct entry: over 1600.

Challenges and Lessons Learned

The T4ERI UA Team, in particular the IT Department of the Institutional Project Management Office (OGPI), had to work against the clock and start way before what it was indicated in the initial T4ERI Work Plan in order to develop the CONNECT4RESEARCH tool.

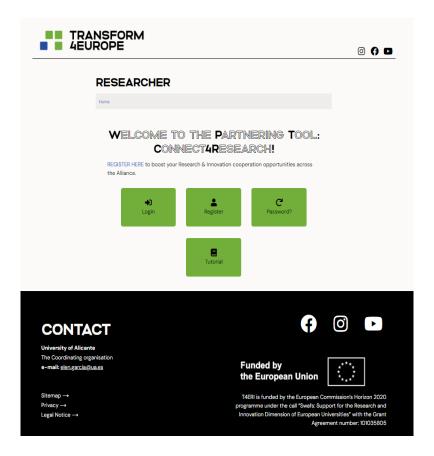
Every technical aspect has been addressed considering the most advanced solutions that allowed to achieve the tools' objective but that they were also compliant with the European legislation in terms of Data Storage, GDPR, etc.

The pilot phase has also helped collecting invaluable feedback to the research community that was crucial to tackle the full potential of the tool and analyze the technical viability of implementing best practices regarding shared research infrastructures conditions from other alliances funded under the same calls (SwafS-H2O2O).

More specifically, the T4ERI partners are now deciding upon the possibility of adding new features to the infrastructure-sharing tool after the benchmarking analysis. In particular, there are 2 sections that had been considered as relevant for further development of the tool and that they were proven to the key in the benchmarking analysis: i) Specific sharing terms and conditions for each item (Research infrastructure device, equipment, library...) ii) Legal framework for each item.

Adaptation of the CONNECT4RESEARCH tool to the Visual Identity should have been done from the beginning of the development of the tool to avoid the extra burden of work of having to adapt it, also for accessibility purposes.

The image below shows the final layout of the tool



User Feedback

From all the researchers that tested the tool, 23 of them provided feedback, through the online feedback form: the results were mostly positive when asked about the CONNECT4RESEARCH tool. Responses were found ranging from Very satisfied (11 answers), Satisfied (4) to Neutral (7) and Unsatisfied (1).

Moreover, some of them provided specific comments about the partnering functionality, for instance:

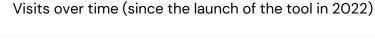
- "This section could be really useful, provided that there are many members signing up"
- "Clear and concise, allows specified search and matching: promising"
- "I am very excited to use the partnering tool in the future"
- "It is really interesting to see the profiles of people from other universities working in your area/ areas of interest/ expertise"
- "The way of getting to know the other members is very visual and clear, as it allows the user not only to see the interests that the other members of the alliance have, but also to find users with common interests to, surely, be able to establish joint investigations based on partnership, given by the Transform4Europe alliance"
- "I find the partnering tool excellent. Regarding some suggestions, perhaps directly adding the researcher's link to their scholar or Scopus profile alongside their name would allow for quick access to their articles. Another essential aspect is highlighting the researcher's position. For instance, in my case as a Ph.D. student, I don't expect

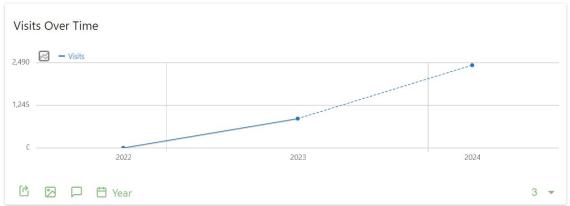
- other professors to contact me directly, but it would be helpful to include an option for contacting the thesis supervisor to facilitate communication. Great work!!"
- "There should be more possible choices, e.g. concerning the position in a project. It is e.g. possible to be partner (in a big joint project) and coordinator (of a single project) at the same time (which is the case for me). I also wonder why it is important to indicate the nationality at the beginning? Instead, it should be asked for the languages one masters, as this is also important for cooperation!"
- "I am not sure what is the functionality of this section. How do I find those who are seeking for partners, if I am interested in using the opportunities that are available? However, the design is very unappealing"
- "It does not seem an outstanding tool. Moreover, STEM sciences are underrepresented"
- "If I understood it correctly, entering a "keyword" will show you all individuals who
 conduct research on this topic. In some cases, this results in a large number of persons.
 It may be helpful to be able to combine keywords, such that you only see people who
 also named both keywords (if this option is already in place, I apparently overlooked
 it)"

The feedback from all users was taken into consideration and when technically feasible, incorporated to the tool. The users' feedback was truly useful to improve every aspect of it from its layout and visual appearance to its content, user-friendliness and usability.

Impact Assessment

The results of the number of pageviews and visitors for the CONNECT4RESEACH tool are extremely good considering that the tool was launched just 12 months ago on its pilot mode. As seen in the graphs below, the partnering part of the tool has reached a total of 63 pageviews. This means that there is a clear interest in the tool.





Recommendations

The number of registrations has increased since the announcement of the first seed funding call and after organizing an online event to jointly communicate the launch of the call and the benefits of the CONNECT4RESEARCH tool for funding partners to participate in the call.

The WP2 team and the T4ERI Management Board strongly recommend increasing the visibility of the CONNECT4RESEARCH tool. Researchers are really keen on using it but both sections of the tool (partnering and infrastructure-sharing) are under the RESEARCH Section of the Transform4Europe website. Thus, the tool is not visible in the landing page which hinders the access of the researchers that are unable to find the right section in the entire Transform4Europe website.

The partners are working on **improving the visibility of the tool on the website** with some promotional materials that are being prepared as well as part of the *ad hoc* communication campaign.

Next Steps

The main objective of the partners now is to **reach the maximum number of researchers** multiplying the potential number of users that benefit from the tools boosting joint Research & Innovation.

The next steps for the consortium now are to focus on a **strong Communication campaign** that brings the tool to the knowledge of the wider researchers' community across the alliance. The partners consider that apart from the general info day to present the partnering tool and infrastructure sharing tool to all T4EU Universities that was organized in English in January 2024, recorded and distributed among all members, additional individual information days, like the ones organized by some partners, must be organized at each University.

Conclusion

The CONNECT4RESEARCH tool, which was introduced a year ago, has had a substantial influence on research and innovation. The partnership section has garnered **10,800 pageviews**, demonstrating significant interest in the product. The number of registrants has surged following the announcement of the inaugural seed financing request and an online event. Nevertheless, the WP2 team and T4ERI Management Board suggest enhancing the tool's prominence.

Both components of the instrument, namely partnership and infrastructure-sharing, are located under the RESEARCH Section of the Transform4Europe website, which poses challenges for academics seeking access. The partners are collaborating to enhance the tool's awareness by utilizing promotional materials and implementing ad hoc marketing efforts.

The primary goal is to achieve the highest possible number of researchers, hence increasing the number of prospective users. The consortium's next steps involve implementing a robust communication effort to enhance awareness of the tool within the

broader community of scholars. It is recommended to arrange additional personalized information sessions at each university level. The <u>potential of use of the tool is really high since the Transform4Europe Researchers community is counted by tens of thousands.</u>

Acknowledgments

The T4ERI WP2 partners would like to sincerely thank all partners for their participation in this pilot phase and for the feedback provided.

PILOT PHASE in Task 2.4: Enable joint access to key research infrastructures across the alliance

In this piloting phase, all T4ERI partners have tested the CONNECT4RESEARCH infrastructure-sharing tool (Pilot Platform). The idea was to explore with enough time the interest in this component of the CONNECT4RESEARCH tool and the potential for shared use of those infrastructures among the Transform4Europe members.

Objectives

This pilot phase aims at shedding light on the effectiveness and efficacy of the CONNECT4RESEARCH tool. The results are incorporated to this document which is one of the deliverables of T4ERI Work Package 2: Collaboration in Research and Innovation (WP2) that aimed to:

- 1. Set up an online research collaboration opportunity map and partnering tool for the T4E partner institutions in all research areas
- 2. Create a joint agenda for research and innovation in the T4E focus area of digital and environmental transformation for smart, sustainable and inclusive regions
- 3. Develop innovative and collaborative cross-alliance research centres
- 4. Enable access to partners' key research infrastructures

The specific objectives of this pilot phase were to:

- 4. Test the usefulness of the main output of *Task 2.4 Enable joint access to key research infrastructures across the alliance* which is the <u>CONNECT4RESEARCH</u> Infrastructure-sharing tool developed by the UA (OGPI IT) team.
- 5. Verify the success of the incorporation of the results of survey on key Research Infrastructure at all T4ERI universities in view of exploring the potential shared use of those infrastructures among the beneficiary institutions.
- 6. Extract conclusions and agreement on suggested next steps

Methodology

The pilot phase of the CONNECT4RESEARCH *infrastructure*-sharing component has been coordinated by the T4ERI WP2 Team, led by the University of Alicante. The UA (OGPI IT) team had developed the platform following these steps:

- 1. The review of relevant European and International Initiatives to explore potential synergies.
- 2. The compilation of the legal and regulatory frameworks for Research Infrastructures at national and European level for all members of the consortium.
- 3. The benchmarking analysis of the solutions provided by other European Initiative Alliances.
- 4. The analysis of the possibilities to open up access to research infrastructures across the members of the Alliance.
- 5. The discussion of the mechanisms by which to provide and regulate shared access.
- 6. The development of the tool concept including definition of:
 - Purpose
 - Planning
 - Design
 - Technical development
- 7. The study of the technical feasibility of integrating the infrastructure-sharing tool into the T4ERI partnering tool CONNECT4RESEARCH.
- 8. The development of the online infrastructure-sharing tool for Pilot testing according to the T4ERI approach and including the processing and incorporation of the results of:
 - Task 2.1 Online research collaboration opportunity map and partnering tool where a detailed survey was prepared to collect the information concerning the key Research Areas for the Transform4Europe Alliance.
 - Task 2.4 Enable joint access to key research infrastructures across the alliance
 where the UA team launched another survey on key Research Infrastructure at
 all T4ERI universities in view of exploring the potential shared use of those
 infrastructures among the beneficiary institutions.
- 9. Extraction of Conclusions and agreement on suggested next steps

Then the pilot test phase was launched officially:

- An online info day about the tool was organized by UA for all members of the Transform4Europe alliance on 11 January 2024 to present the CONNECT4RESEARCH tool, including the infrastructure-sharing platform.
- An online meeting with CTOs of the T4EU Alliance (including new members) was organized on 18 April 2024 to collect feedback about the tool, potential synergies with existing tools at partner level and discussion of way forward

- May to June 2024: more communication was made at individual partner level to advertise the benefits of using the tool for the participation in the seed funding call (i.e. UA's internal info day was organized on 20 May 2024)
- During July, WP2 team has been drawing conclusions on all the above to propose the next steps.

Pilot Implementation

- **Duration:** 7 months (1 January 26 July 2024) has served to explore with enough time the interest in this component of the CONNECT4RESEARCH tool and the potential for shared use of those infrastructures among the beneficiary institutions
- **Scope:** all members of the Transform4Europe alliance were invited to use and test the tool
- Method: online testing by the CONNECT4RESEARCH registered users (former and new users, including new members of Transform4Europe) during this period.
 Researchers were requested to provide their feedback via the online feedback form.
- **Deviations:** Given the time that IT solutions need to be implemented and/or improved, the coordinator of WP2 decided to launch the pilot as soon as the infrastructure-sharing component was ready (January 2024)

In collaboration with the institutions' Chief Information Officers, the consortium:

- evaluated possibilities to open up access to these infrastructures across the alliance
- defined mechanisms by which to provide and regulate shared access
- identified legal and regulatory barriers and enablers to scientific and technological cooperation among universities.

Key Findings

The analysis done by the alliance CTOs, Management Board members and all project partners involved showed that to meet the current developments in Research and Innovation in Europe and to enable European Universities Alliances to be real actors of policy change, the Alliances needs clearer prioritization, better coordination, and more efficient use of their Research Infrastructures.

In this spirit, T4ERI partners, considering all the relevant context at EU and national level and after putting together the inventory of Research Infrastructure available and potentially to be shared among members of the Alliance, they have jointly developed an infrastructure-sharing open to all researchers across the Transform4Europe alliance: the CONNECT4RESEARCH Infrastructure-sharing component which, to facilitate access and optimize resources and maximize user-friendliness, has been incorporated to the general T4ERI Partnering Tool: CONNECT4RESEARCH.

After the successful integration of the Infrastructure-sharing tool into the T4ERI Partnering tool, the partners are starting discussing the feasibility of the inclusion of new features to Infrastructure-sharing tool concerning the specific regulations for shared access for each Research Infrastructure. It is still to be decided whether the partners will have the time and resources to collect the information needed to make the infrastructure-sharing platform more attractive to researchers.

Successes

The Inventory of Key Research Infrastructure (D2.3) showed that, among all initial members of the Alliance, there were nearly **500 key Research Infrastructures** (understood in wider terms as specified in the following section of this document) that could be potentially used by all researchers from the Transform4Europe partner universities. All of these items were incorporated to the corresponding section of the CONNECT4RESEARCH tool.

Therefore, there are several possibilities to open up access to these infrastructures across the alliance depending on the nature of the Research Infrastructure, the use needed and the dates requested that difficult the possibility to offer a general framework. Taking all of this into consideration, the consortium has opted for listing all potentially shared RI in the tool and for studying each individual request for access on a case by case basis.

It is worth mentioning that the inventory was done before the new members of the alliance from Portugal, France, Slovenia and Ukraine joined the consortium. Therefore, that <u>list of key Research Infrastructures available in the infrastructure-sharing part is expected to be much longer in the coming months in the framework of the T4EU project, when the inventory is updated with information about the key RI available within their Universities that could potentially be shared.</u>

Challenges and Lessons Learned

The T4ERI UA Team, in particular the IT Department of the Institutional Project Management Office (OGPI), has to analyze the technical viability of implementing best practices regarding shared research infrastructures conditions from other alliances funded under the same calls (SwafS-H2O2O).

More specifically, the T4ERI partners are now deciding upon the possibility of adding new features to the infrastructure-sharing tool after the benchmarking analysis. In particular, there are 2 sections that had been considered as relevant for further development of the tool and that they were proven to the key in the benchmarking analysis: i) Specific sharing terms and conditions for each item (Research infrastructure device, equipment, library...) ii) Legal framework for each item

User Feedback

Together with the CTOs and the Management Board, the T4ERI partners explored the option of expanding the tool possibilities, discussing the mechanisms by which to provide

and regulate shared access on <u>a case by case basis</u>, studying the options for <u>adding even more features</u> or even **maximizing the regional impact** by <u>opening the tools to key R&I stakeholders</u> allowing for registration of their researchers' communities to <u>find more R&I synergies</u> and also to have access to their Research Infrastructures. Below a table summarizing the results of the survey sent to all universities:

Survey Sent to all Partners Regarding the Infrastructure and Feedback Received

	1. Does your University have an online inventory of research infrastructures that includes requisites for access? Is it centralized in on single online platform?	2. Does your University have an online system for booking/consultatio n/etc. of research facilities, infrastructure, data bases, etc.? If so, is it accessible for users from outside your institution?	3. Does your university provide researchers with information about calls of interest? If so, are they available on line? Per email? Do you have them in any repository/platform?	4. Any other relevant feature/develo pment/website that you consider relevant for the alliance research infrastructure-sharing tool?
UJM	but one lab is using LabCollector to handle	possible to book "resources". These resources could be material and equipment	the Partnering Tool internally at UJM. E.g. one webinar is planned	Maybe to clarify the process when subscribing to the tool. Our IT wasn't sure about the subscription. An idea could be to have a clearer confirmation page when subscribing.
UP	NO, UP does not have such inventory. Inventory is managed by the accounting department, inside the accounting system. However, most of the equipment is also listed publicly: https://www.upr.si/en/5-research/247-infrastructure/266-laboratories/	No, no such system is in place at the moment.	Partially, some open calls are shared via intranet and e-mail, when they are considered important for our strategic objectives. In the past, this was more common, however, it was discovered that it is not beneficial, and the university stopped sending this information. The support is available on a on-demand basis.	Not at the moment.
VMU	The VMU does not have an online inventory of research infrastructures. The existing online inventory is related to digital resources and administered by the university library.	Yes, we do have a system where our employees can book facilities but it is not accessible for users outside our institution. I don't think it would be useful to include a link to the system because it would be accessible only for VMU researchers.	The university provides information about calls per e-mail. We do not have a platform for this information.	None

UNITS	No, we do not.	We have an internal	We are developing a	None
00	110, 110 00 1100		newsletter containing	110110
		, ,	information on call for	
		workshops. It is only	proposals. The newsletter is	
		available for internal	currently sent via e-mail. We	
		users.	will in the future include it	
			on the website.	
USIL	No - such a online	No - such a online	No	None
	inventory is currently	system is currently being		
	being developed at the	developed at the		
	University of Silesia	University of Silesia		
EKA	Not yet	Not yet	Not yet	Not yet

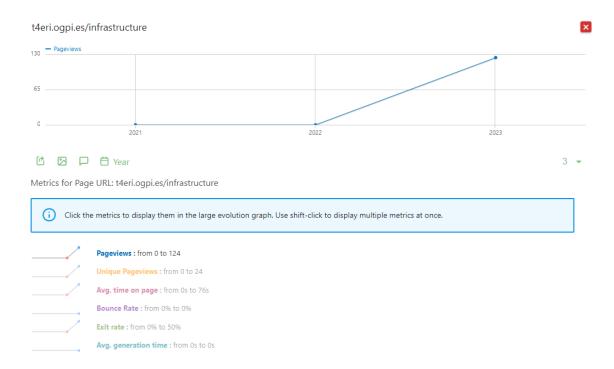
Impact Assessment

The results of the number of pageviews and visitors for the infrastructure-sharing component of the CONNECT4RESEACH tool are not as good as for the partnering/matchmaking part. As seen in the graphs below, this part of the tool has only reached a total of 63 pageviews. This means that both, it needs to be improved – including possible further information about each item – and it also needs to be advertised more intensely with a stronger communication campaign.

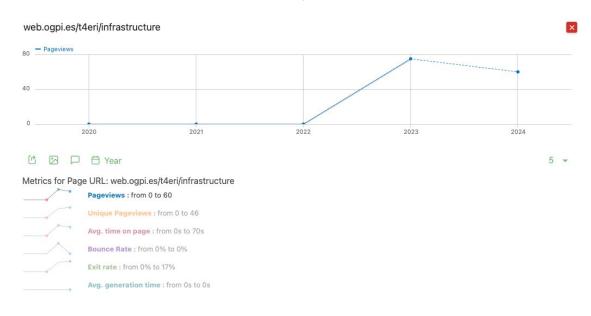
Page views coming from t4eri.ogpi.es/infrastructure/ during the pilot phase



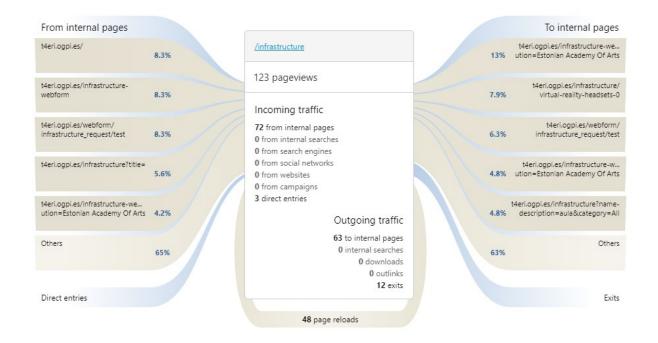
Page views coming from t4eri.ogpi.es/infrastructure/ since its creation



Trend of page views coming from t4eri.ogpi.es/infrastructure/ (it shows how the numbers as of July 2024 are nearly as good as for the entire 2023)



Transitions in page visits (websites where users come from and where do they go afterwards, it shows the numbers as of July 2024)



Recommendations

The addition of the new features would have, however implications for T4ERI partners in terms of the workload for the upcoming months since, unlike for the RIS4CIVIS Alliance, the Infrastructure-sharing platform did not exist previously and was not developed by an external company but by the own project partners, in the T4ERI case, by the University of Alicante with several inputs from all consortium members. The immediate consequence of the addition would be that:

- The specific sharing terms and conditions for each item should be provided by all partners in the coming months.
- The legal framework for each item would have to be provided by all partners in the coming months.
- All inputs by the partners should be collected over the next few months for UA to be
 able to implement the changes in the infrastructure-sharing tool before end of T4ERI
 project. Otherwise, changes must be made as part of the T4EU project as it is foreseen
 with the enlargement of the tool to include the data from the new members of the
 Alliance.

Meanwhile, the IT team has already advanced the development of the infrastructuresharing tool regarding:

- Adaptation of Tool layout to incorporate Transform4Europe Visual Identity.
- Improvement and update of the content of sections of common interest
- Integration of Infrastructure-sharing tool and Partnering tool under the same site.

Next Steps

The next steps for the consortium now are to focus on a **strong Communication** campaign that brings the tool to the knowledge of the wider researchers' community

across the alliance. The partners consider that apart from the general info day to present the partnering tool and infrastructure sharing tool to all T4EU Universities that was organized in English in January 2024, recorded and distributed among all members, additional individual information days, like the ones organized by some partners must be organized at each University.

Both tools (partnering and infrastructure-sharing) are under the RESEARCH Section of the Transform4Europe website and therefore, not so visible in the landing page. The partners are working on **improving the visibility of the tool on the website** with some materials that are being prepared as well as part of the *ad hoc* communication campaign.

The main objective of the partners now is to **reach the maximum number of researchers** multiplying the potential number of users that benefit from the tools boosting joint Research & Innovation and that take advantage of the opportunity to use key Research Infrastructures from other Universities in the Alliance that otherwise might not be available for them.

Conclusion

The analysis of the possibilities to open up access to research infrastructures within the Alliance showed as the best option for the consortium: an online platform that could be integrated in the partnering tool (already developed by T4ERI) and that included the full inventory of RI in the alliance that could be shared. This tool should give the users (researchers) the opportunity to search for the RI that they needed filtering by category, area of application, location, etc. in a very user-friendly manner to maximize the use of the tool.

The T4ERI approach was finally selected after a careful review of relevant European and International Initiatives to explore potential synergies and after collecting the legal and regulatory frameworks for Research Infrastructures at national and European level for all members of the consortium, and it also included the best practice extracted from the benchmarking analysis of the solutions provided by other European Initiative Alliances.

The consortium has been able to complete the development of the infrastructure sharing tool, according to the concept (Purpose, Planning, Design and Technical development) and the IT OGPI Team has also integrated successfully the infrastructure-sharing tool into the T4ERI partnering tool. The infrastructure-sharing tool is fully functional and available via the link https://web.ogpi.es/t4eri/

To continue further developing the tool, more resources would be need, in particular to collect and add the information from all new members in the alliance.

Appendix

The concept for relevant infrastructure sharing as well as the benchmarking exercises done have been included here for reference.

1. Concept for relevant infrastructures sharing

The development of a concept for an infrastructure-sharing tool for the member of the alliance included the definition of the different stages in the process, namely:

Purpose

 To use survey's results to develop an innovative online research infrastructure-sharing tool for researchers of all disciplines and experience levels in the T4EU alliance.

Planning

- Development of a sitemap
- Development of a navigational system.
- Technologies to be implemented (contact forms, custom content types, views, themes, specific plugins, etc.)

Design

o Design of the website including branding elements such as the logo and colors.

Technical Development

- o Creation of a functional website.
- o Desktop and mobile responsive views.
- o Website accessible.

Communication

 All partners will promote the online research collaboration opportunity map and partnering tool.

Evaluation

- Evaluation of the usability, use and benefits/added value of the tool by surveying its users.
- o Evaluation will be made 6 months after the pilot phase.

Key Performance Indicators

o Definition of KPIs to measure the success of the tool.

Improvements and final changes

o The result of the evaluation will revert in the improvement of the tool.

Delivery

o Once received the final approval, the website will be available to the public.

Maintenance plans

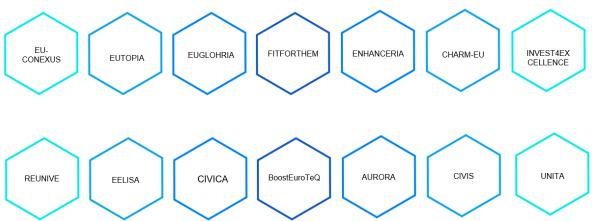
The tool will be regularly updated and maintained in the long-term.

The infrastructure-sharing tool was developed according to this concept proposed by the IT experts and approved by the partners and it is being fine-tuned with the inputs from the project partners received during the pilot phase.

2. Benchmarking

The T4ERI partners made a thorough benchmarking analysis to identify and compare how other alliances funded under the same calls (SwafS-H2O2O) had approached sharing infrastructure among their members.

BENCHMARKING



The figure above shows the short names of the European University Alliances surveyed for the benchmarking analysis. Source: Prepared by the author

The table below show that only 10 alliances set up a research platform – and only three out of those actually had an infrastructure–sharing solution. The 3 solutions provided by other those alliances where then analyzed: AURORA, UNITA–REUNITA and CIVIS–RIS4CIVIS.

As it can be seen in the images below, the results of the analysis showed that the concept and working version of the Infrastructure-sharing partnering tool for the pilot phase and its combination with the partnering tool were actually very similar to the best solutions identified in the other 3 alliances.

- AURORA allowed the researchers to search by KEYWORDS, FILTER BY TYPE OF DEVICE and RESEARCH AREA
- **REUNITA** allowed for the same filters as AURORA but also included the option of searching by location (UNIVERSITY). All of those filters and search options were part of the T4ERI Partnering and Infrastructure-sharing tools as well.
- RIS4CIVIS was by far the most developed of all the tools/platforms/solutions studied.
 The portal for SHARING RESEARCH INFRASTRUCTURE was very similar to the one developed by T4ERI and there were only 2 new features the specific ACCESS

REQUIREMENTS for each and every one of the items (RI: infrastructure devices, databases, equipment, libraries, etc.) and the LINK TO USAGE REGULATIONS, again specific to each Research Infrastructure provided.

The best practice identified in the RIS4CIVIS alliance had already been considered by the T4ERI consortium as potentially to be added depending on the time and resources available. Those features were considered an advantage but it was also taken into consideration the fact that the system was already in place of the partner from the CIVIS alliance that was responsible for the task concerning the tool. This way, the alliance only needed to export an already existing and functioning system in place to the rest of the project partners. Their tool had, moreover, being developed by an external provider, not by the project partners themselves as in the case of T4ERI.

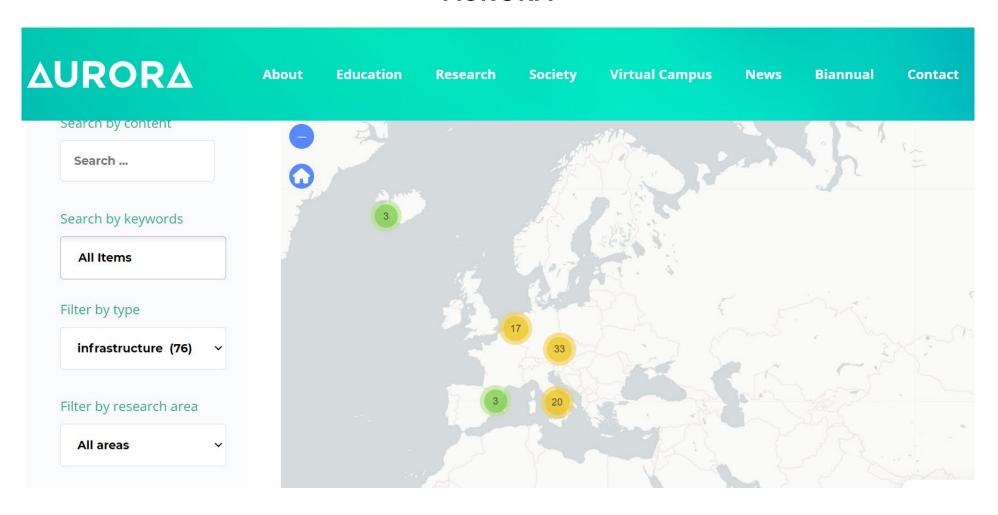
Likewise, the number of items listed in the infrastructure-sharing tool is much smaller (170) than in the case of Transform4Europe (490), which is a very large alliance that has actually brought onboard even more members and many new items are expected to be added to the infrastructure-sharing tool.

Table 1: Summary of the main features of the other alliances regarding infrastructure shared access

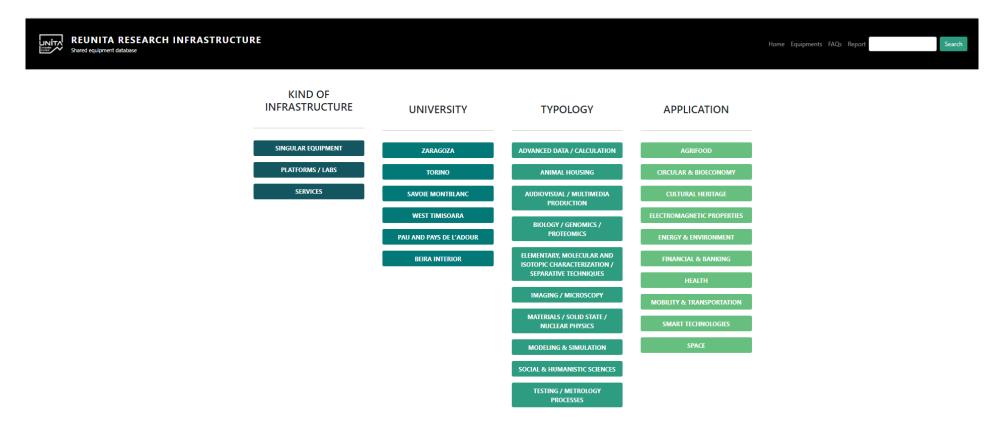
		y of the main feat	T		<u> </u>		
Alliance	Duration	Coordinator	Infrastructure sharing tool	1 / .	Project live	Features	Link
EU-CONEXUS RESEARCH FOR SOCIETY	1 March 2021 to 29 Feb 2024	La Rochelle Université	No	Research platform	Yes	Good example of Open Science	https://eu-conexus.openaire.eu/
EUTOPIA-TRAIN Transformation of Research and Innovation	,	Goeteborgs Universiteit	No	Research platform	No	Partnering Tool	https://www.partneringtool.eutopia- university.eu/
EUGLOHRIA European Alliance for Global Health – Transformation Through Joint R&I Action	,	Université Paris- Saclay	No	Repository - Handbook with partners inventory	No	A detailed Handbook	https://www.euglohria.eu/r-and-i-in- action/repository/handbook-of- operational- regulations/2022_06_30_Deliverable%203 .3_Handbook%20of%20operational%20reg ulations.pdf
FITFORTHEM	1 January 2021 to 31 Dec 2023	Johannes Gutenberg Universität Mainz	No	Research platform	No	N/A	https://api.forthem- alliance.eu/fileadmin/user_upload/forthem/ FIT_FORTHEM/Updates/4.7Joint_strategi c_action_plan_for_sharing_research_reso urces1pdf
REUNICE	1 October 2021 to 30 Sep 2024	Politechnika Poznanska	No	Research platform	Yes	N/A	https://eunice-university.eu/eunice- partners-research-umbrella/
EELISA	,	Universidad Politecnica de Madrid	No	Catalogue - developing	Yes	Complete catalogue of facilities	https://eelisa.eu/wp- content/uploads/2023/06/ABOUT-EELISA- CATALOGUE-OF-FACILITIES.pdf
ENHANCERIA	2021 to 31 August 2024	Norges Teknisk- Naturvitenskapeli ge Universitet NTNU	Not found	Catalogue (according to Task2)	Yes	N/A	https://enhanceuniversity.eu/strengthening -research-infs/
AURORA	1 October 2021 to 30 September 2024	Hasloki Islands	YES	Research infrastructure tool	Yes	Tool for: – data – expertise –infrastructure – networks	https://aurora-universities.eu/research- resources/
REUNITA	2021 to 31	Université de Pau et des Pays de l'Adour,	YES	Research infrastructure tool	Yes		https://reunitaresearchinfrastructure.i3a. es/

					interesting categories	
RIS4CIVIS: Research and Innovation Strategy for CIVIS	1 January 2021 to 31 Dec 2023	YES	Research infrastructure tool	No		https://civis.opendatasoft.com/explore/d ataset/module-2-research- infrastructure copy/table/?disjunctive.area_lockup_for _ods&disjunctive.erc_panel&disjunctive. subpanel_ods

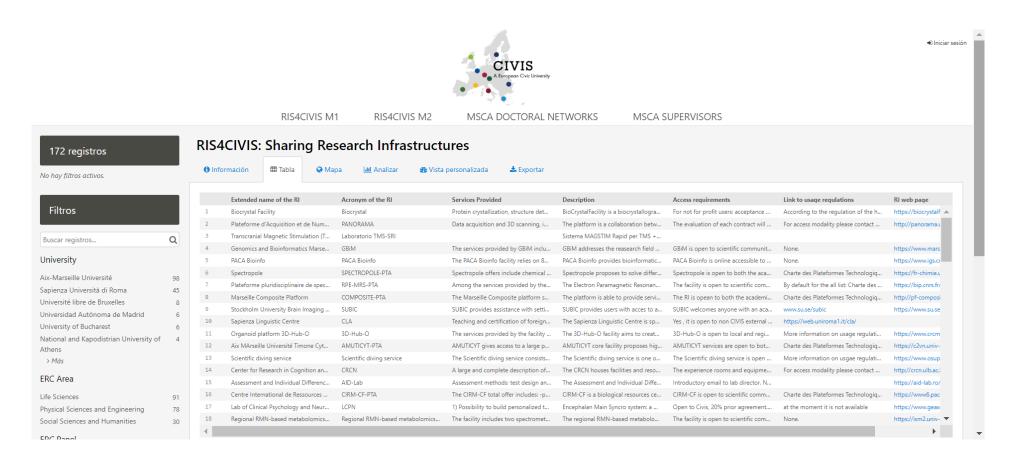
AURORA



UNITA - REUNITA



CIVIS - RIS4CIVIS



Acknowledgments

The T4ERI WP2 partners would like to sincerely thank all partners for their participation in this pilot phase and for the feedback provided.