Milestone 7.6: Final assessment of the pilot access concept and process

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Contents

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1 Introduction

This document delivers the third and final assessment of the TransNational Access provided in the context of the ACTRIS IMP project, which supports the implementation of the organizational, operational and strategic frameworks of ACTRIS.

This report reviews and condenses the analysis of TNA management activities performed during the entire period of the project (January 2020 – November 2023) offering a final assessment. The document is structured into 7 different sections. After this introduction, section 2 recaps the objectives assigned to TNA activities in the IMP project, and section 3 describes how the management system has evolved from the first TNA call to the last one. Section 4 gives the overall summary of the transnational access provision at the IMP facilities, with the feedback from the main actors involved in the transnational access provision (users, providers, reviewers, management team) analysed in section 5. Finally, section 6 offers reporting on the suggested KPIs and section 7 provides the list of references consulted.

2 Objective and scope of the ACTRIS IMP TNA pilot

In view of the overall objective of ACTRIS IMP to accompany the transition from the preparatory to the operational phase of ACTRIS and support the full implementation of ACTRIS components, functionalities and services, limited pilots of access provision used the trans-national access tool for testing and improving user services as well as the access process.

The ACTRIS IMP TNA pilots were limited to specific services at 11 ACTRIS facilities comprising Topical Centres (TCs), the Data Centre (DC), National Facilities (NFs), or combined ACTRIS Facilities (NF-TC) located in 10 different countries. Such pilots allowed testing of the workflow and procedures designed for SAMU (the Service and Access Management Unit of the ACTRIS Head Office) centralized access management as well as the research, technical and data services for the users to access at the facilities in different modalities (on-site, remote, hybrid).

The overall objective of the activity was to assess and improve both the service provision and the access process involving the key players (users, access providers, SAMU) to increase reliability, consolidate user trust and widen the user base. As a result of the pilot, SAMU had the possibility to correct design issues and shortfalls in the user interaction and access workflows detected during the tests.

3 Evolution of the access process implemented under ACTRIS IMP

Access to the 11 ACTRIS facilities participating in the IMP TNA pilot activity happened following the modalities and the access process management described in detail in IMP MS7.1 “Definition of the pilot access process to ACTRIS facilities” (see ref 4).

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The access process included the following main phases:

- TNA call opening and dissemination
- User application
- Eligibility check
- Feasibility check
- Application evaluation and selection
- Access to the Facility
- Post-access duties to ensure proper reporting of the activities by the user (final activity report, user feedback) and the provider (confirmation of access and certification of the units provided)

As anticipated in MS 7.1, the management of the process evolved during the project, with the transition to the use of a web tool to facilitate access-related tasks for all the actors involved (users, providers, TNA managers, reviewers, etc.) as a major change. Along with other minor corrections and adjustments, this shift was thoroughly described in IMP MS 6.9 "Results of the testing of the access and services provision system" (see ref. 5).

It is important here to underline that, as presented in section 5, all the changes made effectively contributed to improving the process and the service to the user, leading to an optimized implementation of the system for user access to ACTRIS services in WP6.

4 Summary of the Transnational Access activity to ACTRIS IMP stations

4.1 Quantity of access provided

ACTRIS Facility	*Estimated number of user projects*	*Actual number of projects (M48)*	*% project*	*Min quantity of access to be provided*	*Access provided (M48)*	*% access provided*	*Unit of access*
ACTRIS DC-ARES	3	**2**	**67%**	45	**45**	**100%**	SWD
CARS-ASP-FR	10	**20**	**200%**	10	**21**	**210%**	CAL
	3	-	**0%**	9	-	**0%**	UWD
CDPS-FTIR	3	**2**	**100%**	4	**4**	**100%**	DPS
SMEAR II	6	**2**	**33%**	30	**53**	**177%**	UWD
JFJ	4	**3**	**75%**	30	**80**	**267%**	DAY
Cabauw	6	-	**0%**	36	-	**0%**	UWD

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SBO	3	**7**	**233%**	45	**96**	**213%**	UWD
USRL	3	**1**	**33%**	40	**60**	**150%**	SWD
ACD-C/OGTAC-CC	2	**2**	**100%**	20	**30**	**150%**	DAY
SAPHIR-CiGas-FZJ	1	**6**	**100%**	5	**12**	**240%**	DAY
EUPHORE	2	**1**	**50%**	8	**5**	**63%**	DAY

Table 1 - ACTRIS facilities providing TNA, estimated number of projects and units of access, actual access units provided and projects realized

In the three TNA calls published during the IMP project, a total of 58 applications were submitted and processed, with 49 access projects retained for implementation.

The graph below (Figure 1) shows the number of proposals received and their acceptance at each stage of the evaluation process: following the application phase, the SAMU/TNA management team eligibility check, the feasibility check of access providers and the review.

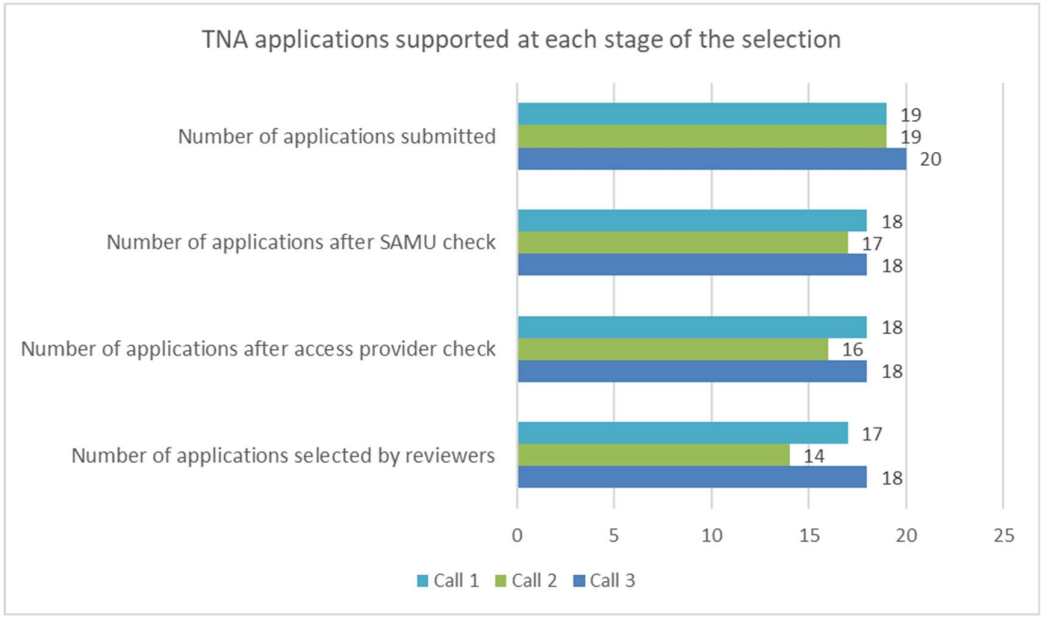

Figure 1 - Breakdown of the overall number of TNA proposals supported at each stage of the review process

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46 TNA projects were carried out, involving 80 users. Most TNA projects were proposed by new users (55% considering the individual, not the institution they are affiliated with), and exactly half by ACTRIS beneficiaries and half by external entities (50%-50%).

All ACTRIS IMP users came from the Earth sciences and Environment domain, with the majority of users being male (69%, Figure 2), expert scientists (63%, Figure 3) working mostly in university and public research organizations, with a small presence also from the private sector and the public sector (6% and 5% respectively, Figure 4).

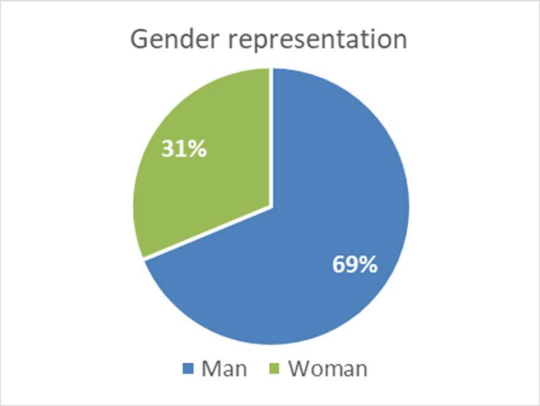

Figure 2 - ACTRIS IMP User gender representation

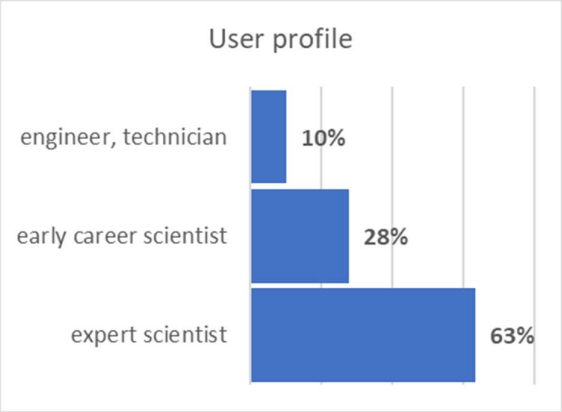

Figure 3 - ACTRIS IMP User profile

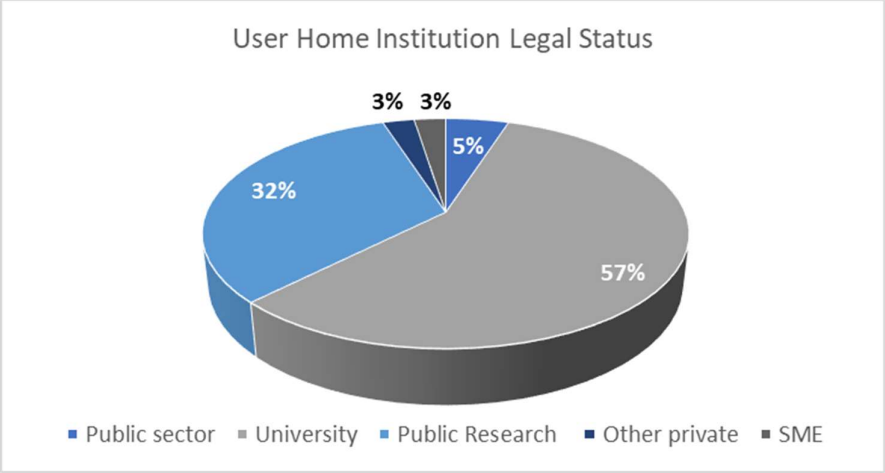

Figure 4 - ACTRIS IMP User home institution legal status

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Regarding the user origin, Figure 5 and Figure 6 below present respectively the nationality and country of affiliation, with 92% of IMP users working at institutions based in European member and associated states and 8% are from outside the EU (Australia, Argentina, Japan).

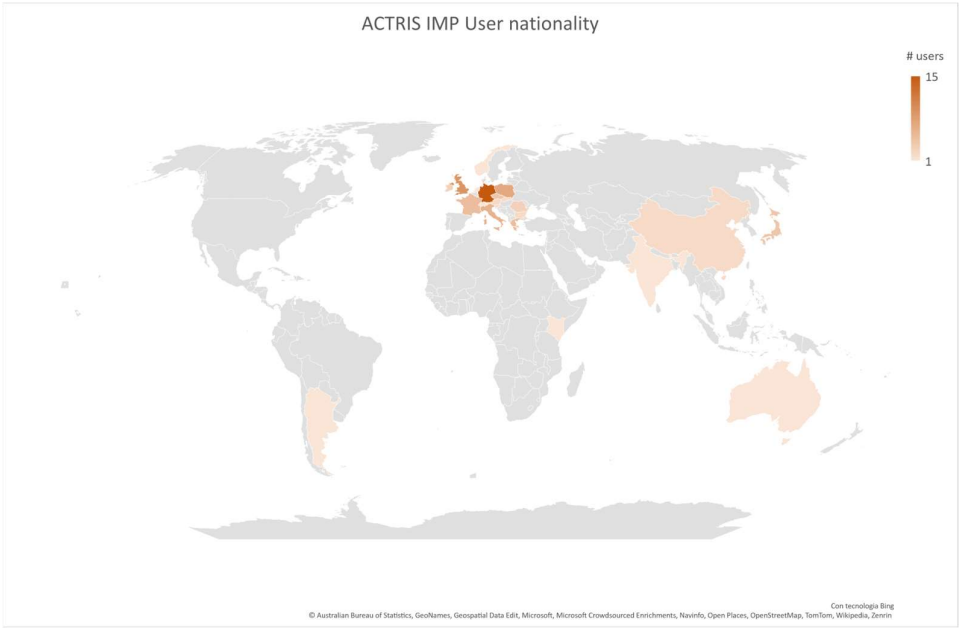

Figure 5 - ACTRIS IMP User nationality

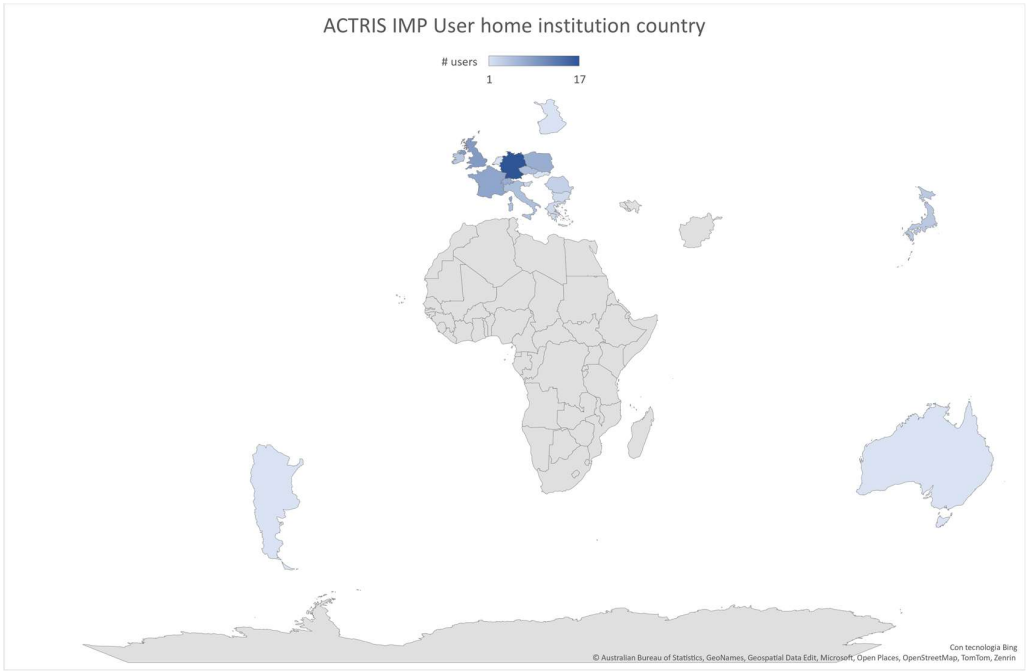

Figure 6 - ACTRIS IMP User affiliation

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Users mostly requested research and technological services (Figure 7) to access remotely (*Figure 8*) at Central Facilities (Figure 9). It is worth noting that, due to the COVID-19 pandemic, remote access was the only possible way of providing access for the first call and much of the second.

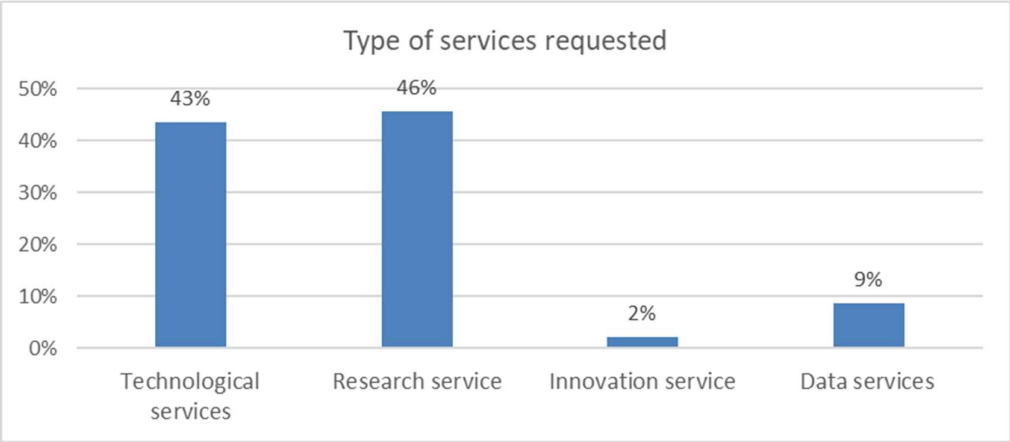

Figure 7 - ACTRIS IMP Type of services requested

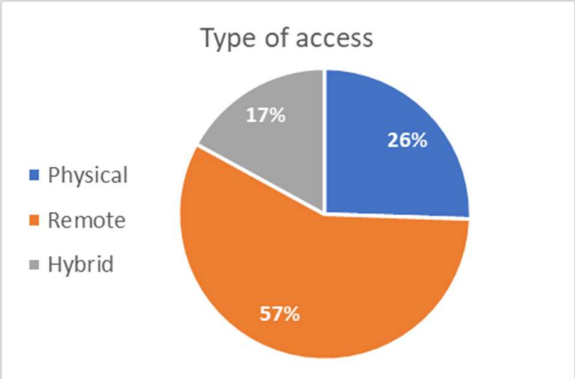

Figure 8 - ACTRIS IMP Type of access requested

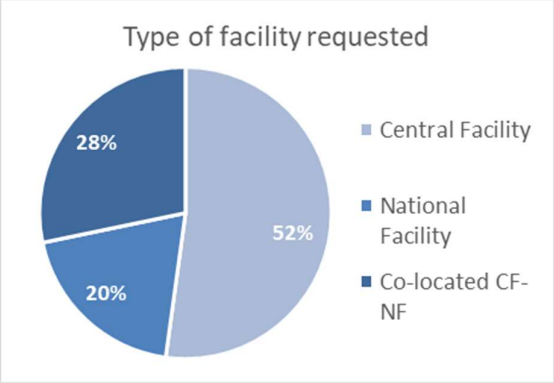

Figure 9 - ACTRIS IMP Type of facility requested

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4.2 TNA projects realized

Table 2 provides the complete list of the 46 TNA projects realized during the IMP project (January 2020 – December 2023).

#	Call	TNA ID	Applicant Institution Name	Title of the project	Host Facility/ies
1	C1	**CARS-3**	Institute of Electronics, Bulgarian Academy of Sciences	Joint ASP and LIDAR Observations of the Aerosol Field over Sofia City	**CARS-ASP-FR**
2	C1	**SMR-1**	Nagoya Uni	Offline characterization of the hygroscopic and light absorbing properties of organic aerosol over a boreal forest	**SMEAR II**
3	C1	**USRL-1**	Univ Tübingen	In-situ measurement and sampling of aerosol particles with unmanned air systems	**USRL**
4	C1	**ACD-1**	Uni College Cork	Burn Chamber experiments for Fire, Land and Atmospheric Remote sensing of EmissionS	**ACD-C/OGTAC-CC**
5	C1	**SBO-1**	KIT	Cloud in situ measurements of atmospheric ice nucleating particles at SBO	**SBO**
6	C1	**CARS-4**	Uni of Salento	Lecce_University Sun-Sky-Lunar Photometer Calibration and Maintenance	**CARS-ASP-FR**
7	C1	**CARS-5**	PMOD/WRC	AERONET – GAWPFR intercomparison at Davos	**CARS-ASP-FR**
8	C1	**CARS-6**	TNO	Calibration TNO Aeronet sunphotometer	**CARS-ASP-FR**
9	C1	**CARS-7**	Università degli Studi dell'Aquila (UniAQ)	Potenziamento della componente italiana della Infrastruttura di Ricerca Aerosol, Clouds and Trace Gases Research Infrastructure Lunar-Sky-Solar Photometer CALIBRATION	**CARS-ASP-FR**
10	C1	**CARS-8**	UK Met Office	AERONET sun photometer calibration of UK Met Office instruments.	**CARS-ASP-FR**
11	C1	**SMR-3**	Leipzig Uni	Combining Radar and Imagining Observations for Snowfall measurements	**SMEAR II**
12	C1	**CDPS-1**	National Institute for Environmental Studies	Demonstration of the FTIR central processing system for NIES	**CDPS-FTIR**

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13	C1	**CARS-9**	UCC	Contribution of sun photometer data from University College Cork to AERONET	**CARS-ASP-FR**
14	C1	**CDPS-3**	University of Wollongong	Demonstration of the FTIR central processing system for UOW	**CDPS-FTIR**
15	C2	**CARS1**	Uni of Warsaw	UoW Calibration	**CARS-ASP-FR**
16	C2	**CARS2**	TROPOS	ACTRIS-D OSCM	**CARS-ASP-FR**
17	C2	**CARS3**	TROPOS	LACROS mobile platform for aerosol and cloud monitoring	**CARS-ASP-FR**
18	C2	**CARS4**	Iuniversity of Manchester	Capel Dewi Atmospheric Observatory (ongoing measurements)	**CARS-ASP-FR**
19	C2	**DC-ARES1**	Czech Hydrometeorological Institute	Lidar Processing using SCC	**ACTRIS DC-ARES**
20	C2	**CARS6**	Institute of Geophysics PAS	CIMEL #860 calibration	**CARS-ASP-FR**
21	C2	**CARS7**	Slovak Hydrometeorological Institute	Optical properties of aerosols in Poprad-Gánovce area	**CARS-ASP-FR**
22	C2	**EUPH1**	University of Bayreuth	TVOCX: Training on VOC oXidation products analysis	**EUPHORE**
23	C2	**CARS9**	Institute of Electronics, Bulgarian Academy of Sciences	AERONET Calibration and Maintenance of IE-BAS Sofia Sun/Sky/Lunar Photometer	**CARS-ASP-FR**
24	C2	**JFJ1**	Aerosol doo	Carbon balance field campaign in free troposphere with intermittent planetary boundary layer influence	**JFJ**
25	C2	**JFJ2**	Uni of York	Carbon balance field campaign in free troposphere with intermittent planetary boundary layer influence	**JFJ**
26	C2	**CARS10**	UK Met Office	AERONET sun photometer calibration of UK Met Office instruments.	**CARS-ASP-FR**
27	C2	**JHJ3**	IMT NE	Carbon balance field campaign in free troposphere with intermittent planetary boundary layer influence	**JFJ**
28	C2	**CARS11**	Freie Universität Berlin	Freie Universität Berlin Aeronet-Calibration 2022	**CARS-ASP-FR**
29	C3	**SBO1**	FMI	1st ECCINT CIS intercomparison for LWC	**SBO**
30	C3	**SBO2**	Institute of Atmospheric Physics -CAS	1st ECCINT CIS intercomparison for LWC	**SBO**
31	C3	**SBO3**	ETH Zurich	1st ECCINT CIS intercomparison for LWC	**SBO**

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32	C3	**SBO4**	ICPF	1st ECCINT CIS intercomparison for LWC	**SBO**
33	C3	**SBO5**	KIT	1st ECCINT CIS intercomparison for LWC	**SBO**
34	C3	**SBO6**	NCSR D	1st ECCINT CIS intercomparison for LWC	**SBO**
35	C3	**CARS1**	Poznan University of Life Sciences	Calibration service of the new CIMEL CE318-T sunphotometers.	**CARS-ASP-FR**
36	C3	**CARS2**	Institute of Geophysics PAS	CIMEL #860 calibration	**CARS-ASP-FR**
37	C3	**CARS3**	CNR-ISP	CIMEL 318 initial calibration (CIMIC)	**CARS-ASP-FR**
38	C3	**SAPHIR1**	CNR-ISAC	First ACTRIS NO/NO2 intercomparison campaign	**SAPHIR**
39	C3	**SAPHIR2**	UAIC	First ACTRIS NO/NO2 intercomparison campaign	**SAPHIR**
40	C3	**SAPHIR3**	Uni Nottingham	First ACTRIS NO/NO2 intercomparison campaign	**SAPHIR**
41	C3	**SAPHIR4**	ICARE	First ACTRIS NO/NO2 intercomparison campaign	**SAPHIR**
42	C3	**SAPHIR5**	IMT NE	First ACTRIS NO/NO2 intercomparison campaign	**SAPHIR**
43	C3	**SAPHIR6**	Uni of York	First ACTRIS NO/NO2 intercomparison campaign	**SAPHIR**
44	C3	**ACDC1**	Tofwerk	STRUCTURE	**ACD-C/OGTAC-CC**
45	C3	**DCARES1**	Meteoswiss	SPALNA	**ACTRIS DC-ARES**
46	C3	**CARS4**	UW	Periodic calibration of the sunphotometer #359 for ACTRIS-PL	**CARS-ASP-FR**

Table 2- List of TNA projects realized during the ACTRIS IMP

5 Main feedback collected

5.1 User feedback

The following graphs summarize the ACTRIS IMP TNA lead applicants' answers to questions in the feedback questionnaire users had to complete as part of the post-access duties, along with the activity report. At the time of writing this Milestone, 31 user feedback questionnaires were received from the TNA projects' PIs.

Users assigned scores on a scale ranging from 0 to 5, with corresponding descriptors as follows:

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Score	Performance indicator
0	Not evaluable or inadequate
1	Poor
2	Fair
3	Good
4	Very Good
5	Excellent

Table 3 - Score scale and descriptors

The charts below show the average scores assigned by users to questions regarding access management services (publicity and communication of access opportunities, information and support for applicants, application form and procedure, amount of post-access documentation required, interaction and support from SAMU/TNA management team, in Figure 10), and facilities' services accessed (information and support for organizing the visit, on-site support, quality of the service, overall service provided by IMP,

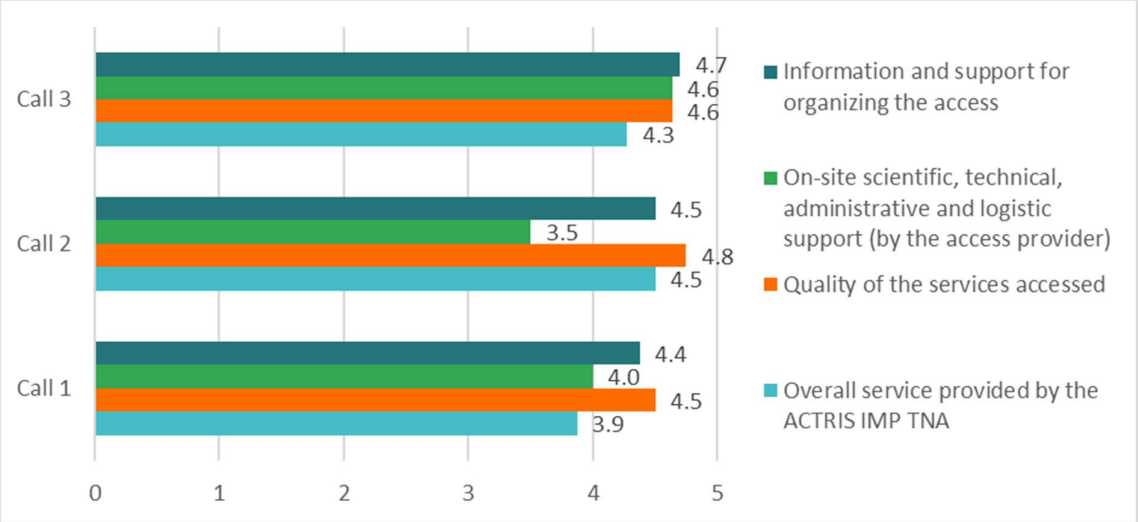

Figure 11), segmented by the respective call for proposals.

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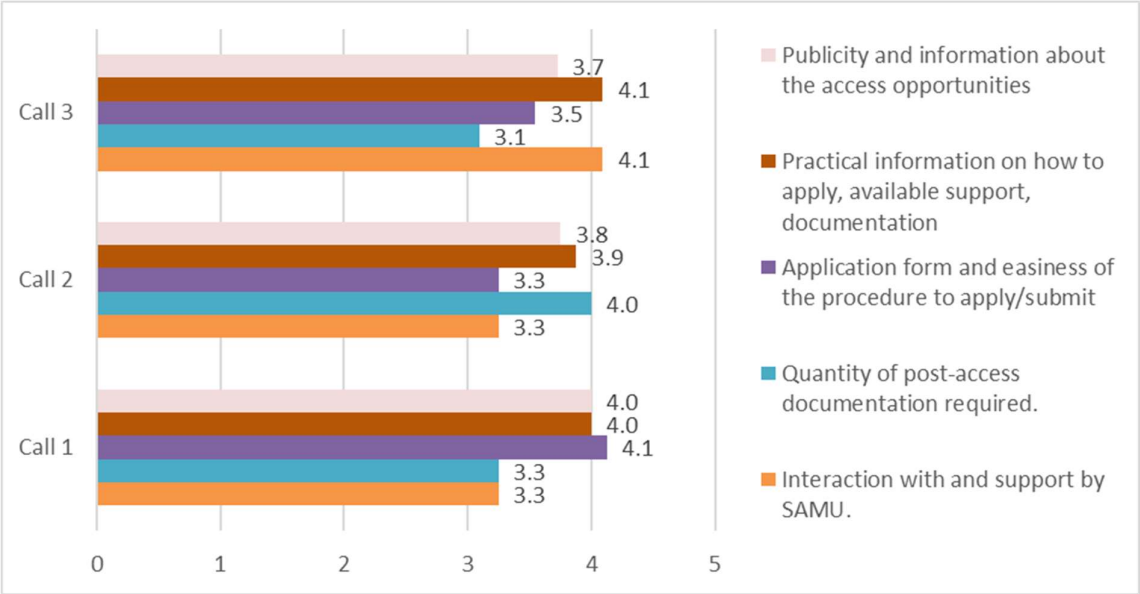

Figure 10 - Average value of ratings for feedback questions on the access management services given by users

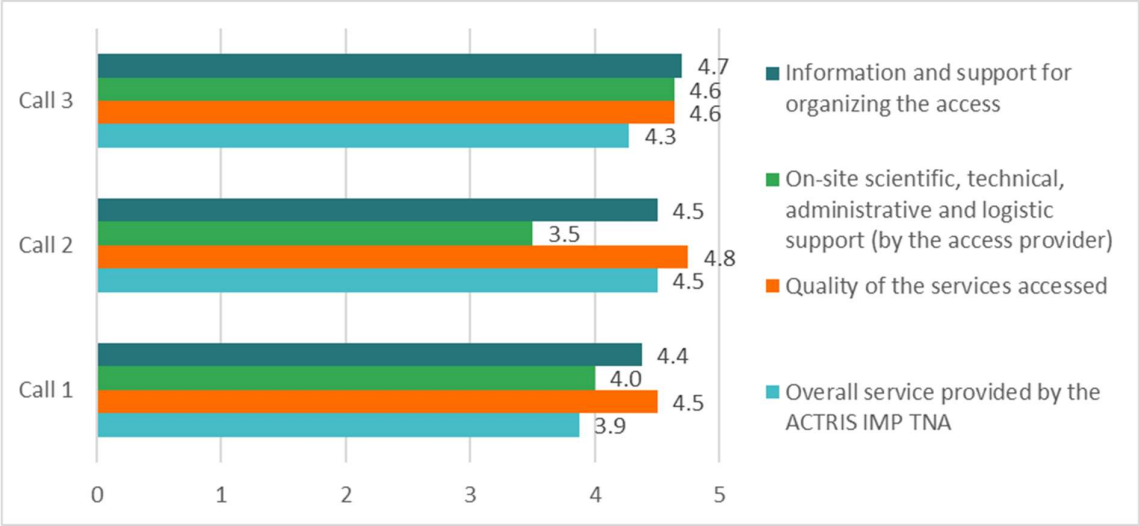

Figure 11 - Average value of ratings for feedback questions on the facilities' services accessed given by users

Focusing on the feedback on the access management services first, Figures 12-16 that follow present in detail the user evaluations of the single aspects considered (communication and information, information

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and support on the application phase, application form and submission procedure, post-access duties and requirements, interactions and support received by SAMU/TNA management team).

Communication and information activities were considered satisfactory by over 90% of users (excellent for 32.3%, very good for 45.2% and good for 16.1%) as presented in Figure 12, which also provides the detail of feedback per call.

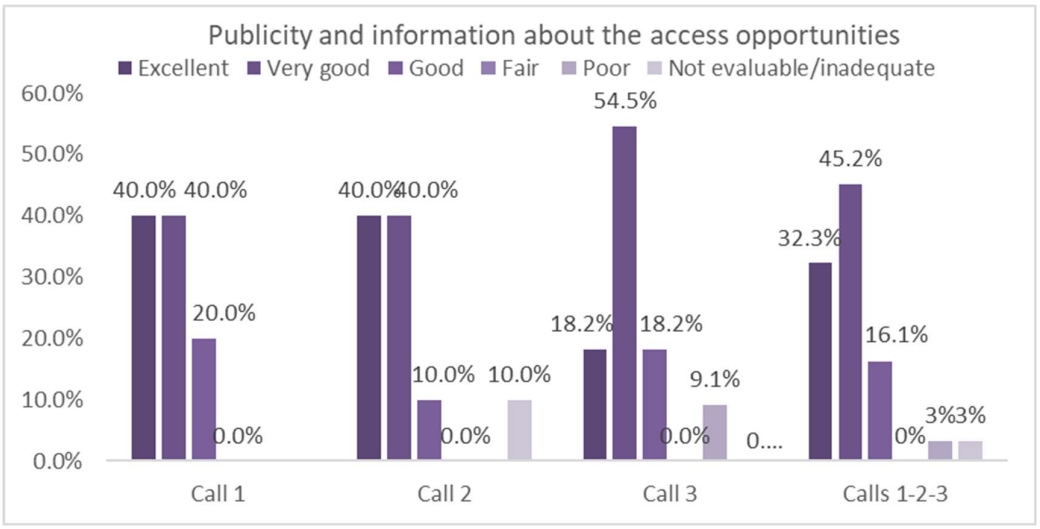

Figure 12 - User feedback on communication and information about the access opportunities (in % of answers)

The great majority of IMP Users evaluated positively (from excellent to good) the practical information on how to apply, available support and documentation, as Figure 13 below shows.

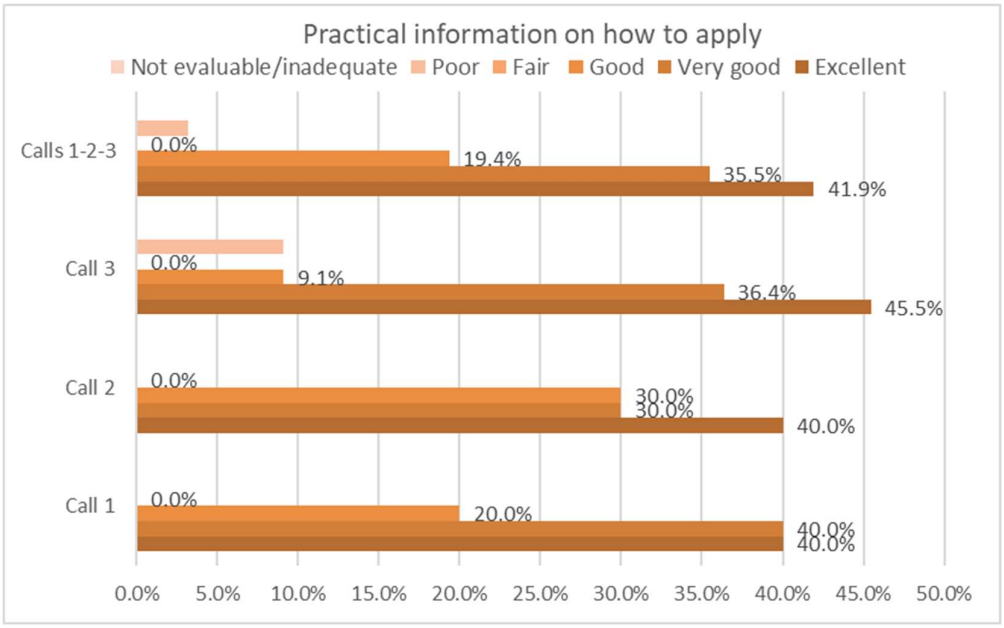

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Figure 13 - User feedback on practical information on how to apply, available support and documentation in % of answers

Figure 14 below displays IMP user feedback on the application form and process. It is worthwhile to consider the details of the feedback given for the different calls for TNA, which used distinct forms and procedures for submitting access requests:

- Call 1: offline application form, with a standard word template submitted via email
- Call 2: online application form, via an online form builder and application submission tool
- Call 3: online application form, using the ACTRIS PASS

The main content, information requested and fields to be filled in by the applicants were the same, the main difference being the submission procedure.

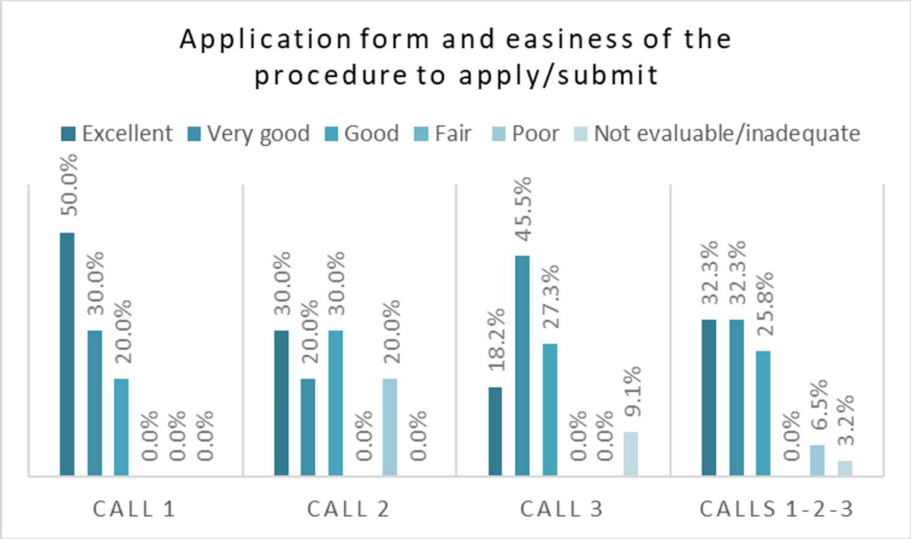

Figure 14 - User feedback on the application form and easiness of the procedure to apply, in % of answers

The quantity of post-access documents received good to very good feedback from most IMP users, as presented in Figure 15.

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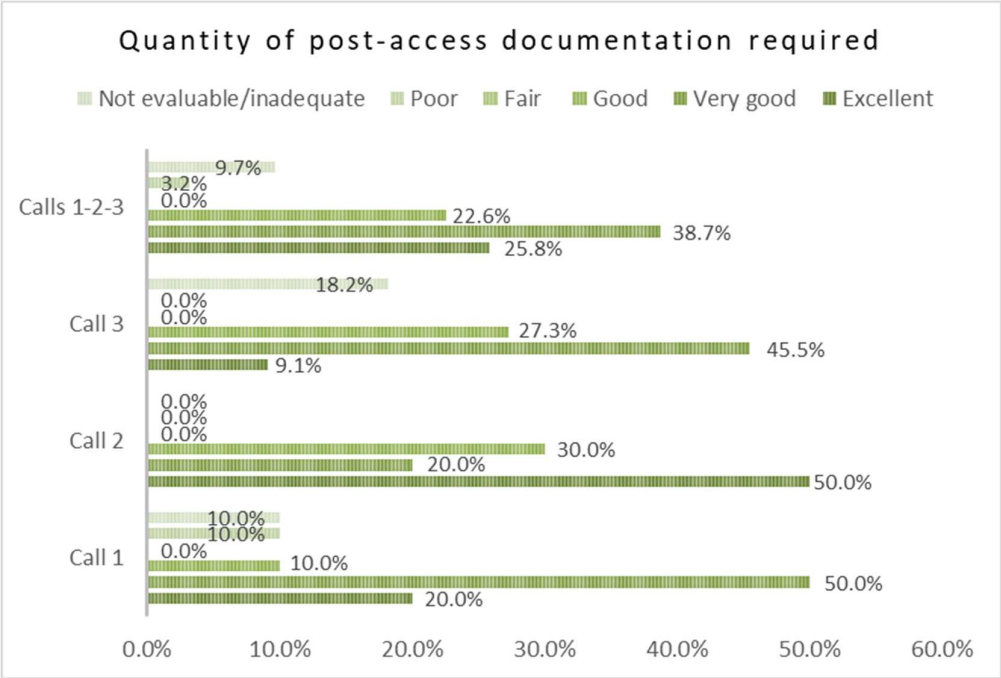

Figure 15 - User feedback on the quantity of post-access documentation required

Finally, the interaction with and the support received from the SAMU/TNA Management Team were positively evaluated by the majority of users (excellent for 41.9 %, very good for 25.8%) as *Figure 16* shows.

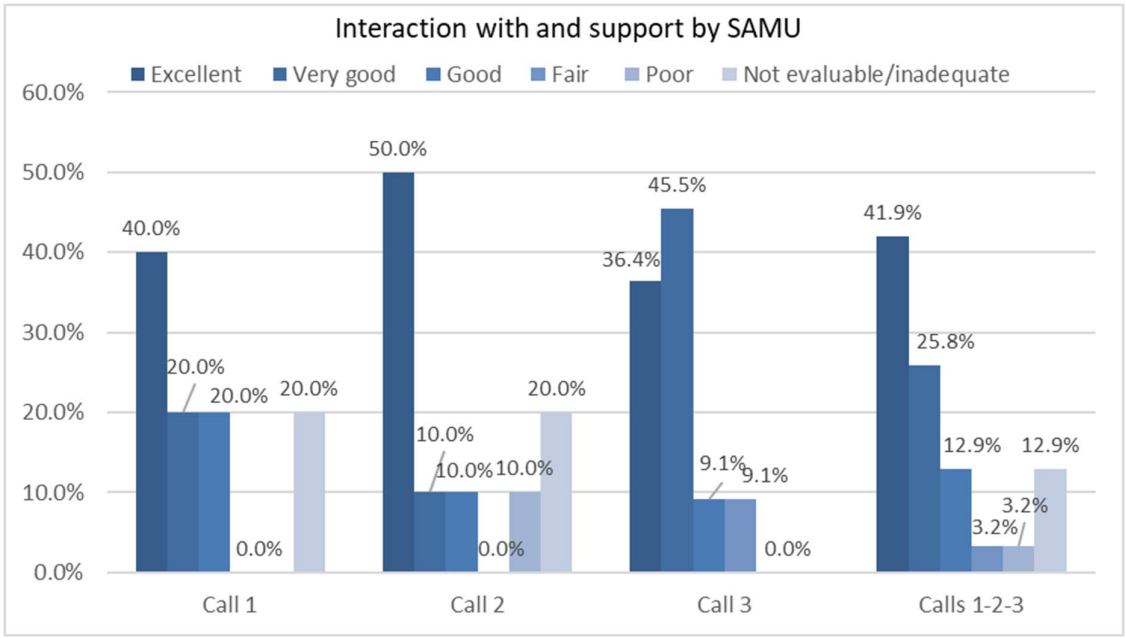

Figure 16 - User feedback on the interaction with and support by SAMU/TNA management team, in % of answers

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Coming to the feedback on the research, innovation, technological and data services accessed at the Facilities, Figures 17-20 give the details of users' evaluations on the single aspects analysed (information and support from the provider in organizing the access, quality of the service accessed; scientific, technical, administrative and logistic support received on-site by the access provider; overall service provided by the ACTRIS IMP TNA).

IMP users expressed very positive evaluations of the support received from providers to arrange the TNA, as illustrated in Figure 17, as well as of the scientific, technical, administrative, and logistic support received on-site during access, depicted in Figure 18. Regarding the latter, it is important to clarify that the 0 scores assigned in some cases refer to services, like calibrations, accessed remotely. In these cases, on-site support was not evaluable and was consequently scored 0.

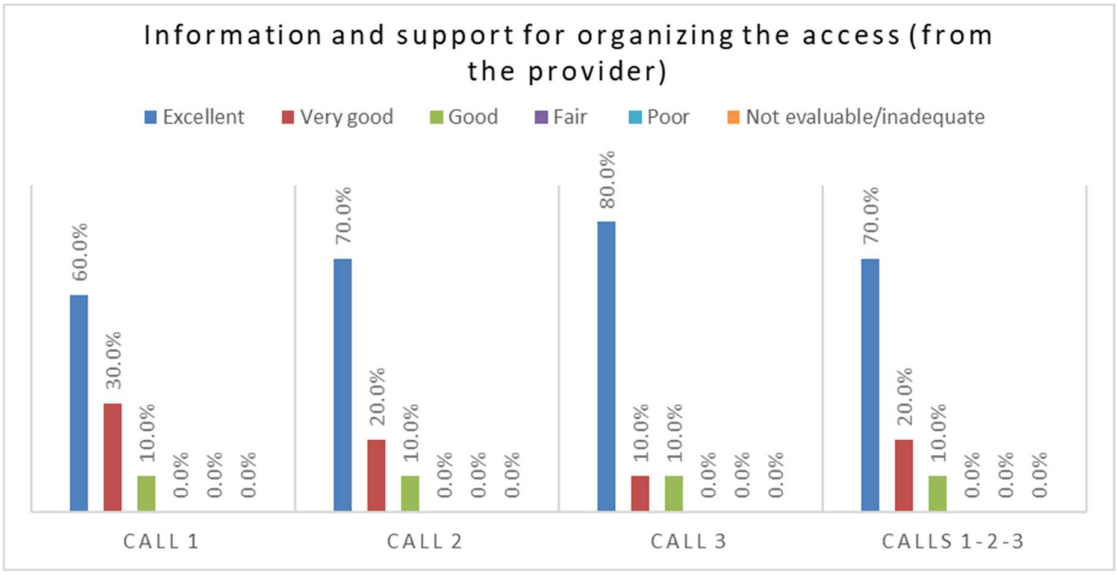

Figure 17 - User feedback on the information and support for organizing the access received from the provider, in % of answers

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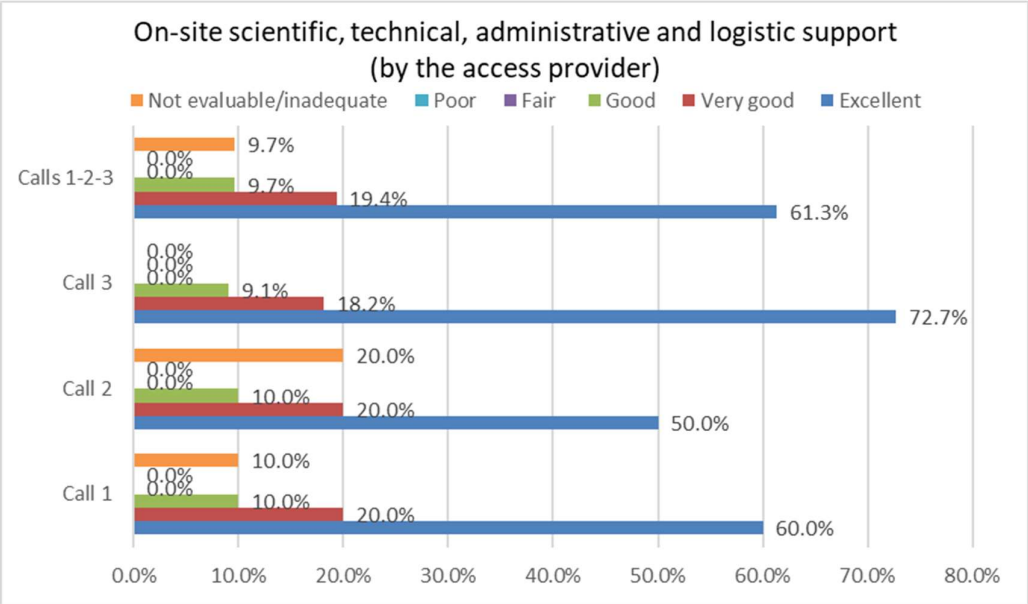

Figure 18 - User feedback on the on-site scientific, technical, administrative and logistic support received from the provider, in % of answers

The quality of the services accessed at the facilities was very much appreciated by the users: excellent for more than 74% of them, very good for more than 19%, and good for the remaining 6.5% as depicted in Figure 19.

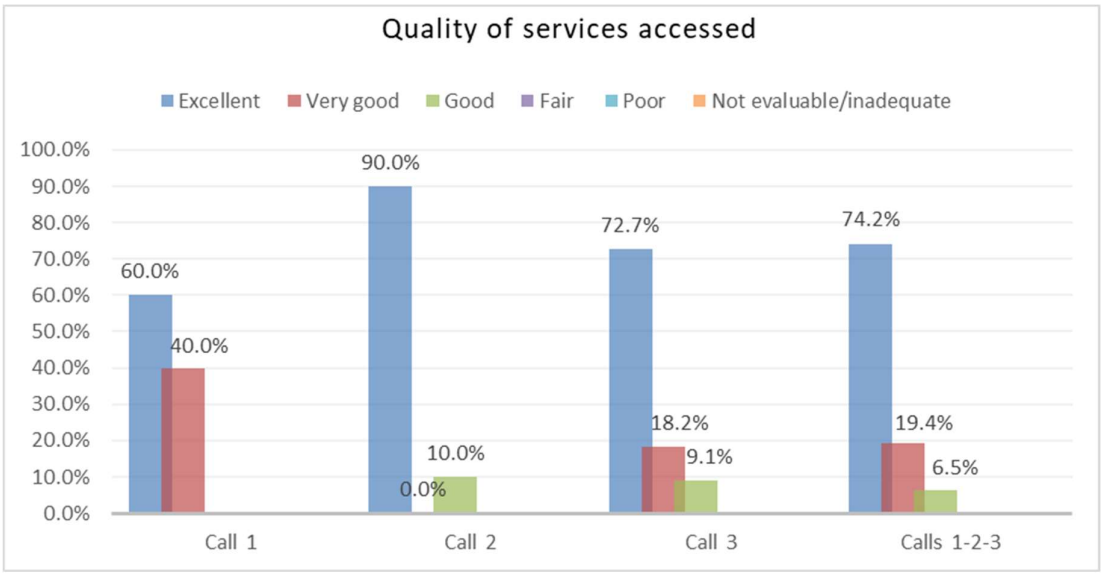

Figure 19 - User feedback on the quality of the services accessed, in % of answers

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In conclusion, the overall service provided by the ACTRIS IMP TNA was considered very positive by the users. As Figure 20 displays, 55% of users rated it excellent, 29% very good and more than 12% good.

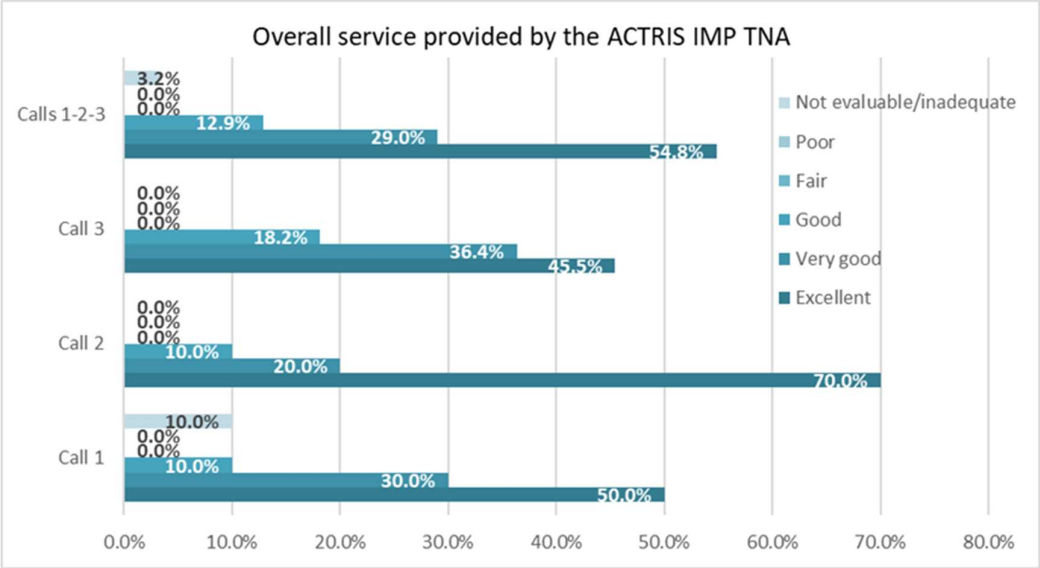

Figure 20 - User feedback on the overall service provided by the ACTRIS IMP TNA, in % of answers

5.2 Provider feedback

The following graphs summarize the TNA providers' answers to the questionnaire they were asked to complete to provide thorough feedback on their access experience during the project as well as opinions on the access process being tested. Nine feedback questionnaires were received from the IMP TNA providers. Providers assigned scores on a scale ranging from 1 (very negative) to 5 (very positive).

The chart below (Figure 21) shows the average scores assigned by providers to questions regarding access management services: information provided on the website, interaction between SAMU/TNA

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management team and providers, interactions between users and providers, and overall assessment of the TNA process.

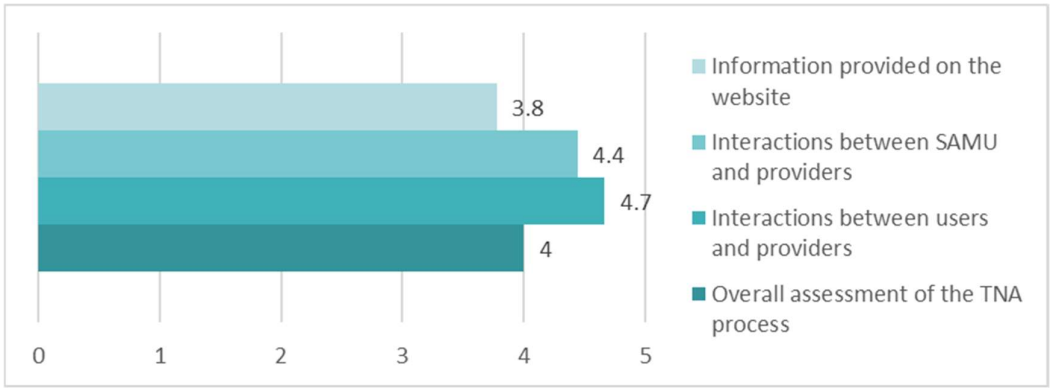

Figure 21 - Average value of ratings for feedback questions on the access process

TNA providers' overall assessment of the TNA process is quite good (very positive for 22%, positive for 56% and average for 22%)

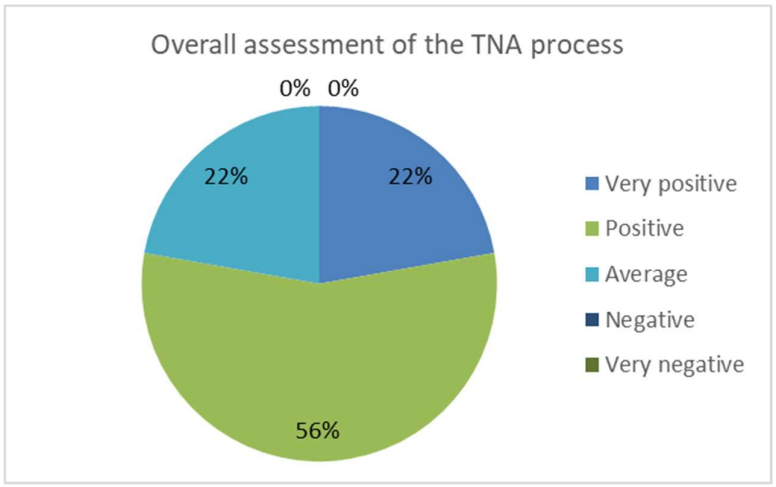

Figure 22 - Provider feedback on the overall TNA process, in % of answers

Figure 23 displays that the information on TNA provided on the website is generally well-considered by the vast majority of providers (positive for 67%, very positive for 11%).

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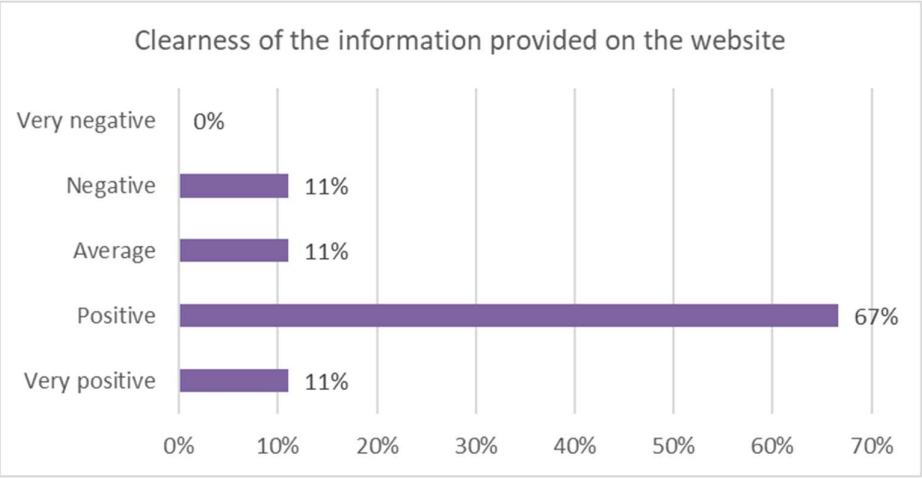

Figure 23 - Provider feedback on the clearness of the information provided on the website, in % of answers

Figure 25 below illustrates feedback from providers regarding the shift to online TNA management. The responses appear predominantly balanced, with a noteworthy 88% expressing satisfaction or neutrality towards the new system. It's worth noting that only a minimal 12% found the new process to be somewhat more tedious and 11% declared that their users reported issues when applying for TNA (*Figure 24*).

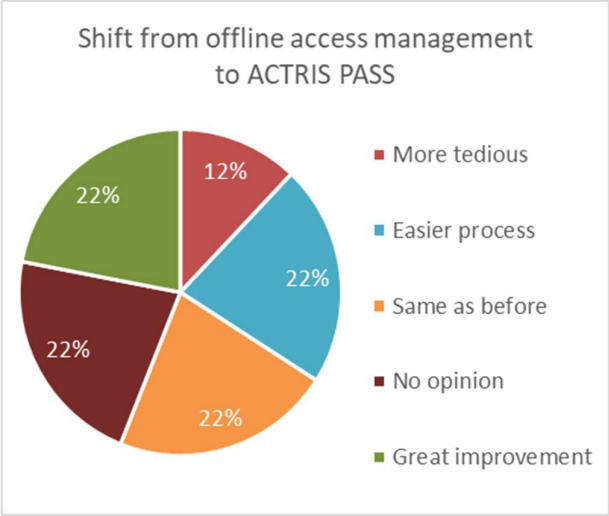

Figure 25 - Provider evaluations of the shift from offline access management to ACTRIS PASS

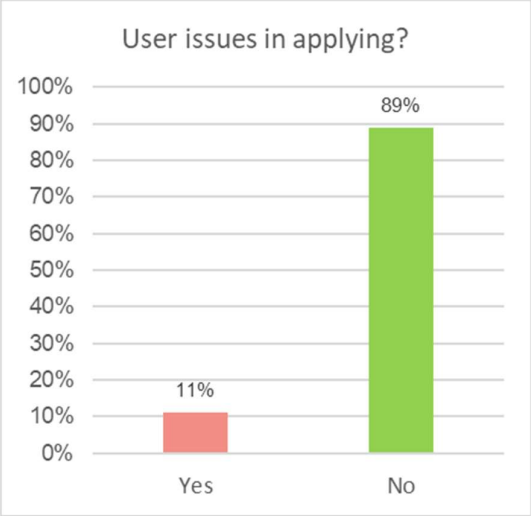

Figure 24 - User issues in applying reported to providers

Providers' feedback on the interactions with the users and with the SAMU/TNA management team is very satisfactory, as Figure 26 and Figure 27 respectively present.

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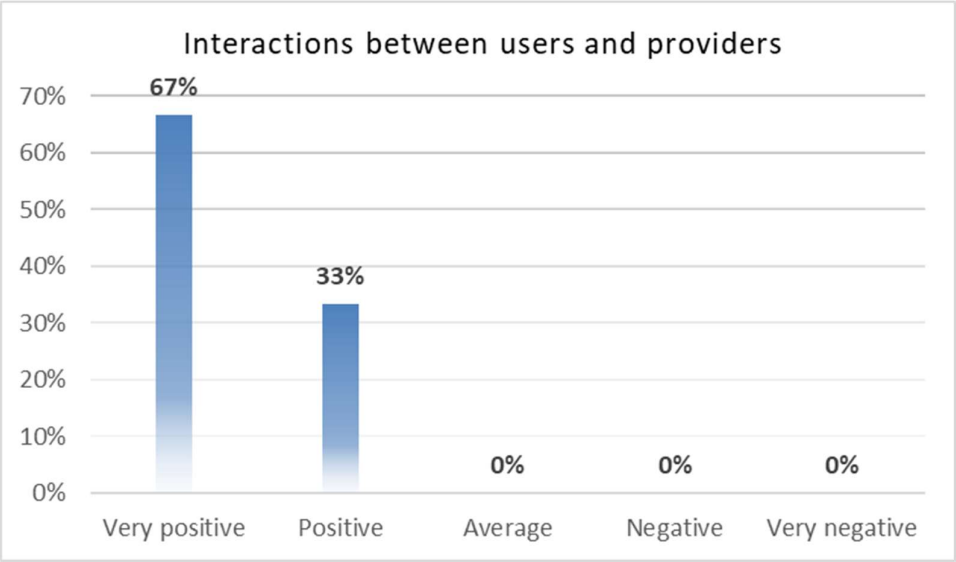

Figure 26 - Provider feedback on the interactions between users and providers, in % of answers

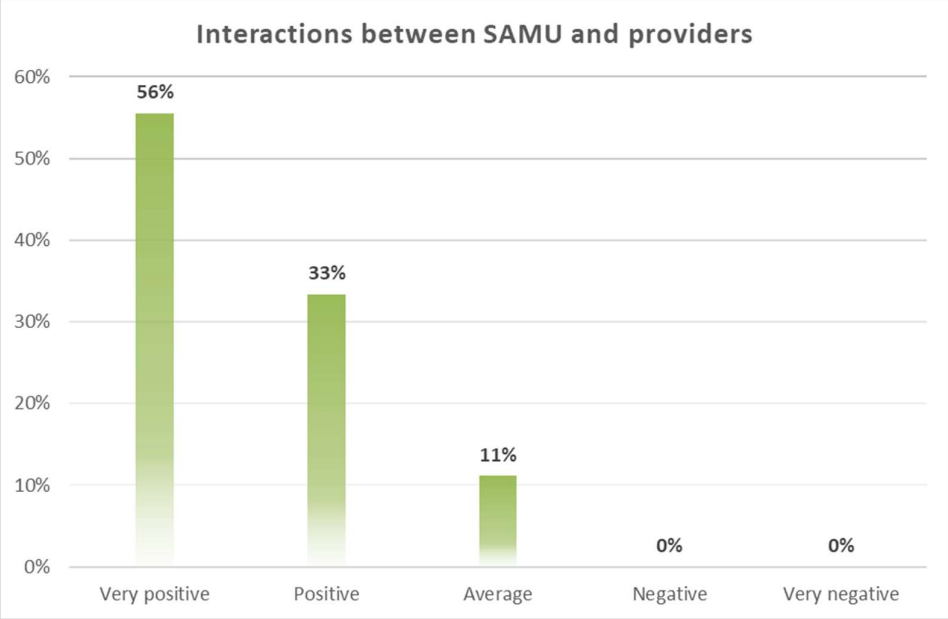

Figure 27 - Provider feedback on the interactions between SAMU/TNA management team and providers, in % of answers

Figure 28 below visually captures the key advantages for providers resulting from the TNA activities, providing insights into the primary areas where benefits are perceived.

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Figure 28 - Benefit of access for access providers

Finally, Figure 29 below lists the main challenges faced by providers during the TNA activities.

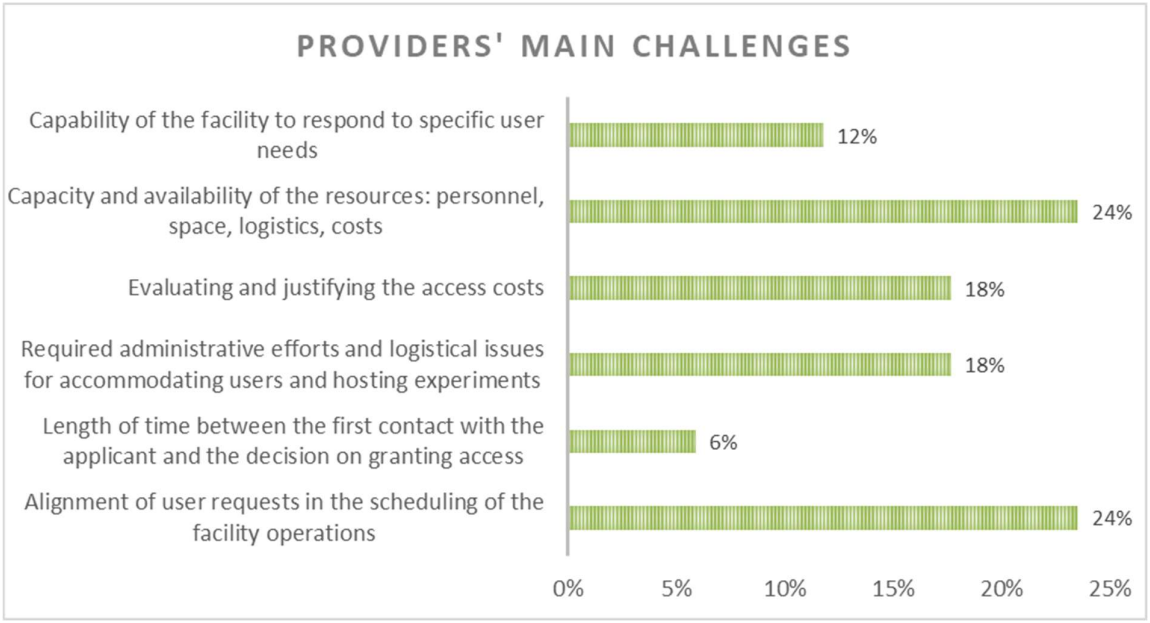

Figure 29 - Main challenges reported by providers concerning the TNA activities, in % of answers

5.3 Reviewer feedback

The feedback received from reviewers, gathered through email exchanges and discussions during various meetings, has been positive regarding the transition from offline review forms to an online format. Reviewers have consistently highlighted the user-friendly nature of the PASS, emphasizing its ease of use and accessibility. However, a common concern expressed by the reviewers pertains to the fact that the

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reviews they provide are not retained in their reviewer dashboard once the application progresses to the subsequent stages of the workflow. While this limitation has been acknowledged as a downside, a viable solution has already been identified within the project through the TNA Team. The team offers copies of the reviews upon request, demonstrating a proactive approach to address the issue.

Nonetheless, considering the importance of a seamless workflow for both reviewers and SAMU, exploring alternative solutions in the future could significantly enhance the overall experience. Identifying a more integrated and automated approach to preserve reviewer feedback throughout the application workflow would not only address the current concern but also contribute to a more efficient and streamlined process for all stakeholders involved.

Reviewers praised also the development of distinct, tailored forms designed for both providers' feasibility assessment and reviewers' merit evaluations, which were a result of the effort to tailor the evaluation process for both providers and reviewers, accommodating their unique perspectives, interests and requirements.

The feedback offered by reviewers regarding the evolution of evaluation criteria and scoring methods tested during the transition from the initial call to the latest one was positive as well. Refinements made over successive calls seem to have introduced improvements in the clarity, precision, and relevance of the evaluation process. This positive feedback underscores the effectiveness of the iterative approach taken to enhance the evaluation system, ensuring that it aligns more closely with the reviewer input and fosters a robust and effective review process.

5.4 TNA management team feedback

The possibility to test likely solutions and alternatives as well as tools, formats and processes throughout the access evaluation cycle was a great opportunity for the SAMU/TNA Management. This comprehensive testing phase allowed SAMU to gain valuable insights into the strengths and areas for improvement within the system for user access to ACTRIS facilities. The team found particular value in the diverse feedback received from the main stakeholders involved in the access process.

Handling and processing the feedback presented challenges at times, as divergent perspectives were considered. However, this constructive process proved instrumental in achieving positive outcomes, allowing the team to learn, adapt, and enhance the entire access management framework. The challenging aspects of dealing with feedback ultimately contributed to a richer understanding of user experiences, provider expectations, and reviewer perspectives. The collective effort to navigate these challenges resulted in significant improvements, fostering a culture of continuous learning, growth, and innovation within the Access Management Team.

The main SAMU/TNA management team feedback on the transition to PASS is reported in IMP MS6.9.

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6 Access metrics and suggested KPIs

The groundwork for establishing a comprehensive framework to measure, assess, and enhance ACTRIS access activities commenced and significantly evolved during the ACTRIS Preparatory Phase Project, culminating in the definition of key performance indicators (ACTRIS-PPP, MS26). This document lays a solid basis for identifying essential indicators to measure, monitor, and track various elements of access and service provision. Table 4 presents the complete set of chosen access metrics. Each metric has been selected to offer meaningful insights into access performance, efficiency, and impact, drawing from experience measuring access within the IMP and ATMO-ACCESS projects.

A set of Key Performance Indicators (KPIs) was then chosen among the above metrics to denote and assess the performance of service provision and improve the access process based on the resulting indications and feedback from the main actors involved in the process.

KPIs are indicated in Table 5.

#	ACCESS METRIC (Indicator)	Value type	Definition
1	ACTRIS Service Catalogue traffic	quantitative	Measure of the visibility of services and of the Catalogue visibility
2	ACTRIS Science and User Forum Traffic	quantitative	Measure of forum's visibility and attractiveness
3	Number of user helpdesk requests	quantitative	Measure of user interest
4	Number of user helpdesk requests solved	quantitative	Measure of capacity for supporting users
5	Number of services available to users	quantitative	Measure of RI service capacity
6	Number of services requested by users	quantitative	Measure of user demand
7	Number of services provided to users	quantitative	Measure of operational capacity for access provision, user selection, successful completion of the service provision
8	Number of requested services by type (research/innovation, technical, training)	quantitative	Measure of the interest and attractiveness of the different types of services
9	Number of provided services by type (research/innovation, technical, training)	quantitative	Measure of the operational capacity for providing different types of services, user selection, successful completion of the service provision
10	Number of services by access type (physical, remote, hybrid access) requested by users via SAMU	quantitative	Measure of user demand on specific service access via hands-on access, remote, or hybrid access

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11	Number of services by access type (physical, remote, hybrid access) provided to users via SAMU	quantitative	Measure of operational capacity for different types of access provision, user selection, successful completion of the service provision
12	Number of users	quantitative	Measure of capacity for stimulating user interest
13	Percentage of gender representation	quantitative	Measure of inclusiveness, diversity, and engagement across different genders
14	Number of users per nationality	quantitative	Measure of the origin of users per country
15	Number of users per country of affiliation	quantitative	Measure of the origin of users per country
16	Number of services provided per country	quantitative	Measure of the use of the services per country
17	Percentage of users originating in ACTRIS member or observer countries	quantitative	Measure of the user base within the RI perimeter
18	Percentage of users originating in European countries	quantitative	Measure of the user base within Europe
19	Percentage of users originating in countries outside Europe	quantitative	Measure of the user base worldwide and the capacity for international collaboration
20	Number of users per scientific field	quantitative	Measure of the capacity for attracting users from other domains
21	Number of users from academic and public research organisations	quantitative	Measure of users from academic and public research organisations
22	Number of users from the public sector	quantitative	Measure of users from the public sector
23	Number of users from the private sector (business and industry)	quantitative	Measure of attractiveness for the private sector
24	Type of private sector use	qualitative	Measure of diversity for using the services by the private sector
25	Percentage of new users	quantitative	Measure of attracting new users
26	Percentage of recurrent users	quantitative	Measure of reliability of service provision
27	Percentage of experienced users	quantitative	Measure of user experience level
28	Percentage of young users (students, early career scientists, ...)	quantitative	Measure of training capacity
29	Average duration of access process, in days (from date of user request to acceptance by SAMU)	quantitative	Measure of the timeliness and effectiveness of the access process

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30	Access proposals' average scores/ratings after expert evaluation	quantitative	Measure of the quality of the access request received
31	Average scores received from the user feedback	quantitative	Measure of user satisfaction
32	Quality of access process	qualitative	Measure of user satisfaction of access process: not satisfied (1), slightly satisfied (2), moderately satisfied (3), very satisfied (4), extremely satisfied (5)
33	Quality of the Facility services accessed	qualitative	Measure of user satisfaction of access process: not satisfied (1), slightly satisfied (2), moderately satisfied (3), very satisfied (4), extremely satisfied (5)
34	Number of peer-reviewed papers resulting from the use of services	quantitative	Measure of production of knowledge due to ACTRIS services
35	Number of patents	quantitative	Measure of innovation capacity
36	Number of technology transfer activities (public-private)	quantitative	Measure of innovation capacity

Table 4 - List of suggested access metrics

Key Performance Indicator	**Value type**	**Definition**
ACTRIS Service Catalogue traffic	quantitative	Measure of the visibility of services and of the Catalogue visibility
Number of services available to users	quantitative	Measure of RI service capacity
Number of services requested by users	quantitative	Measure of user demand
Number of users	quantitative	Measure of service to users
Number of users from private sector (business and industry)	quantitative	Measure of attractiveness for the private sector
Average duration of access process, in days (from date of user request to acceptance by SAMU)	quantitative	Measure of the timeliness and effectiveness of the access process
Average scores received from the user feedback	quantitative	Measure of user satisfaction
Quality of access process	qualitative	Measure of user satisfaction of access process: not satisfied (1), slightly satisfied (2), moderately satisfied (3), very satisfied (4), extremely satisfied (5)

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Quality of the Facility services accessed	qualitative	Measure of user satisfaction of access process: not satisfied (1), slightly satisfied (2), moderately satisfied (3), very satisfied (4), extremely satisfied (5)

Table 5 – Access Management KPIs

7 Reference documents

1. ACTRIS Access and Service Policy
2. ACTRIS Data Policy
3. ACTRIS IMP Grant Agreement (N° 871115)
4. ACTRIS IMP MS7.1 "Definition of the pilot access process to ACTRIS facilities"
5. ACTRIS IMP MS 6.9 "Results of the testing of the access and services provision system"
6. ACTRIS PPP MS26 "Definition of key performance indicators"
7. European Charter for Access to Research Infrastructures: Principles and guidelines for access and related services. Publications Office of the European Union, 2015. ISBN: 978-92-79-45600-8, doi: 10.2777/524573, KI-04-15-085-EN-N. https://ec.europa.eu/research/infrastructures/pdf/2016_charterforaccessto-ris.pdf

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