

Milestone 6.6: Updated analysis of user needs

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1. Introduction

The ACTRIS IMP project objectives are based on the overall ACTRIS implementation phase objectives, aiming at elevating ACTRIS to a new level of maturity and setting the required coordinated structures for coherent implementation actions, to be performed at both the national and European level. The overarching objective of ACTRIS IMP is to coordinate and accomplish the actions required for implementing a globally recognised long-term sustainable research infrastructure with operational services by 2025.

This document aims at updating the user needs analysis carried out in ACTRIS Preparatory Phase Project (PPP, 2017–2019) to ensure that the development of the access and service provision system builds on a sound and up-to-date knowledge of the ACTRIS users, their background, expectations, and research requirements. A consolidated knowledge about the user communities and their needs is fundamental for each research infrastructure to ensure the provision of optimum services to its users and to ensure excellent science and innovation in the long term. The user strategy is the long-term planning for the provision of services a research infrastructure (RI) can offer to users in response to their needs. ACTRIS aims to place its users (public research organisations, universities and higher education organisations, international organisation; public services; private companies and businesses) at the centre of ACTRIS operations and strategic development as described in the ACTRIS Business Plan¹.

For this reason, a survey was conducted to inventory the needs of the ACTRIS key user groups and to put them in relation to the current and future ACTRIS capabilities.

The user needs analysis is part of ACTRIS IMP WP6 “Implementation of the user access to ACTRIS services”. The main objective of WP6 is to connect the Services Access Management Unit (SAMU) access management system with the Data Centre (DC), Topical Centres (TCs), and National Facilities (NFs) offering physical and remote access, and to set up the access services following a user-centric approach coherent with the ACTRIS technical capability and mission. The survey performed within the context of this report was also linked to WP9 “Positioning ACTRIS in the European ecosystem” as WP9 focuses on increasing the interest of the private sector towards ACTRIS as an innovation platform and by promoting actions for an effective technology and knowledge transfer.

2. Survey methodology and timeline

The survey was designed by WP6 and WP9 teams in order to join forces in approaching users and avoid duplicating effort in approaching the same persons several times in the same period of time. The aim of the survey is to identify the needs of ACTRIS key user groups and to document the past and current collaboration between ACTRIS and private sector. A previous survey was conducted in 2017 as part of ACTRIS-PPP WP6² and was used as a starting point to create the set of questions. The questionnaire

¹ ACTRIS PPP D1.6 ACTRIS Business Plan

² ACTRIS PPP [Milestone 23: Definition of User Requirements](#)

follows the guidelines for surveys prepared by ACTRIS Head Office in April 2020 as part of D11.2: Protocol for questionnaires in ACTRIS IMP³.

The survey answers fed in three reports: WP6 MS30 ACTRIS User experience map, MS35 Updated analysis of user needs and WP9 D9.1 Progress Report on the position of ACTRIS in the European Innovation Ecosystem.

The timeline for the updated analysis of user needs was as follows:

M7 – July 2020	First layout of the survey Sharing within WP6
M10– October 2020	Final version of the survey Sharing with WP6 and WP9
M11 – November 2020	Launch of the survey (questionnaire open for 2 months)
M14 – February 2021	Drafting the analysis of findings
M15 – March 2021	Presentation of the preliminary results at ACTRIS IMP Spring meeting
M18 – June 2021	Publication of the results

The survey targets four main user groups 1) academia and public research organisations, 2) business and industry, 3) ACTRIS Research performing organisations (RPO) and 4) other users (civil society, Non-Governmental Organisations (NGO)...). The survey coverage was monitored by WP6 and WP9 team to achieve a balanced representation of respondents from the different user communities.

The survey was launched online via a Google form rather than via an offline questionnaire to gather a maximum of input. The questionnaire was open on 17 November 2020. In order to achieve a higher response rate, the deadline for filling in the survey was extended from 15 January to 22 January 2021. Once closed a total of 110 responses had been received out of which 103 were exploitable.

The survey followed the General Data Protection Regulation (GDPR) and no individual data was shared, only aggregated results. All gathered information was grouped together at ACTRIS consortium level such that no personal data would be traceable from the end product. The individual answers and informed consent forms are stored at the Medical University Innsbruck until the end of the project. All information and responses to the questionnaire will be kept confidential.

The dissemination of the survey was done in close collaboration with ACTRIS-IMP WP10 (ACTRIS communications and public relations). The survey was notably circulated through ACTRIS and ENVRI (community of Environmental Research Infrastructures) communication channels – mailing lists, newsletter, social media channels (Twitter and LinkedIn). ACTRIS Topical Centres and National Facilities also disseminated the survey to their key users (i.e. past users from EU projects) in accordance with GDPR.

³ ACTRIS IMP D.11.2: Protocols for questionnaires in ACTRIS IMP

Targeted emails to public agencies (ie ESA, Eumetsat, Copernicus) and international networks (AERONET, NDAAC) sent through the ACTRIS Head Office as well as via other research infrastructure (e.g., ENVRI) also helped reaching users.

Table 1 below summarizes the contacting channels used to reach the different user communities.

Table 1 Survey dissemination means

ACTRIS USER COMMUNITY TYPE	DISSEMINATION MEANS
ACADEMIA AND PUBLIC RESEARCH ORGANISATIONS	Widespread communication Use of ACTRIS communication channels (mailings, website, newsletter, social media) and other networks (ENVRI, ESFRI)
BUSINESS AND INDUSTRY	Targeted contacts through past projects experience (ACTRIS-2, Eurochamp2020) Use of CF /NF / RPO contacts Approach other companies (database of instruments / sensor sector / value adding businesses)
PUBLIC SERVICES	Targeted contacts through past projects experience (ACTRIS-2, Eurochamp2020) and via NF / CF (to reach national / regional authorities) Approach agencies (ESA, EUMETSAT), Copernicus services (ECMWF)
OTHER / CIVIL SOCIETY	Social media, website, newsletter

One of the last questions of the survey focussed on the way participants got to know about the survey in order to assess communication efforts. For a large majority of respondents, it was by email (90%), then through colleagues (4%), social media (2%), newsletter (2%) and other (2%).

3. Survey Analysis

The survey was designed and structured having in mind different user groups including academia, public bodies, private sector users, ACTRIS RPOs (as users and providers), others. Therefore, targeted sets of questions were addressed to different user groups. This has proven not to be the most efficient way of collecting feedback and complicated the analysis.

The questionnaire was designed as a branch survey. The initial questions enquired about respondents' name, location, gender, level of education and organisation type. Depending on the answer on their organisation profile, respondents were automatically directed to subsequent sections. The last section was dedicated to the access experience of past and current users and past and current access providers.

The survey gathered responses from 28 countries. Most of the respondents are from academia / public sector (47), followed by ACTRIS RPOs (37 providers and users) private sector (15) and 4 respondents ticked the “other” category. The survey was targeting two main categories of respondents: ACTRIS users and ACTRIS providers: replies from 74 users and 29 providers were gathered. In the following subsections, we will concentrate on the user perspective.

3.1 Survey respondents’ profile

In order to have the best overview of the ACTRIS users’ opinions we went through the individual answers and distinguished four user categories: university (50%), research centres (26%), private sector (20%) and public agency (4%) (see Figure 1). The last category was the most difficult to reach as well as the “other users” (coming from NGOs, voluntary and community organizations). It should be noted that in some cases several users from the same institution or companies replied to the survey.

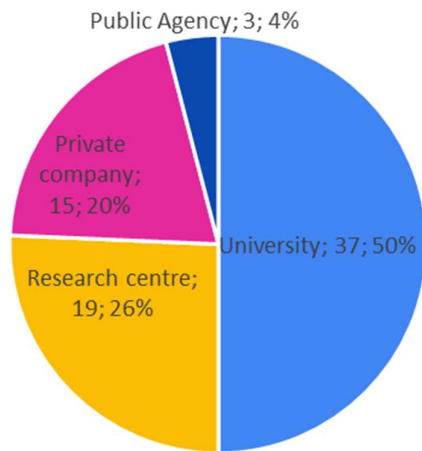


Figure 1: Respondents’ organisation type

Regarding the users’ origin, respondents from 28 countries participated in the survey. Nearly all the ACTRIS participating countries (present at the [Interim ACTRIS Council](#)) are represented. Several answers from other EU countries and international users (USA, Canada, Mexico, Brazil, South Africa) reached notably through past TNAs projects were obtained as presented in Figure 2 below.

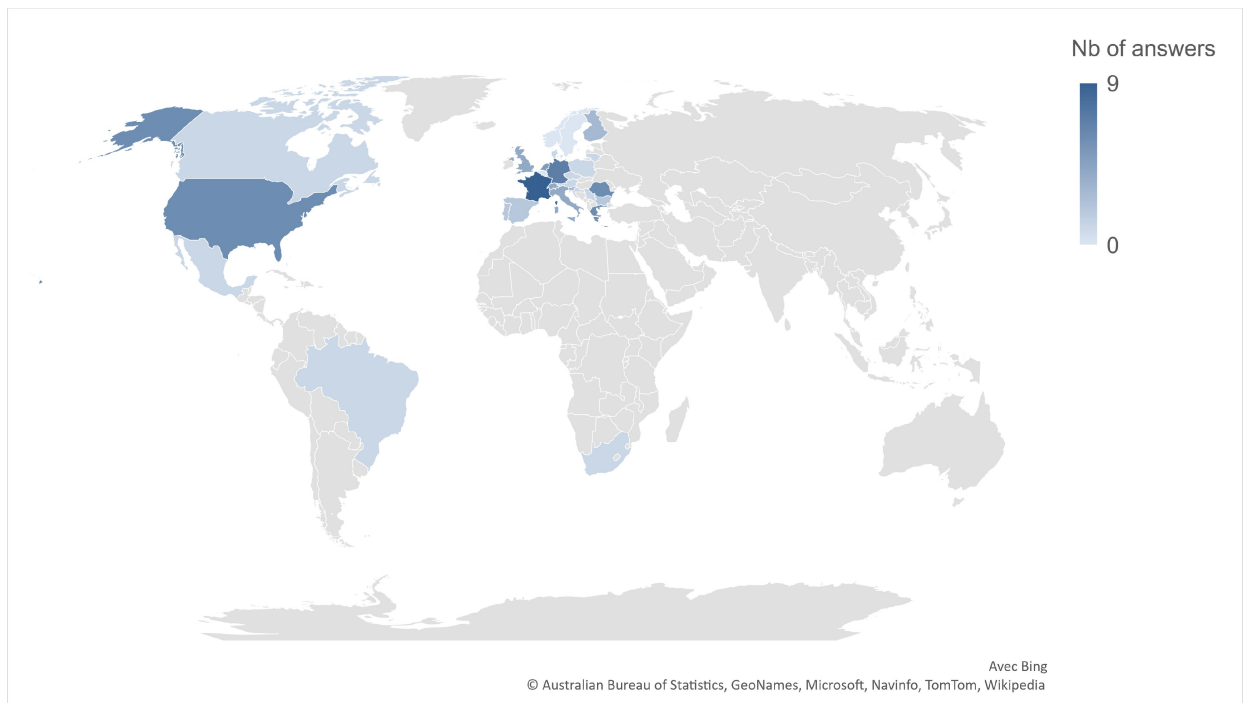


Figure 2: Respondents' origin (74 respondents)

Regarding user profile, 22% of the respondents are female (see Figure 3: Respondents' gender). Regarding user profile, 22% of the respondents are female (see Figure 3: Respondents' gender). Figure 4: Respondent's level of expertise. In ACTRIS-2 and Eurochamp-2020 projects, female users accounted for 1/3 of total number of users. In terms of expertise, most respondents are experts and post-doctoral researchers, nearly 1/5 are young scientists. During the ACTRIS-2 project young scientists accounted for 28% of the TNA users⁴. This difference can be explained by the fact that students have changed affiliation since the end of the ACTRIS-2 project and are not receiving ACTRIS emails any longer.

⁴ ACTRIS-2 [D9.2 Final report on access to advanced ACTRIS stations](#)

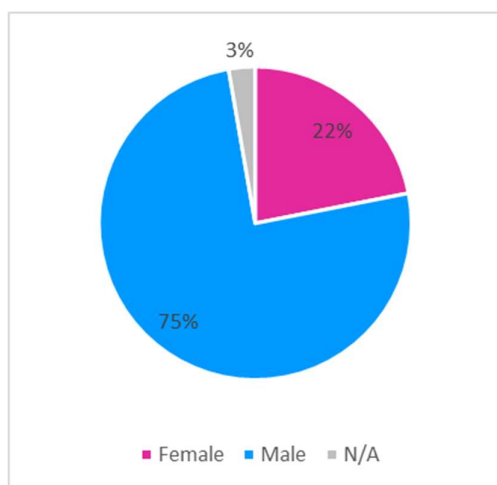


Figure 3: Respondents' gender

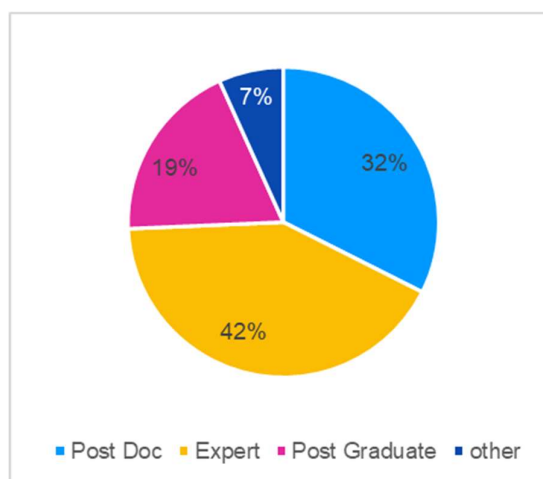


Figure 4: Respondent's level of expertise

There were responses from various fields of science (see Figure 5) with Earth and environmental science most represented (73%), followed by Engineering and technology (14%) and chemistry and material sciences (5%). Few respondents came from the biology and multidisciplinary fields. From the Earth and environmental science field most users are from the atmospheric science community (96%).

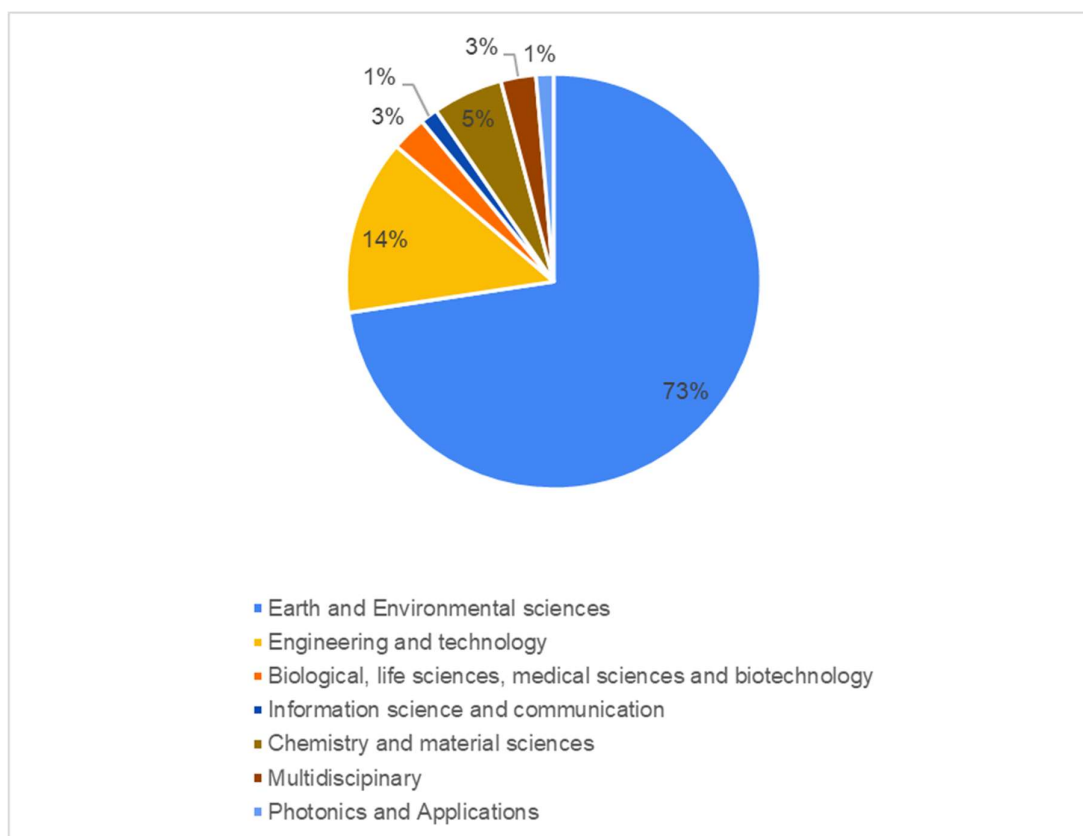


Figure 5: Respondents' field of expertise

Most respondents (52%) replied for themselves, 28% for their research group and 20 for their whole institution/ company.

3.2 Responses per sector

3.2.1 Academia and public sector

Due to a low response rate from the public sector users (only 3 respondents) we have grouped their answers with those from the academia. This section was thus answered by 59 participants.

Regarding user expertise, a large majority of respondents has scientific expertise (92%), only a few reported having technical expertise (5%) or computing (3%).

Most respondents already knew about ACTRIS and its services (68%).

The results of the multiple-choice question on users' current and prospective interests with ACTRIS are shown on Figure 6 below. Access to facilities, instrument, and testing was the most chosen service (51 respondents) followed by access to training (38 respondents). The importance of data services (31 respondents) was also underlined. This may not be representative of the whole ACTRIS community as Data

Centre users were hard to reach for this exercise. Technical services were also chosen by 30 respondents (quality standards compliance, validation of instruments and processes).

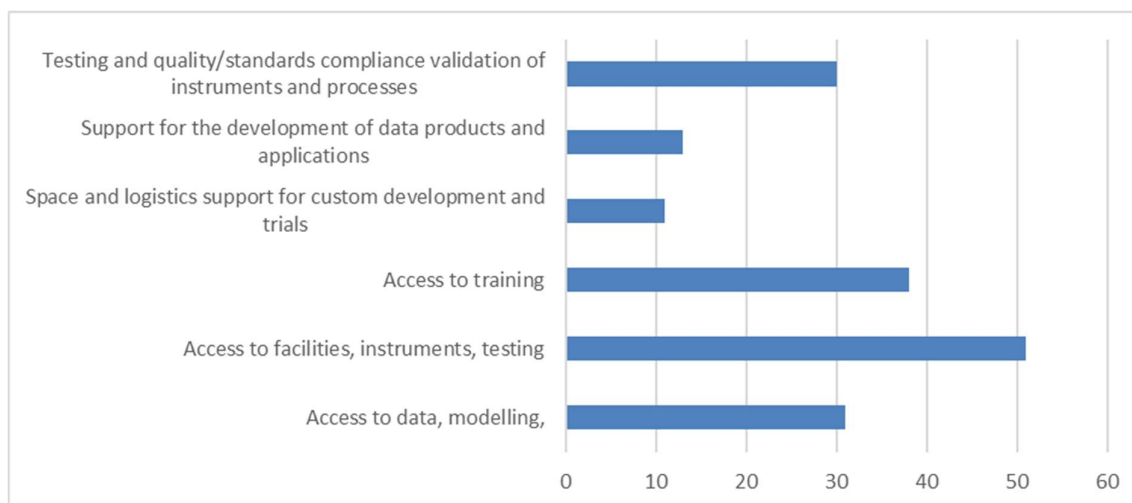


Figure 6: Interest in ACTRIS services from academia and public services

Users were then asked with a free text question what support or assistance they might need to access ACTRIS services. The word cloud (Figure 7) below represents the answers collected. The importance of funding, logistic support and access to information were the most frequent replies (23 respondents).



Figure 7: Word cloud representing support needed to access ACTRIS services.

Results regarding the type of facility users would need to access for their research are displayed in Figure 8 below. As for the services needed, there is a strong interest in National Facilities notably for ground based observational platforms and simulation chambers. Interest in the ACTRIS DC and in specific TC is also visible.

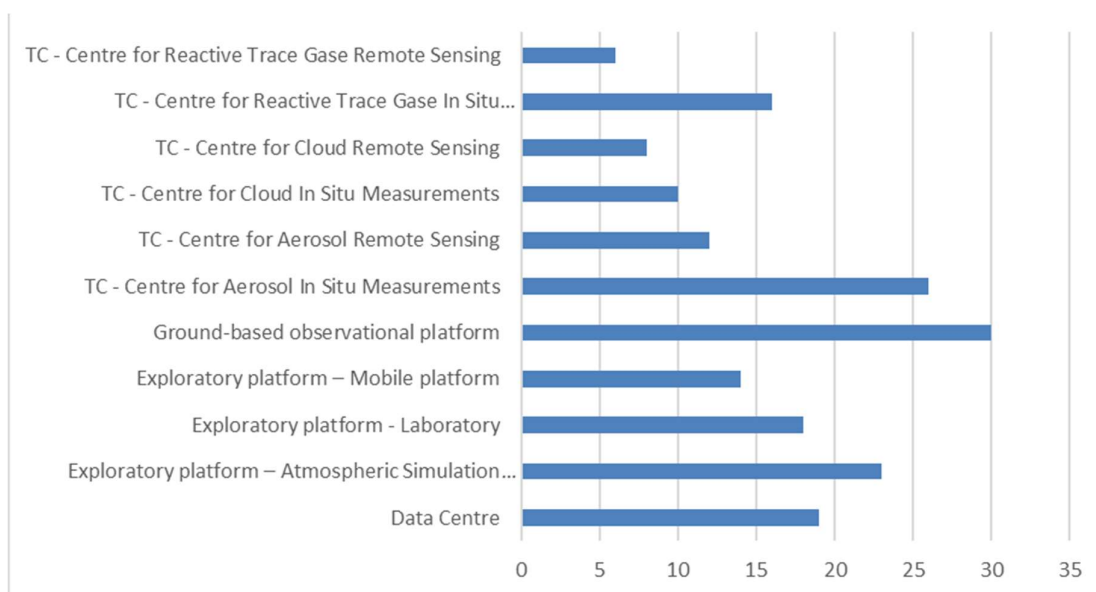


Figure 8 Interest in ACTRIS facilities from academia and public services

To the question on the access type interest, 43 respondents indicated interest in physical access, 29 in remote access and 17 in virtual access. Respondents could tick several options. This reflects a pre-covid situation. In the next years, we may observe a shift towards remote access notably. The lower interest in virtual access may come from the fact that as mentioned earlier data users were not reached by our communications on this survey.

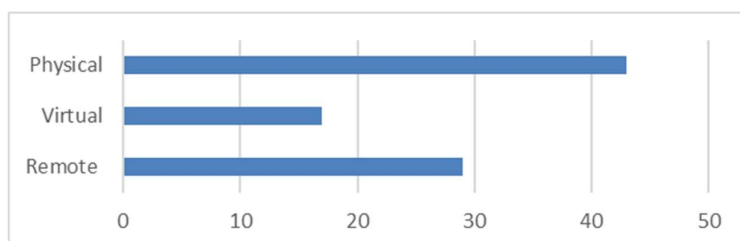


Figure 9 Interest in access type (academia and public services)

Regarding the frequency of access in terms of number of visits at one ACTRIS facility (e.g., one visit = 1 instrument calibration, 1 research experiment, 1 training module), users usually access the facility 1-2 times per year. Six users indicated a need for 3-5 times, one for more than 5 times a year.

Depending on their profile (past / current users) or future user respondents were sent to the access experience section of the survey or to the last questions.

Selected free text comments gathered at the end of the questionnaire are displayed below:

- *"I find the open data policy important; it will help improving the acceptance as well as the visibility of the research infrastructures and therefore helps guaranteeing financing."*

- *“ACTRIS is an extremely big project including a lot of sub-projects and it becomes extremely difficult to get an overview of all of them as well as which service each sub-project can provide.”*
- *“ACTRIS needs to take extra efforts to include more external partners, including experts and SMEs. Their inclusion is vital for quality control.”*
- *“Idea is good but the people working with ACTRIS stations seems to have all other duties as well, which prevents them from handling their ACTRIS work efficiently.”*
- *“ACTRIS is extremely relevant and important, mainly for helping researchers and scientists from developing countries to keep in touch with their peers in Europe and keep us up to date on scientific advances, new technologies, development of tools for data analysis.”*
- *“ACTRIS services are extremely useful for researchers coming from non ACTRIS members.”*

3.2.2 Section for private sector

15 users from 14 companies replied to this part of the survey. In the survey questionnaire, the questions were addressed to past and current industry users (10 answers) and new industry users (5 answers). Due to the low response rate and, as this distinction was not made for public sector / academia user, the answers were aggregated to have a better view on industry needs as a whole. If not specified differently the answers presented in this section gathers past / current and future industrial users. Some questions related to the potential measures to develop collaboration between ACTRIS and industry are analysed in more details in ACTRIS IMP D9.1 Progress Report on the position of ACTRIS in the European Innovation Ecosystem.

Regarding the industry profile, 13% of respondents work in a micro company (< 10 employees), 2/3 in a small and medium size company and 20% in a large company (more than 250 employees) as illustrated in Figure 10. Most users came from instrument manufacturers or sensor industry (87%). Others represents distributors of instrument manufacturers (7%) and ICT services / products companies (6%) (see Figure 10).

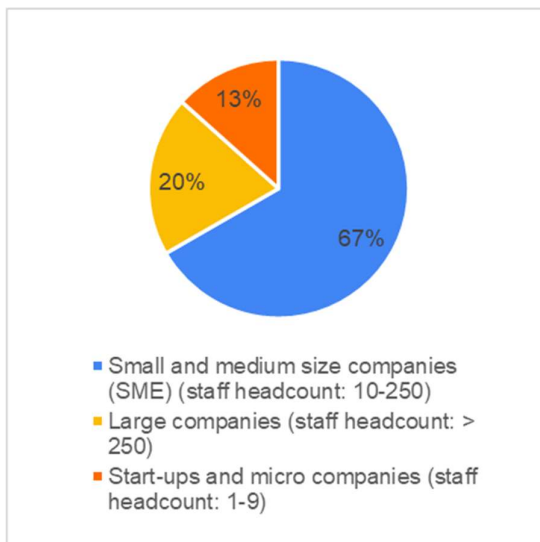


Figure 10: Company size

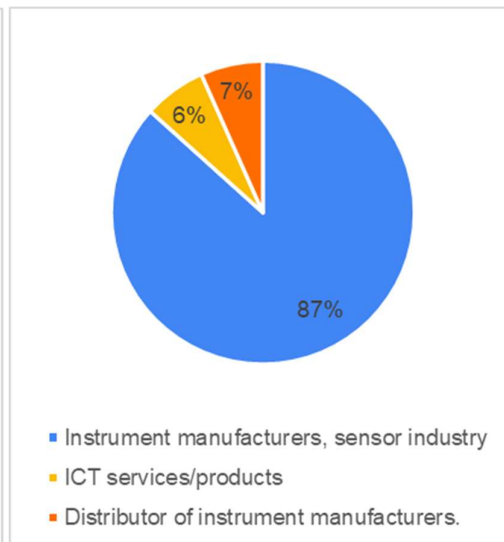


Figure 11: Company sector

12 companies already collaborated with an ACTRIS-related research-performing organisation. 2/3 of respondents have previous knowledge of ACTRIS.

Private sector respondents are mostly interested in technical and research services. The importance of testing, quality standards compliance, validation of instruments and processes (10 answers) and accessing the facilities (9 answers) is underlined by those users as shown in Figure 12. Custom services are the third most chosen option.

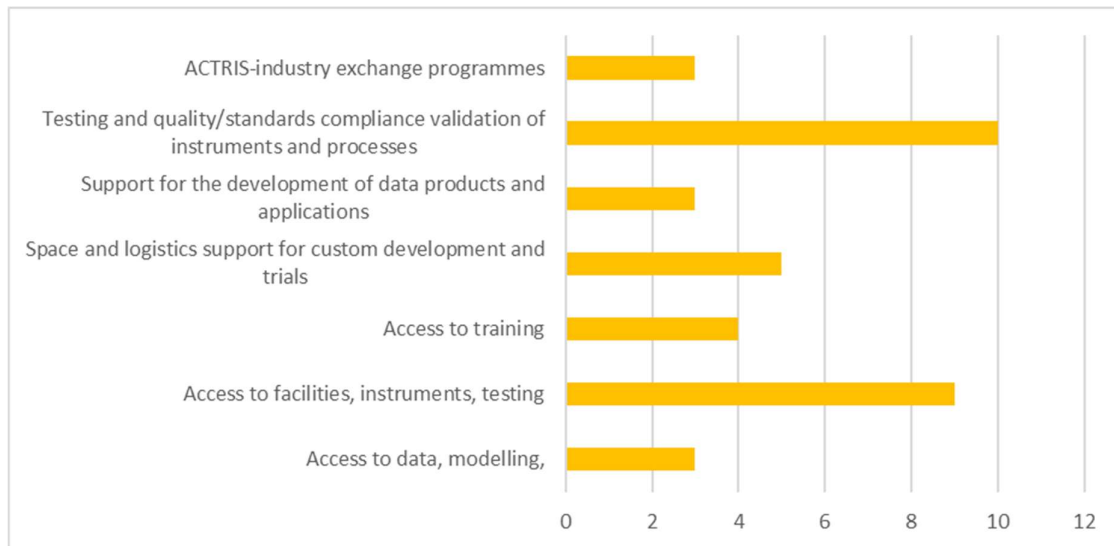


Figure 12 Interest in ACTRIS services from industry

Results regarding the type of facility needed to access for their research are displayed in Figure 13Figure 8 below. Access to national facilities, notably ground-based observational platform (10 answers) is of key interest for these users. Industrial users who filled in the survey may not yet be familiar with ACTRIS terminology. They may also have mixed up the terminology which explains the stronger interest in Laboratories than in TC.

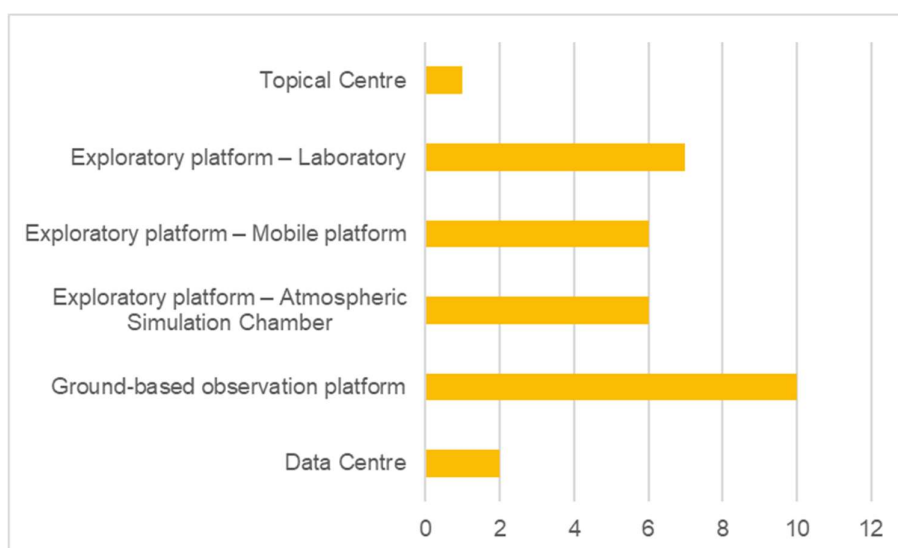


Figure 13 Interest in ACTRIS facilities from industry

To the multiple-choice question on the access type interest, 10 respondents ticked physical access, 7 in remote access and 3 in virtual access. Like the academia and public sector respondents, this reflects a pre-covid situation.

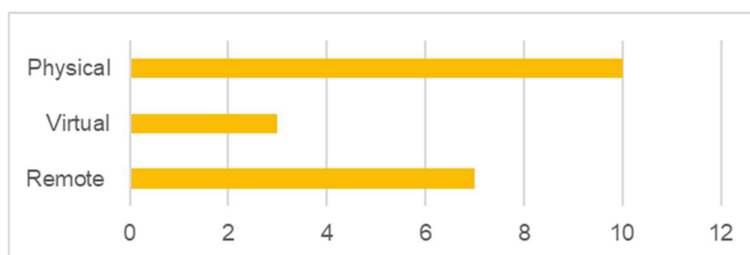


Figure 14: Interest in access type (private sector)

Regarding past and current industry users (10 answers), 6 companies got support or services from an ACTRIS RPO at commercialisation stage, 5 at proof of concept / demonstration stage, 3 for precompetitive research and 2 for feasibility studies. Only 2 companies indicated that they had participated in an active programme of joint technology innovation pilots. To the question on the measures that could be beneficial to develop collaborations between ACTRIS and industry the most chosen answer was through EU / publicly funded projects, then industry training programmes and financial subsidies from ACTRIS.

As a free text comment at the end of the survey one industry commented that ACTRIS represents an opportunity for the entire Europe which together with other research infrastructures should be exploited in an integrated, well-supported manner in the interest of the European population.

3.2.3 Section for ACTRIS RPOs

Specific questions were asked to ACTRIS RPO representatives with regards to industry collaboration measures and experiences. 37 answers were collected in this section. Most respondents (34) reported a previous experience in a collaboration with private companies. A wide range of means have been used to engage industries in the collaboration, with EU/publicly funded projects being the most relevant opportunity. These answers are analysed in depth in ACTRIS IMP WP9 D9.1 as mentioned earlier.

3.3 Access experience

The last section focused on user and providers access experience. This is studied in more details in ACTRIS IMP Milestone 6.1: ACTRIS User experience map⁵. 37 answers were collected in this section. The users had positive feedback on their experience and on ACTRIS with an average score of 8,7 out of 10.

4. Recommendations

The present survey results are not representative of the diversity of users who have accessed ACTRIS services during the ACTRIS-2 and EUROCHAMP-2020 projects over the past years. For instance, TNA programmes in those two projects accounted for more than 1128 projects and 1440 users. Besides, it has proven difficult to collect answers from the Data Centre users. In 2015-2018, 2236 unique client IPs from 72 different countries have downloaded ACTRIS EBAS data⁶.

In the future, the exercise should not be repeated in the same way. The length of the survey needs to be reduced with more precise questions. Better explanations on ACTRIS terminology would be necessary. The branch survey may be hard to use to compare answers gathered from different user categories. This has been reported by several users in their comments.

For current and future users, a straightforward questionnaire sent after the access or download would be the most effective way of collecting feedback. In ACTRIS IMP, a user feedback questionnaire will be filled in by TNA users after access completion in order to collect more accurate answers from users. This questionnaire is part of the mandatory TNA reporting documents as indicated on the [ACTRIS website](#). This requirement was not part of previous TNA programmes (ACTRIS FP7, ACTRIS-2, Eurochamp 2020).

Furthermore, to better connect and communicate with the users, the ACTRIS Science and User Access Forum where users interested in ACTRIS can exchange and discuss their needs and expectations regarding access and use of the ACTRIS services has been established. Its aims are to foster the users' awareness of the service opportunities provided by ACTRIS and to gain valuable insights on users' experience, needs

⁵ ACTRIS IMP Milestone [MS 6.1: ACTRIS User experience map](#)

⁶ ACTRIS-2 Deliverable [D10.13 Third summary of the monitoring of access to ACTRIS data and user statistics](#)

and expectations regarding the access to ACTRIS services. The Forum is online since April 2021 and accessible at <https://www.actris.eu/science-and-user-access-forum>

To reach future or new users, there will be a strong need of building a comprehensive user database though community or private sector mailing lists and specific networks / RIs (from the atmospheric domain and from different sectors like energy or health). The necessity to have a solid tool to contact the private sector was realised already early 2021 and a dedicated [private sector mailing list](#) was created by the ACTRIS Head Office on the ACTRIS website.

5. Conclusion

Detailed information on user requirements is essential for ACTRIS to be able to adjust its services to the user demands and ensure optimal service provision. Even though the results are not very representative for the entire potential user community, we have collected valuable information and comments notably from past TNA users.

The survey was a way to collect feedback from different types of users in a limited amount of time. Survey results and materials developed in past projects will be used to draw recommendations to ACTRIS facilities in ACTRIS IMP MS 6.7 Enhanced user strategy with recommendations to ACTRIS facilities.

6. References

Deliverables, Milestones

ACTRIS IMP

- [MS 6.1: ACTRIS User experience map](#)
- [D6.2: Report on the ACTRIS User support system](#)
- [D9.1: Progress Report on the position of ACTRIS in the European Innovation Ecosystem](#)
- [D.11.2: Protocols for questionnaires in ACTRIS IMP](#)

ACTRIS PPP

- [Milestone 23: Definition of User Requirements](#)
- [Deliverable 1.6: ACTRIS Business Plan](#)

ACTRIS-2

- [Deliverable 9.2 Final report on access to advanced ACTRIS stations](#)
- [Deliverable 10.13 Third summary of the monitoring of access to ACTRIS data and user statistics](#)

7. Annex A: Questionnaire

Section 1 Start

ACTRIS survey on user needs and collaborations with the private sector

ACTRIS promotes the provision of access to a large variety of high-quality services offered by ACTRIS facilities, to a wide range of users and needs and for scientific, technological and innovation-oriented usage.

This survey aims at identifying past and current collaborations between ACTRIS and the private sector and inventorying the needs of ACTRIS key user groups and put them in relation with current and future ACTRIS capabilities to derive recommendations for the development of services and the access system. The survey is part of the overall ACTRIS user strategy. It aims at considering the user dimension and identifying the potential gaps between the user's needs (past, current and future) and the services offered within the limits of the facilities' capacities.

We kindly invite you to share your experience and your views on access to ACTRIS services by participating in this 15 min online survey!

Your answers will be treated in a strictly confidential manner and will be anonymized for aggregating statistical analysis.

For any questions or technical problems, please contact Jochen Wagner (jochen.wagner@i-med.ac.at).

Please fill in this survey by 22.01.2021.

Thank you very much for your valuable cooperation!

Informed Consent

Your participation in this study will consist of a completion of a questionnaire. The questionnaire consists of both multiple choice and open questions. You will be asked a series of questions about your experience in the exploitation of the knowledge environment of ACTRIS and how the scientific results percolate into innovation value. An important objective is the assessment of industry benefits from access to ACTRIS facilities and scientific data.

Feel free to co-operate with colleagues when answering the questionnaire, if you consider it necessary. Your participation in the survey is entirely voluntary. If you decide to not participate in this study, you may withdraw from your participation or you may pass on any question that makes you feel uncomfortable at any time without penalty. We encourage all participants to ask questions or raise concerns at any time about the nature of the study or the methods used.

The only personal details we ask you to provide will be your name, the position in your organization/ company and your role at ACTRIS. All gathered information will be grouped together at ACTRIS consortium level such that no personal data will be traceable from the end product. The individual answers and

informed consent forms will be stored at the Medical University Innsbruck until the end of the project. All information and responses to the questionnaire will be kept confidential.

Subjects will not be compensated for participation in this study.

I voluntarily agree to participate in this survey. By clicking "yes" below, I acknowledge that I have read and understand the above information.

Section 2 - Compiler profile

What is your name?

What is the name of the organization you represent?

In which country is the institution you are affiliated with located (or where do you work/live)?

What is your gender?

- ☐ Female
- ☐ Male
- ☐ Prefer not to say
- ☐ Other

What is your level of education?

- ☐ Undergraduate
- ☐ Post graduate
- ☐ Post Doc
- ☐ Expert
- ☐ Technician
- ☐ Other

Your answers are on behalf of:

- ☐ Yourself
- ☐ Your research group
- ☐ You whole institution/company

What kind of organisation do you represent?

- ☐ Academia public service
- ☐ Private company
- ☐ ACTRIS Research Performing Organisation (RPO) - I am part of the ACTRIS Community
- ☐ other

Section 3 - Specific questions to academia and public services

What is your field of activity or of your research group or your institution on behalf of which you are answering for?

- ☐ Earth and Environmental sciences
- ☐ Physics astronomy, astrophysics and mathematics
- ☐ Chemistry and material sciences
- ☐ Biological, life sciences, medical sciences and biotechnology
- ☐ Engineering and technology
- ☐ Energy
- ☐ Humanities and arts
- ☐ Information science and communication
- ☐ Social sciences
- ☐ Other

Section 4 - Specific questions to academia and public services

What is your field of activity within Earth and Atmospheric sciences?

- ☐ Atmosphere
- ☐ Hydrosphere
- ☐ Lithosphere
- ☐ Eco-biosphere

Section 5 - Specific questions to academia and public services

What is your expertise?

- ☐ scientific expert
- ☐ financial and operational management
- ☐ technical expertise
- ☐ data management
- ☐ data curation
- ☐ computing with research data
- ☐ other

Did you already know ACTRIS and get in touch with the RI?

- ☐ Yes
- ☐ No

Section 6 - Specific questions to academia and public services

What did you approach ACTRIS for?

Section 7 - Specific questions to academia and public services

Do you know the ACTRIS services?

- ☐ Yes
- ☐ No

What are your current and prospective interests with ACTRIS?

- ☐ Access to data, modelling
- ☐ Access to facilities, instruments, testing
- ☐ Access to specialised training
- ☐ Access to basic training on atmospheric sciences / MOOCs
- ☐ Provision of space and logistics support for custom development and trials
- ☐ Support for the development of data products and applications
- ☐ Testing and quality/standards compliance validation of instruments and processes
- ☐ Other
- ☐ Don't know/Can't answer.

What support/assistance you might need to access ACTRIS services?

Which type of facility would you access for your research needs?

- ☐ Data Centre
- ☐ Ground-based observational platform
- ☐ Exploratory platform – Atmospheric Simulation Chamber
- ☐ Exploratory platform – Mobile platform
- ☐ Exploratory platform – Laboratory
- ☐ TC - Centre for Aerosol In Situ Measurements
- ☐ TC - Centre for Aerosol Remote Sensing
- ☐ TC - Centre for Cloud In Situ Measurements
- ☐ TC - Centre for Cloud Remote Sensing
- ☐ TC - Centre for Reactive Trace Gas In Situ Measurements
- ☐ TC - Centre for Reactive Trace Gas Remote Sensing

Which access type are you most interested in:

- ☐ Physical access (Physical access is “hands-on” access when Users physically visit an infrastructure/facility)
- ☐ Remote access: Remote access is access to resources and services offered without Users physically visiting the infrastructure/facility
- ☐ Virtual access: Virtual access is free access to Users provided through communication networks

What is your expected frequency of access per year (number of visits at one ACTRIS facility, e.g., one visit = 1 instrument calibration, 1 research experiment, 1 training module):

- ☐ 1-2 times per year
- ☐ 3-5 times per year
- ☐ > 5 times per year
- ☐ Other

What is the expected duration of use per visit?

Regarding ACTRIS services you are:

- ☐ a recurrent user
- ☐ a past user

- ☐ a potential future user
- ☐ none of the above

Section 8 - Specific questions to private sector

Has your organisation participated in a collaboration with an ACTRIS-related research-performing organisation?

- ☐ Yes
- ☐ No
- ☐ I don't know

What is the size of your company?

- ☐ Start-ups and micro companies (staff headcount: 1-9)
- ☐ Small and medium size companies (SME) (staff headcount: 10-250)
- ☐ Large companies (staff headcount: > 250)

What is the type of your company?

- ☐ Instrument manufacturers, sensor industry
- ☐ Companies/Spin-off companies oriented to develop monitoring techniques/services, software for environmental technologies
- ☐ Other

Which field are you active in?

- ☐ Earth and Environmental sciences
- ☐ Physics astronomy, astrophysics and mathematics
- ☐ Chemistry and material sciences
- ☐ Biological, life sciences, medical sciences and biotechnology
- ☐ Engineering and technology
- ☐ Energy
- ☐ Humanities and arts
- ☐ Information science and communication
- ☐ Social sciences
- ☐ Other

Section 9 - Specific questions to private sector

What is your field of activity within Earth and Atmospheric sciences?

- ☐ Atmosphere
- ☐ Hydrosphere
- ☐ Lithosphere
- ☐ Eco-biosphere

Section 10 - Specific questions to private sector

What is your expertise? (scientific expertise, financial and operational management, technical expertise, data management, data curation, and computing with research data)

Did you already know ACTRIS and got in touch with the RI?

- ☐ Yes
- ☐ No
- ☐ I don't know.

Do you know the ACTRIS services?

- ☐ Yes
- ☐ No

Section 11 - Specific question on collaboration between ACTRIS and private sector

Which is your position toward ACTRIS and ACTRIS services? How you can define the type of collaboration between your company and ACTRIS?

- ☐ suppliers
- ☐ users
- ☐ partners
- ☐ none of the above

Section 12 - Specific question on collaboration between ACTRIS and private sector

Is your company an intermediary user, i.e. your company is not the end-user of the ACTRIS product/service?

- ☐ Yes
- ☐ No
- ☐ Do not know / prefer not to answer

Where is your company located in respect to the ACTRIS collaboration institution?

- ☐ Local/regional to the ACTRIS collaboration institution
- ☐ Non-local but in the same country as the ACTRIS collaboration institution
- ☐ Other country

How would you describe the nature of the collaboration between ACTRIS and your company in the past?

- ☐ Mainly one-off impromptu
- ☐ Mainly part of systematic long-term plan/relationship
- ☐ A mix of the two
- ☐ Other

Which of the following ACTRIS services did your company use?

- ☐ Testing and quality/standards compliance validation of instruments and processes
- ☐ Access to data, modelling via e.g. your RI's data portal
- ☐ Access to facilities, instruments, testing

- ☐ Access to specialised training
- ☐ ACTRIS-industry exchange programmes
- ☐ Provision of space and logistics support for custom development and trials
- ☐ Data products and applications development support
- ☐ Provision of space and/or other logistics, for own research, development and trials
- ☐ Support for the development of data products and applications

At which stages of the industry's research, development and innovation process did your institution get support and services from an ACTRIS-related research-performing organisation?

- ☐ Pre-competitive research
- ☐ Feasibility studies
- ☐ Proof of concept/demonstration
- ☐ Commercialisation

Did your company participate in an active programme of joint technology innovation pilots?

- ☐ yes
- ☐ no

Which of following measures would be beneficial to develop collaborations between ACTRIS and industry?

- ☐ Financial subsidies for ACTRIS-industry collaboration
- ☐ Direct company meetings/visits
- ☐ Education programmes
- ☐ Industry training programmes
- ☐ Match-making events
- ☐ EU / publicly funded projects
- ☐ Other

Which access type are you most interested in?

- ☐ Physical access (Physical access is "hands-on" access when Users physically visit an infrastructure/facility)
- ☐ Remote access (Remote access is access to resources and services offered without users physically visiting the infrastructure/facility)
- ☐ Virtual access (Virtual access is free access to Users provided through communication networks)

Which type of facility would you access for your research needs?

- ☐ Data Centre
- ☐ Topical Centre
- ☐ Ground-based observation platform
- ☐ Exploratory platform – Atmospheric Simulation Chamber
- ☐ Exploratory platform – Mobile platform
- ☐ Exploratory platform – Laboratory

Regarding ACTRIS services you are:

- ☐ a recurrent user

- ☐ a past user
- ☐ a potential future user
- ☐ none of the above

Section 13 - Specific question on collaboration between ACTRIS and private sector

Which kind of services or collaboration is your company interested in?

- ☐ Testing and quality/standards compliance validation of instruments and processes
- ☐ Access to data, modelling via e.g. your RI's data portal
- ☐ Access to facilities, instruments, testing
- ☐ Access to specialised training
- ☐
- ☐ Provision of space and logistics support for custom development and trials
- ☐ Data products and applications development support
- ☐ Provision of space and/or other logistics, for own research, development and trials
- ☐ Support for the development of data products and applications

At which stages of the industry's research, development and innovation process could your institution get support and services from an ACTRIS-related research-performing organisation?

- ☐ Pre-competitive research
- ☐ Feasibility studies
- ☐ Proof of concept/demonstration
- ☐ Commercialisation

Which of following measures would be beneficial to develop collaborations between ACTRIS and industry?

- ☐ Financial subsidies for ACTRIS-industry collaboration
- ☐ Direct company meetings/visits
- ☐ Education programmes
- ☐ Industry training programmes
- ☐ Match-making events
- ☐ EU / publicly funded projects
- ☐ Other

Which access type are you most interested in?

- ☐ Physical access: Physical access is "hands-on" access when users physically visit an infrastructure/facility
- ☐ Remote access: Remote access is access to resources and services offered without Users physically visiting the infrastructure/facility.
- ☐ Virtual access: Virtual access is free access to Users provided through communication networks

Which type of facility would you access for your research needs?

- ☐ Data Centre
- ☐ Topical Centre

- ☐ Ground-based observation platform
- ☐ Exploratory platform – Atmospheric Chambers
- ☐ Exploratory platform – Mobile platform
- ☐ Exploratory platform – Laboratory

Section 14 - Specific questions on current and prospective interests with ACTRIS

Are you affiliated with?

- ☐ Voluntary and community organisation
- ☐ NGOs, non-profit research institution
- ☐ Citizen
- ☐ Other

Which field are you active in?

- ☐ Earth and Environmental sciences
- ☐ Physics astronomy, astrophysics and mathematics
- ☐ Chemistry and material sciences
- ☐ Biological, life sciences, medical sciences and biotechnology
- ☐ Engineering and technology
- ☐ Energy
- ☐ Humanities and arts
- ☐ Information science and communication
- ☐ Social sciences
- ☐ Other

What is your expertise?

- ☐ scientific expertise
- ☐ financial and operational management
- ☐ technical expertise
- ☐ data management
- ☐ data curation
- ☐ computing with research data
- ☐ other

Did you already know ACTRIS and got in touch with the RI?

- ☐ Yes
- ☐ No

Section 15 - Specific question on collaboration between ACTRIS and private sector

In which type of facility do you operate? (TC - Topical Centre; NF - National Facility)

- ☐ Data Centre
- ☐ TC – Centre for Aerosol In Situ Measurements

- ☐ TC – Centre for Aerosol Remote Sensing
- ☐ TC – Centre for Cloud In Situ Measurements
- ☐ TC - Centre for Reactive Trace Gases In Situ Measurements
- ☐ TC – Centre for Reactive Trace Gases Remote Sensing
- ☐ NF – Ground-based observation platform
- ☐ NF – Exploratory platform – Atmospheric Simulation Chamber
- ☐ NF – Exploratory platform – Mobile platform
- ☐ NF – Exploratory platform – Laboratory

Do you have a label certifying quality and compliance of instruments and processes with international reference standards?

- ☐ Yes
- ☐ No
- ☐ I don't know.

Has your organisation participated in a collaboration with private companies?

- ☐ Yes
- ☐ No
- ☐ I don't know.

At which stages of the industry's research, development and innovation process did your institution provide support and services?

- ☐ Pre-competitive research
- ☐ Feasibility studies
- ☐ Proof of concept/demonstration
- ☐ Commercialisation

How did you engage industry for joint research, development and innovation (R&D&I)?

- ☐ Industrial partnership / long-term agreements
- ☐ Transfer of technology / licensing
- ☐ EU / publicly funded projects
- ☐ Industry sponsored / co-financed projects

What are your current and prospective interests with ACTRIS?

- ☐ Access to data, modelling
- ☐ Access to facilities, instruments, testing
- ☐ Access to specialised training
- ☐ Access to basic training on atmospheric sciences / MOOC's
- ☐ Providing space and logistics support for custom development and trials
- ☐ Data products and applications development support
- ☐ Providing space and/or other logistics, for own research, development and trials
- ☐ Support for the development of data products and applications
- ☐ Testing and quality/standards compliance validation of instruments and processes

- ☐ Don't know, can't answer
- ☐ Others

7. Which of the following services did your institution offer for companies?

- ☐ Testing and quality/standards compliance validation of instruments and processes
- ☐ Access to data, modelling via e.g. your RI's data portal
- ☐ Access to facilities, instruments, testing
- ☐ Access to specialised training
- ☐ ACTRIS-industry exchange programmes
- ☐ Provision of space and logistics support for custom development and trials
- ☐ Data products and applications development support
- ☐ Provision of space and/or other logistics for own research, development and trials
- ☐ Support for the development of data products and applications

How would you describe the nature of the collaboration between your ACTRIS facility and industry clients in the past?

- ☐ Mainly one-off impromptu
- ☐ Mainly part of systematic long-term plan/relationship
- ☐ A mix of the two
- ☐ Other

Where do the companies using your ACTRIS facilities mainly come from?

- ☐ Local/regional
- ☐ Non-local but in the same country
- ☐ Other country

Do your ACTRIS facilities have intermediary users, i.e. companies that are not themselves the end-user of the ACTRIS product/service?

- ☐ Yes
- ☐ No
- ☐ Don't know / prefer not to answer

Which of following measures would be beneficial to develop collaborations between ACTRIS and industry?

- ☐ Financial subsidies for ACTRIS-industry collaborations
- ☐ Direct company meetings/visits
- ☐ Education programmes
- ☐ Industry training programmes
- ☐ Match-making events
- ☐ EU / publicly funded projects
- ☐ Others

Regarding ACTRIS services you are:

- ☐ a recurrent user
- ☐ a recurrent provider

- ☐ a past user
- ☐ a past provider
- ☐ a potential future user
- ☐ a potential future provider
- ☐ none of the above

Section 16 - Access Experience as user of ACTRIS services

Which type of facility did you use?

- ☐ Data Centre
- ☐ Topical Centre
- ☐ National Facilities
- ☐ other

How was the access organized?

- ☐ via access programs (type TNA or national access program)
- ☐ directly organized

Which access type have you used?

- ☐ Physical access: Physical access is “hands-on” access when users physically visit an infrastructure/facility
- ☐ Remote access: Remote access is access to resources and services offered without Users physically visiting the infrastructure/facility.
- ☐ Virtual access: Virtual access is free access to Users provided through communication networks

Which type of service have you accessed?

- ☐ Access to data, modelling
- ☐ Access to facilities, instruments, testing
- ☐ Access to specialised training
- ☐ Access to basic training on atmospheric sciences / MOOCs
- ☐ Provision of space and logistics support for custom development and trials
- ☐ Data products and applications development support
- ☐ Provision of space and/or other logistics, for own research, development and trials
- ☐ Support for the development of data products and applications
- ☐ Testing and quality/standards compliance validation of instruments and processes
- ☐ Don't know, can't answer

How often have you accessed? - Please explain it in words and/or numbers (Frequency (X times) and/or duration (number of access days) or quantity (number of access unit e. g. calibration)).

How many members did the user group consist of?

- ☐ 1 (principal investigator)
- ☐ 2-3 persons
- ☐ 4-5 persons
- ☐ >5 persons

The access was:

- ☐ Free of charge
- ☐ Subject to fees

What's the most problematic and hard part about your experience of access to Facilities?

Please describe how you got access to facilities (sequence of main steps in the process, e.g. answer to a call, suggestion by acquaintances and/or colleagues, etc.)

Overall, how easy or difficult did you find the procedure to get access to facilities and services?

- ☐ extremely difficult
- ☐ somewhat difficult
- ☐ neither difficult nor easy
- ☐ somewhat easy
- ☐ extremely easy

Why?

Did you receive proper assistance before, during and after your access experience (application, selection, service fruition, ...)?

- ☐ Yes
- ☐ No
- ☐ Other

How would you describe your overall access experience?

- ☐ extremely satisfactory
- ☐ somewhat satisfactory
- ☐ neutral
- ☐ somewhat poor
- ☐ extremely poor

What would you suggest as possible improvements?

Are there services you need but don't know how to access?

- ☐ Yes
- ☐ No
- ☐ Other

Are you overall satisfied with ACTRIS? (rate from 0 to 10?)

Section 17 - Experience as provider of ACTRIS services to users

How did you provide any ACTRIS services to users (not only industries) in the past?

- ☐ Via access programs
- ☐ directly organized
- ☐ other

Which access type did you offer?

- ☐ Physical access (Physical access is “hands-on” access when users physically visit an infrastructure/facility)
- ☐ Remote access (Remote access is access to resources and services offered without users physically visiting the infrastructure/facility)
- ☐ Virtual access (Virtual access is free access to users provided through communication networks)

How often did you provide access? Please explain it in words and/or numbers (Frequency (X times) and/or duration (number of access days) or quantity (number of access unit e. g. calibration))

What’s the most problematic and hard part about your experience to provide access to Facilities?

Overall, how easy or difficult did you find the procedure to provide access to facilities and services?

- ☐ extremely difficult
- ☐ somewhat difficult
- ☐ neither difficult nor easy
- ☐ somewhat easy
- ☐ extremely easy

Why?

7. Did you receive proper assistance before, during and after your provider experience (application, selection, service fruition, ...)?

- ☐ Yes
- ☐ No
- ☐ Other

How would you describe your overall experience as provider of ACTRIS services to users?

- ☐ extremely satisfactory
- ☐ somewhat satisfactory
- ☐ neutral
- ☐ somewhat poor
- ☐ extremely poor

What would you suggest as possible improvements?

Section 18 – Final questions

How did you know about the questionnaire?

- ☐ Social media
- ☐ Through colleagues
- ☐ Website
- ☐ Newsletter
- ☐ Email
- ☐ Other

Please, Feel Free to leave your comments about ACTRIS services not included in the answers above