

Deliverable 3.2: Strategic plan to enhance national and regional ACTRIS activities

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1. Background

One of the key elements for long-term sustainability of ACTRIS is to ensure that national level ACTRIS activities are embedded in national research, development, and innovation strategies, and that the national level activities have a local impact. This needs regular and well-functioning connections with local and regional user communities, ACTRIS Regional Partner Facilities (RPFs), private sector actors, stakeholders and funders, and that the importance and the relevance of ACTRIS at the local and regional level is communicated to local policy makers. In many countries national ACTRIS consortia have established connections to various user communities and have experience on how to link RI activities to boost the local and regional science and innovation actions.

In this deliverable, which is part of Task 3.4: Enhancing the local and regional impact of ACTRIS, we briefly describe the National Consortia and summarize the experiences and best practices from ACTRIS National Consortia in relation to their local users, stakeholders and policymakers. This will enable knowledge transfer from one consortia to another and will increase cohesion among the National Consortia as well as it will enhance the local and regional impact of ACTRIS activities.

2. Short introductions to the National Consortia in ACTRIS

The national contribution is critical to ACTRIS observational and data analysis capacities. These national activities are organized in National Consortia, such as ACTRIS-FR, ACTRIS-D and ACTRIS-IT, for France, Germany and Italy, respectively. The contact points between ACTRIS HO and the National Consortia are National Contact Persons (NCPs), which are liaison between the consortia and the ACTRIS ERIC, as soon as the ERIC is established.

In short, the national ACTRIS consortia are active and cooperative. Although the development within national consortia takes place in a non-synchronous manner, the challenges and obstacles are quite similar. In this deliverable we tackle these challenges but also summarize the best practices arising from the joint expertise by the NCPs and the different National Consortia.

More detailed description of ACTRIS National consortia (altogether 22 countries) can be found at the ACTRIS website (<https://www.actris.eu/who-we-are>).

3. Best practices to enhance local, national and regional impacts

The ACTRIS national consortia are active in their own countries and have well-established connections to local and national stakeholders. Here we shortly introduce and summarize the best practices to enhance local, national and regional impacts.

3.1. Structural support and connection to pan European ACTRIS

In order to maximize the impacts of ACTRIS in the different levels, the organization within ACTRIS needs to be fit-to-purpose without overrepresentation of internal bureaucracy.

In order to streamline the connection of pan European ACTRIS and the national activities, we have established the role of National Contact Persons as the official representatives of the National consortia. The NCPs have now established terms of reference, mandate and duties. Recently, May 2022, we have also established the ACTRIS National Facility Technical and Scientific Forum, meant especially for ACTRIS NF PIs but open for the whole ACTRIS community, which will enable us to maintain high quality of science and technologies within ACTRIS. The role of Regional Partner Facilities has been clarified. As part of establishing the ACTRIS ERIC, participation of individual RPOs and ACTRIS CFs in European research projects has been clarified via development of guidelines for the participation of ACTRIS ERIC and ACTRIS in externally funded projects.

As a communication channel between the ACTRIS HO and the National Consortia as well as between ACTRIS HO and the other Central Facilities, we will establish reporting procedures. These will be formalized as soon as ACTRIS ERIC will be established.

Particularly concerning the national level reporting, we have developed a reporting template that will be collected from the national consortia annually to summarize the activities, expenditures and impacts of the national consortia. The ACTRIS HO will utilize this information in summarizing the information in a pan European context.

3.2. Best practices in monitoring the scientific impacts

To monitor the scientific impacts of ACTRIS, we will collect ACTRIS related scientific publications and have the list of publications available at ACTRIS website. We will collect the primary publications from the authors of the National Consortia annually and when the ACTRIS data DOIs are active we can in the future automatically harvest all the publications using ACTRIS data. The automatic harvesting will be done by ACTRIS Data Centre. This way we will easily get the information on the research performed using ACTRIS data also outside of ACTRIS National Consortia.

The National Consortia will report on the annual basis the ACTRIS related conferences/workshops/seminars etc. they have organized at national, regional and international level. Some ACTRIS countries are already organizing workshops and conferences on an annual or biannual basis for the national ACTRIS community. Side events are already established, regional and European/international conferences shall be considered. ACTRIS National Consortia are also asked to annually report their contributions directly linked to ACTRIS at conferences/workshops/other relevant events.

As for the publications, the information on the events organized by ACTRIS National Consortia shall be made available at ACTRIS webpage and/or provided in the ACTRIS Newsletter. Here, the National Consortia need to be active in communicating their activities to ACTRIS HO. ACTRIS annual report, showing the progress of ACTRIS at European and national level, will be made available to ACTRIS website.

3.3. Best practices and challenges arising from internal ACTRIS organization

Many ACTRIS NFs contribute to multiple ACTRIS components (*aerosol in situ*, *aerosol remote sensing*, *cloud in situ*, *cloud remote sensing*, *reactive trace gases in situ*, *reactive trace gases remote sensing*) and the number of NFs with several ACTRIS components is expected to increase in the future. From a scientific perspective multicomponent ACTRIS NFs are of high interest and provide a great platform for investigating the links and processing between aerosol particles, clouds and reactive trace gases. However, this can also lead to internal competition between components (different science directions / needs). Also, there might not be enough technical staff to operate and maintain all the components. On a positive side, with more than one ACTRIS component NF, there is potentiality in overcoming single component limitations.

Co-located NFs (together with other environmental research infrastructures, e.g., ICOS, eLTER, AnaEE) provide higher value and impact with a lower cost. Co-location strongly supports scientific cross-fertilization and enables new breakthroughs. Challenges may arise due to the amount of funding for the NF as there might be limited resources for a single RI component. Even though the co-location is cost-effective, the funder might consider even lower costs than realistic. This can lead to internal competition between the RI components or different RIs at one NF.

3.4. Best practices and challenges arising from ACTRIS and other environmental RIs

National Facilities can contribute to multiple environmental RIs. There are benefits related to integrative science and potential for very high science impact. Challenges arise from ensuring that ACTRIS receives enough technical support locally and the competition on the same technical resources. In addition, there is likely competition on national financial resources. The need for spreading ENVRI into so many different separate RIs might be difficult to explain at the ministry level because it is not fundamentally straightforward that this is the best possible organization. In addition, there are issues related to changing governments, ministries and people at the ministries. Upon changes, there are always new people to be addressed, contacted and convinced.

Example of ACTRIS-Finland (ACTRIS-FI): ACTRIS-FI, ICOS-FI, eLTER-FI boards of directors include members of the other RIs. This allows sharing of information and joint planning for national funding. The integration between environmental RIs in Finland is also strongly supported at the country level: INAR RI (Integrated Atmospheric and Earth System Research Infrastructure) that consists of ACTRIS-FI, ICOS-FI, eLTER-FI and AnaEE-FI, is on the Finnish RI roadmap. ACTRIS-FI has received funding on its own and as part of INAR RI. To ensure that all the different environmental RIs included in INAR RI receive funding for their activities, it is better to apply funding together but it should be noted that the amount of funding for each of the RIs is likely not to be substantial in this case.

Example of ACTRIS-Italy (ACTRIS-IT): The integration between RIs in the environmental domain has been considered relevant for addressing emerging issues at country level, receiving a 150 million € project funding (ITINERIS project).

3.5. Financial aspects

ACTRIS NFs are the heart of ACTRIS: it's crucial that they are financially sustainable in the long term. There are issues affecting financial uncertainty (2023 onwards) especially related to EU funding. For gaining

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national funding, ACTRIS achievements should always be elaborated by ACTRIS ERIC but also highlighted at the country level. EU recovery funds can be a useful resource for national consortia of ACTRIS, for example, it would work for Sweden. The application and purpose of the recovery funds vary from country to country. It should be noted that according to the EC, national governments should take over funding the access to sites.

Regarding purchases, some countries are experiencing issues, such as delays in delivery, in purchasing goods (e.g., instruments delivery delays, supply problems). If these types of issues become more prominent, better preparation/risk management actions are needed.

At the national level there are instruments that complement the ACTRIS component instruments (e.g., at an aerosol in-situ NFs, there can be remote sensing instruments supporting the measurements). It needs to be solved on whether these instruments could be labelled, i.e., can these instruments receive ACTRIS operation support from the ACTRIS Topical Centres and provide ACTRIS data.

3.6. Regional partner facilities / city level collaborators

Regarding future national / regional level opportunities to increase local impact, we would like to highlight collaboration with Regional Partner Facilities (RPFs) and city-level collaboration. The formalization of the RPFs within ACTRIS is still on-going. Overall, RPFs has the potential to cover various types of collaborators to ACTRIS, ranging from potential new NFs to other Ris collaborating with ACTRIS. Specific feature of RPFs from the EC side is that they may use structural funds in their activities related to research infrastructures. The detailed conditions to apply must, however, be investigated in more detail and the definition of RPF in the context of ACTRIS needs to be elaborated further (as part of the work of ACTRIS IMP WP1, Task 1.4 Developing the ACTRIS Regional Partner Facility concept). Within the ACTRIS IMP WP5 (Task 5.2 Support for new National Facilities and Regional Partner Facilities) a survey has been conducted to map potential new ACTRIS relevant RPFs and to connect them to ACTRIS via organizing meetings, training etc.

EU Green Deal project *Research Infrastructures Services Reinforcing Air Quality Monitoring Capacities in European Urban & Industrial AreaS* (RI-URBANS) will develop Service Tools that will provide novel insights into spatio-temporal variability of air quality parameters, population exposure and air quality health interactions. This will enable us to reduce air pollution in European cities and industrial hotspots. The project takes on board advanced research-driven Air Quality (AQ) observations at selected European pilot cities. By combining Air Quality Monitoring Networks (AQMN) and Ris advanced science knowledge and innovative technologies, RI-URBANS deploys tools and information systems in the hands of citizens and communities to support decision-making by AQ managers and regulators. These will enhance the AQMNs capacity to evaluate, predict and mitigate the impact of air quality AQ on human health. The pilots, scaling to different cities, are collaboration between ACTRIS RPOs and city level AQMN operators. The work performed in RI-URBANS will strongly support the capacity building on local / city level.

4. Strategic plan to enhance national and regional ACTRIS activities and impacts

This section summarizes the supporting structures and interactions that are required to ensure the local, national and regional impact of ACTRIS. We categorize the section in impact categories related to: i) human capital, ii) science, iii) innovation and iv) economic impact.

The overarching strategic goal for the ACTRIS for maximizing national and regional impacts is based on i) scientific excellence, ii) open interaction between national consortia and European Ris for scientific and technological development, and iii) user-driven and community driven technology and data product development based e.g., on input from national consortia, new users and societal needs.

4.1. Supporting structures within ACTRIS

Ensuring support through well-established and organized internal ACTRIS governing structures

ACTRIS ERIC and its management structures need to be in place to strengthen global impact of ACTRIS. On one hand, the regular and well-structured interaction with the national consortia facilitate implementation of ACTRIS strategies on a national level. On the other hand, the structured workflow also allows national and regional interests to gain higher impact on European level through ACTRIS ERIC. As a guiding principle, it is important to keep the internal bureaucracy as optimized as possible.

The ACTRIS CFs are directly connected to ACTRIS ERIC, but their operations are hosted by RPOs through which they connect to their respective national consortia. This enhances the national impact of ACTRIS particularly in innovation, scientific impacts and potential economic impact in the hosting nation. This will also enhance visibility of ACTRIS nationally.

Ensuring collaboration between the national consortia

Collaboration between the national consortia Within ACTRIS are identified as critical steps in enhancing the ACTRIS impacts as a whole. Furthermore, in specific regions, the ACTRIS national consortia and society at large face similar obstacles, opportunities and interest. For example, based on close cultural connections in the Nordic countries, collaboration between ACTRIS-FI, ACTRIS-SE, ACTRIS-DK and ACTRIS-NO towards joint regional activities is a possibility that would enhance e.g., visibility of ACTRIS in the Nordic countries and regional scientific or technological impacts. Similar clusters can be identified either based on historical connections, similarities between the societal challenges in relation to e.g., regional air quality or even pooled financial support between different countries in the region. The regular meetings between the National Contact Points enable us to identify these opportunities.

Supporting co-location of ACTRIS NFs with other Ris

One strategic way to enhance ACTRIS impact in all aspects is co-location of ACTRIS NFs with the facilities of other Ris. This will provide a wider platform for education and training. The scientific impact will be more comprehensive as the different Ris have their own focus and their integration can enhance the integrating science impacts. The innovation actions can be connected and interlinked between the different Ris facilitating a larger impact and the economic impact of operating the co-located NFs are both

more cost effective but also more invigorating to the region via hiring a wider variety of experts to work at the stations.

4.2. Increasing regional impact on human capital creation

The ACTRIS NFs are operated by the RPOs, which are often either higher education organizations or closely linked to them. This opens an opportunity to increase national impact related to education and training. In practice, the development, operation, maintenance and upgrading of a research infrastructure offer important opportunities for strengthening human capital creation, through supporting educational activities, facilitating scientific co-operation, and creating employment opportunities in specialized and high-level positions. Research infrastructures are stimulating and dynamic places, giving to young fellows and Ph.D. students the opportunity to interact with other students and scientists from different contexts.

The RI operations offer training both in performing the scientific tasks but also provides opportunities for development of transferable skills. On local, national and regional level, ACTRIS can increase the impact by involving the students in meetings, seminars, workshops, conferences and other events. This allows the students to develop their technical and scientific abilities and personal skills e.g. in the communication, managerial, negotiating and organizational capabilities. With some adjustment most of the skills acquired in ACTRIS can be utilized even in domains outside their own research field. In addition to human capital formation for students, some skills can also be acquired by scientists, engineers and technical staff working at the research infrastructure in the context of on-the-job learning. In essence, ACTRIS will train experts in technologies, science and dissemination that have capacity to later transfer to the local, national or regional levels.

At the moment, ACTRIS is organizing a technology and observation-oriented course (Hyttiälä-course, every May). The ACTRIS CFs and DC are organizing targeted workshops and training for e.g., data submission and data quality control. As new user groups are identified, there is a need to expand and develop ACTRIS education in the future.

Follow-up regarding the human capital creation will be compiled from the annual summaries requested from the National Consortia.

4.3. Increasing impact on scientific activity

As expected, the development and operation of a research infrastructure has a significant impact on the creation, further development, and diffusion of scientific knowledge not only at the European level but also locally, nationally and regionally. The outcomes based on or supported by the RI curated data or services will lead to peer-reviewed works in scientific journals, conferences, etc., and the data will be available through ACTRIS DC so that it can be used by the whole scientific community. This will enhance the scientific weight of Europe as a whole.

Also, through its access policy ACTRIS aims to be a pole of attraction for scientists and scientific groups from different countries or other organizations at national level, who are interested in carrying out part of their scientific research in the infrastructure in question. This enhances scientific co-operation, facilitates the diffusion of knowledge and the scientific dialogue, while organizations operating the infrastructure gain reputation and recognition. All these result in attracting additional funding for research and

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development, which is very critical for the sustainability and enhancement of the local nodes of ACTRIS in a competitive environment.

First ACTRIS science conference was organized in May 2022. As a strategic goal, ACTRIS should aim to organize a regular science conference that is covering ACTRIS components. This is important for ACTRIS visibility in scientific communities and helps integration of ACTRIS science. This will also consolidate ACTRIS brand in the science and technology development in atmospheric sciences.

Specific workshops or conferences to support cross-RI scientific work should be organized in collaboration with other RIs. The national and regional aspects should be incorporated into national or CF organized meetings. This allows coverage of local aspects as well. The national ACTRIS activities should be closely connected with science performed at the RPOs. This will also increase the visibility of ACTRIS towards national funding agencies and will allow novel scientific outcomes and even initiate new possibilities for further funding and impacts for the scientific fields close to ACTRIS.

4.4. Increasing impact on innovation

ACTRIS supports innovations and has an impact on the innovation landscape from global, European, national, regional and local scales. On a general level, ACTRIS IMP WP3 and WP9 are working on ACTRIS innovation policy and strategy at the RI level. The ACTRIS draft innovation strategy (ACTRIS IMP D3.1) has been already developed and more details of the RI level strategy can be found therein.

ACTRIS as a multi-layered research infrastructure is an important source of innovation through several ways. First, the cooperation of the RPOs in the development and operation contributes to the diffusion of knowledge and facilitates technological transfer within ACTRIS framework. Thus, the RPOs in local, national and regional context acquire additional experiences, skills, and technical knowledge, which help them to participate in international research consortia in this scientific field. Dealing with complex phenomena and operating unique instrumentation at the edge of the science is very likely to generate technological and industrial innovations. This facilitates the development of collaborations between the research community, industry and other stakeholders wishing to utilize or advance further these technological innovations in their production processes, decision-making, etc.

ACTRIS national consortia are in a crucial role in providing pathways to the private sector as many companies operate locally or regionally and the national consortia know their local innovation environment the best. An additional innovation outcome associated with the development and operation of research infrastructures is the creation of spin-offs or start-ups, aimed at commercializing achievements developed in the research infrastructure. The technology and knowledge generated from ACTRIS diffuses into the market in the form of innovative products, processes, or services. The new innovations, as they are implemented within ACTRIS offer proof-of-concepts and after productization, improve their sales and technological performance in a verified manner.

Overall, in innovation ACTRIS should aim for wider implications on the research community and scientific knowledge, as organizations not directly involved in the operation of the research infrastructure can benefit from the results and products generated by using them to develop new or improve existing methodological approaches and tools in various fields. The innovations developed within ACTRIS CFs and

in the participating RPOs can be applied to a wider field of science and therefore will impact the innovation environment in the region.

The innovation activities within ACTRIS should be connected to the technological development in other environmental RIs in order to facilitate interoperability, when applicable. This will enhance the impact.

4.5. increasing economic impact

ACTRIS is pan-European RI and addressing its economic impact comes from the full range of RI operations, such as developing, maintaining, upgrading, and operating the RI. For the period of 2008-2016, ACTRIS PPP D8.1 (Report on KPIs for the quantification of ACTRIS direct impact), 2018, evaluated the total amount of spending of 436 million EUR in the aforementioned categories. Approximately 33% of these costs concerned the development of ACTRIS infrastructure, 19% maintenance and upgrading activities, while the remaining 48% was related to its operation through the implementation of various research programs and scientific activities. The work was based on information received from national consortia. However, some countries did not respond to the survey, and at the same time, the ACTRIS number of participating countries has increased. Therefore, the total spending associated with the research infrastructure in question over the period considered is expected to be even higher.

According to the ACTRIS PPP D8.1, the steps towards construction of ACTRIS has had significant macroeconomic implications and they found out that for every € 1 million spending in developing and maintaining ACTRIS infrastructure the European economy has benefited through an increase of the value added by € 1.41 million and the creation of 22.5 person years of new employment.

Increasing the local, national and regional economic impacts, it is critical to connect the ACTRIS work directly to transformation of the economies to clean technologies and green transition. ACTRIS will offer high-quality observational data to monitor these transformations and their impacts into the environment.

Appendix A

Short updates from NCPs per country (from National Contact Person meeting held in 27th January 2022). Some relevant points can be extracted from the text below. It should be noted that there has been progress in the work of ACTRIS national consortia since then.

Austria (Jochen Wagner): Consortium is stable with seven partners, 4 NFs planned, and two CF units hosted (in CIS and CREGARS). There is good communication within the consortia. Common projects ongoing; the projects are enhancing the communication between the partners and people have got to know each other better. Physical meeting with the national consortia was organized in October 2021.

Belgium (Martine De Maziere): The ACTRIS-Belgium meeting was organized just before this meeting. There are 4 RPOs and 5 NFs (4 observational platforms and 1 mobile platform). These are supported by a project ending this year. On the federal level we have a commitment for funding until the end of 2022, and just now received information that there is also a commitment in the Walloon level and funding will be received. Implementation is progressing well, and the NF labelling shall go forward as planned. Belgium is leading the CREGARS (altogether 3 units hosted by Belgium) and the CF implementation is in good progress. Some of the services are already starting to be operational. Funding gap in the next year is possible (at least for 6 months). For some of the RPOs there is competition between ICOS and ACTRIS funding. As there are some uncertainties related to the requirements for mobile platforms, there can be delays in their implementation. In general, not all the changes made so far to the NFs are in line with the newest guidelines and thus this may cause delays.

Bulgaria (Nina Nikolova): MoU has been signed between 2 institutions (Institute for Nuclear Research and Nuclear Energy, Institute of Electronics - Bulgarian Academy of Sciences). ACTRIS has been on national roadmap for RIs since 2017. There are two NFs: BEO Moussala and Sofia Lidar Station. Implementation is ongoing.

Cyprus (Jean Sciare): 2 partner organizations: Cyprus Institute and Cyprus University of Technology. 4 NFs for ACTRIS (3 observational platforms and 1 exploratory platform). Capacities for TNA are being developed. Government support is existing (shared between ministries).

Czech Republic (Milan Vana): National Consortia was established in 2013. There are 4 partners in the consortia and new partner joining in 2023. ACTRIS has been on the national roadmap (of large RIs) since 2016. Currently the ACTRIS-CZ is being implemented. There are 4 NFs. The main site is Kosetice (with AIS, RTGIS, ARS). Ministry of education is supporting ACTRIS. Financial support is guaranteed until the end of 2022. ACTRIS-CZ hopes to continue the funding as it has received the best possible score in the national RI evaluation. To be noted that there is a new government in place.

Denmark (Henrik Skov): National funding has recently been obtained from the Danish ministry and Denmark will be a founding member of the ACTRIS ERIC. ACTRIS-Denmark consortium has been established between the partners: CA signed last year. There are 4 NFs (2 observatory and 2 exploratory platforms). Villum Research Station (Aarhus University) is already well established. The building of the laboratory (photochemical reactor) of the University of Copenhagen has been delayed for many years

already but the implementation is foreseen. Yearly meeting of national consortium was organized recently.

Estonia (Steffen M. Noe): There is no national ACTRIS funding yet in place. The research cooperation is stable. There is a group of scientists advising on air quality matters in the ministry: participating to meetings and providing advice. ACTRIS-Estonia hopes to get a better grip on the ministry level; fluctuations in the ministry personnel causes problems.

Finland (Tuukka Petäjä): ACTRIS-FI development (NF implementation) is ongoing. ACTRIS-FI will participate in the pilot ACTRIS NF labelling with SMEAR II (Hyytiälä) and Pallas stations. ACTRIS-FI with 4 partners is well established and organizes regular meetings. ACTRIS-FI partners have joint RI funding and funding jointly also with ICOS-FI, eLTER-FI and AnaEE-FI. From the scientific perspective the co-location of sites is beneficial; RI co-location provides possibilities for multidisciplinary research. From the funding perspective this is a challenge as the funding needs to be divided to several RIs. Finland hosts units in 5 CFs (HO, DC, CAIS-ECAC, CiGas, CCRES). ACTRIS-FI has started collecting the ACTRIS-FI publications. From the NCP meetings we hope the sharing of expertise on how to optimize cost-effectively the harmonization of observations as ACTRIS is a very wide and multicomponent RI.

France (Stephane Sauvage): France will be a founding member of ACTRIS ERIC. France participates in 6 CFs, has 8 NFs and has been on the national RI roadmap since 2016. There was a roadmap evaluation last year and France has received an extension to the roadmap status for the coming 4-year period. Funding: major support from 23 RPOs (it should be noted that one CF unit or NF may involve even 5 RPOs). National CA for ACTRIS-FR has been signed considering that some RPOs want to be in the cooperation agreement, and some do not. Challenge: make ACTRIS clear to all RPOs (in terms of funding model etc.). ACTRIS-FR organizes meetings regularly and tries to figure out all potential issues that may hinder the process of signing the contracts. ACTRIS-FR publications to be compiled.

Germany (Ulla Wandinger): ACTRIS-D is on the National Roadmap for Research Infrastructures. The ACTRIS-D consortium consisting of 11 institutions was formally established with the start of the roadmap projects in the summer of 2021. Three ministries provide support for either the implementation (BMBF) or the long-term operation of CF units (BMUV, BMDV). There are two national implementation projects ongoing (2021-2026), one to implement the 12 TC units hosted by Germany (13 M euro) and one to support the upgrade of more than 20 NFs (61 M euro). ACTRIS-D organizes two meetings per year, one in the form of an annual conference and one as a virtual project meeting. The first annual ACTRIS-D conference took place in June 2021. Challenge: funding to support the TC operations is currently (autumn 2022) still blocked as the ACTRIS ERIC has not yet been established – funding is not flowing to the CFs.

Greece (Nikos Mihalopoulos): ACTRIS-Greece has 7 partners and 8 NFs working closely together (common projects) and having regular meetings. Challenges: the funding for the Greek ACTRIS is secured only until the end of this year. Re-evaluation of the RIs will be done (altogether 27 national RIs) in the coming months. 2022 will be a critical year for ACTRIS-Greece from the funding perspective (national funding and membership fees: trying to get the ministry to fund 50% of the fees).

Ireland (John Wenger): The situation in Ireland remains unchanged. The two main RPOs are active and self-funded. Ireland has no national RI roadmap and there is no formal approach for interested parties to join an ERIC. Informal communications with relevant government agencies and departments have been initiated but this does not seem to be fruitful at present.

Italy (Lucia Mona): 5 RPOs, 10 NFs (incl. 3 exploratory platforms and 7 observational platforms) and several CF units hosted. Good cooperation and common projects in the national consortium. Implementation ongoing; all the NFs are testing and tuning the instruments and the NFs are already in good position regarding the NF labelling. A new project (ITINERIS) starting on 1 Nov 2022 will fund research advancement and integration between different RIs in the environmental domain: resources for both instruments, ICT, personnel and training.

Challenges: Delays (e.g., electronic components) due to covid but this has not been a major problem.

Netherlands (Arnoud Apituley): National RI roadmap project is in place (for 4 years) and it is running well. This project is a combined effort of ACTRIS and ICOS joint at the national level. In the project there are 8 partners. Main ACTRIS NF: Cabauw. Second NF under development. Also mobile platforms are planned to be part of ACTRIS in the future (one existing and more under development). Netherlands hosts also CF units (in CCRES, CREGARS). Roadmap update will be done, and we will resubmit the ACTRIS-ICOS project. Joining in the ACTRIS ERIC - process is still stalled. New government is in place and thus new people to be addressed to get the process going. Important year for ACTRIS-NL to push the ACTRIS ERIC process forward.

Norway (Tove Svendby): We have 3 aerosol in situ NFs and their funding is in a good shape. However, remote sensing component at Alomar station had to withdraw due to lack of funding. ACTRIS-NO has recently received national funding (4 milj. euro) and is on the national roadmap starting from 2022. Implementation of the DC is ongoing. Cathrine focuses on leading the DC and coordinating the national level activities. Norway will change its ACTRIS NCP from Cathrine to Tove Svendby (NILU). Tove has worked with ACTRIS matters already for years (e.g., with ACTRIS cost books). It would be helpful to have a document describing the tasks of the NCPs and the mandate of the NCP.

Poland (Aleksander Pietruczuk): ACTRIS-PL is on the national roadmap. The national consortium currently has 8 partners (RPOs) that are developing three observational platforms in western and southern Poland, two in central Poland, one additional observational platform is planned in a co-location with the planned ICOS tower (current location not specified), and one experimental mobile platform. Two NFs will be ready within one year. The other observational platforms and the mobile platform are under development beyond 2024. The signing of ERIC is crucial to secure funds for development of facilities and operation of them.

Portugal (Daniele Bortoli): Last year there was a call from the ministry to update the national RI roadmap. The roadmap application was submitted to the ministry early 2022. Possibility to get to the Portuguese RI roadmap this year. National consortium is formed (8 RPOs) and it has 2 observational platforms and 1 mobile platform. In the next month there is a possibility to present a project to be funded in relation the

roadmap. Portugal is not yet in ACTRIS ERIC and the decision on joining the ERIC can be done only after ACTRIS has been accepted to the national roadmap.

Romania (Flori Toanca replacing Doina Nicolae in this meeting): There are 5 partners in the national consortium with MoU signed 2013. Last year a joint research unit was established. Funding: each partner has applied large RI -funding separately, most of the funded projects continue until 2023. Romania has 4 observational and 2 exploratory platforms and is leading ACTRIS TC CARS.

Spain (Adolfo Comeron): ACTRIS is on the Spanish state general budget for 2022 and 2023. Letter of support was provided by the ministry in July 2022 and thus Spain will be joining the ACTRIS ERIC as a founding member. MoU between the national consortium partners was signed in 2013 and a joint research unit was established in 2021 to facilitate the agreements between the RPOs and the ministries.

Sweden (Erik Swietlicki): Swedish Research Council has granted a project for ACTRIS-Sweden. Total project budget is 14 M euro for 4 years (RPOs need to fund 50% of the project costs). ACTRIS ERIC membership fee is already in the state budget. There are 6 RPOs in ACTRIS-Sweden. Soon ACTRIS-Sweden will ask for help from the HO to contact the Swedish Research Council regarding entering the IAC. Three aerosol in situ sites are already running and submit data to NILU. The sites are collocated with ICOS-Sweden. New aerosol in situ site is under development and a mobile platform is planned.

Switzerland (Martin Gysel-Beer): Funding for implementation for 2021-2024 exists and new partners have been included. There are regular meetings to ensure the integration of the new partners. Funding for the next period (2025-2028) is under negotiations. Switzerland is participating in the activities of CARS but they are not yet visible there as the ERIC has not yet been established. Implementation of the Swiss NFs is ongoing. Switzerland is not part of the EU Horizon but this has no effect on Swiss participation in ACTRIS ERIC. Any information of ACTRIS ERIC establishment is important.

UK (Geraint Vaughan): In the UK, a decision in principle has been made by a consortium of stakeholders to pay the national subscription between them. Discussions are currently under way on the nature of the agreement between them and which organization will take the lead. Because of the current political situation, presenting a case to Ministers for a formal decision on UK involvement will likely introduce considerable delay.