



Proposed TNA pilots for public authorities

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1. Introduction

This document is the outcome of activities within Task 6.4, which has explored new trans-national access (TNA) modalities for public authorities (Leader: NOA, participants: UCC, INOE, CNRS, FZJ). Public authorities (PA) responsible for measuring, reporting and acting on air pollution (local government, civil protection and environmental/ health agencies) need atmospheric measurements. Atmospheric Research Infrastructures (RIs) have excellent potential to support the efforts of public authorities in this area. The purpose of this task has been to identify the specific needs of public authorities, develop tailored modalities for access to multiple components from the atmospheric RIs and propose a TNA pilot involving the ATMO-ACCESS European atmospheric research facilities and public authorities from Europe (Figure 1). The proposed TNA activity involves flexible access modalities and tailored services in support of informed decision making by public authorities.



Figure 1: A brief presentation of a) overview and b) concept of Task 6.4: New Access Modalities for Public Authorities, given at ATMO-ACCESS meetings (1st SSC and Kick-off meeting).

During the course of this task, the user needs for specific services and access modalities were explored through numerous engagement events and modes of interaction (2 workshops, 2 working group meetings, a webinar, 2 bilateral calls, 2 online surveys) with representatives from (approx.) 20 public authorities in 6 countries of Europe (and from European Organizations). Concurrently, the interaction between the stakeholders and the RI experts during these events enabled the co-design of the tailored services and access modalities, which may be included in the TNA pilot. Through these events, several reasons were identified for the lack of interest and contingency from public authorities for the access opportunities. The inter-connection with European bodies and initiatives (e.g. ICLEI-EU, ACTRIS, RI-URBANS) intensified the information exchanges, the collection of needs at the EU level and the wide publicity of the proposed TNA opportunity.

2. Methodology

The methodology that was followed to ultimately identify the overall concept and specific components of the proposed TNA to RIs by PA, is composed of 5 main steps (Figure 1):

1. The connection of ATMO-ACCESS to a wide network of public authorities. Interaction between stakeholders and providers was performed through engagement activities, which are briefly shown in Figure 1, and thoroughly discussed in Section 4. The networks that were reached are given in Section 3, while the broad list of public authorities involved in Task 6.4 is given in Annex I. All engagement events were open to representatives from the RIs, which allowed the co-design of the potential TNA pilot. User needs with respect to atmospheric monitoring, data, services, tools and expertise was the main topic of discussion in all engagement events.

2. Each engagement event identified specific user needs which were expressed and co-designed by the participants. Two lists are given in Section 5.1, with the user needs grouped by topic and access modalities.
3. The service-related needs identified through interaction with the public authorities were assessed with respect to innovative aspects, high possibility of attractiveness to a broader audience and match with the services provided by the RIs. According to these criteria, the topic given in Section 6 was selected.
4. Then, the potential topic was communicated with the ATMO-ACCESS facilities to identify the potential providers. One- and two-way interaction activities with these stakeholders led to the co-design of the components and characteristics of the TNA offered by the facilities.
5. A combination of facilities and access modalities was decided to form the proposed TNA call, with the goal of flexibility and inclusivity to satisfy all needs. The proposal is analytically presented in Section 6.

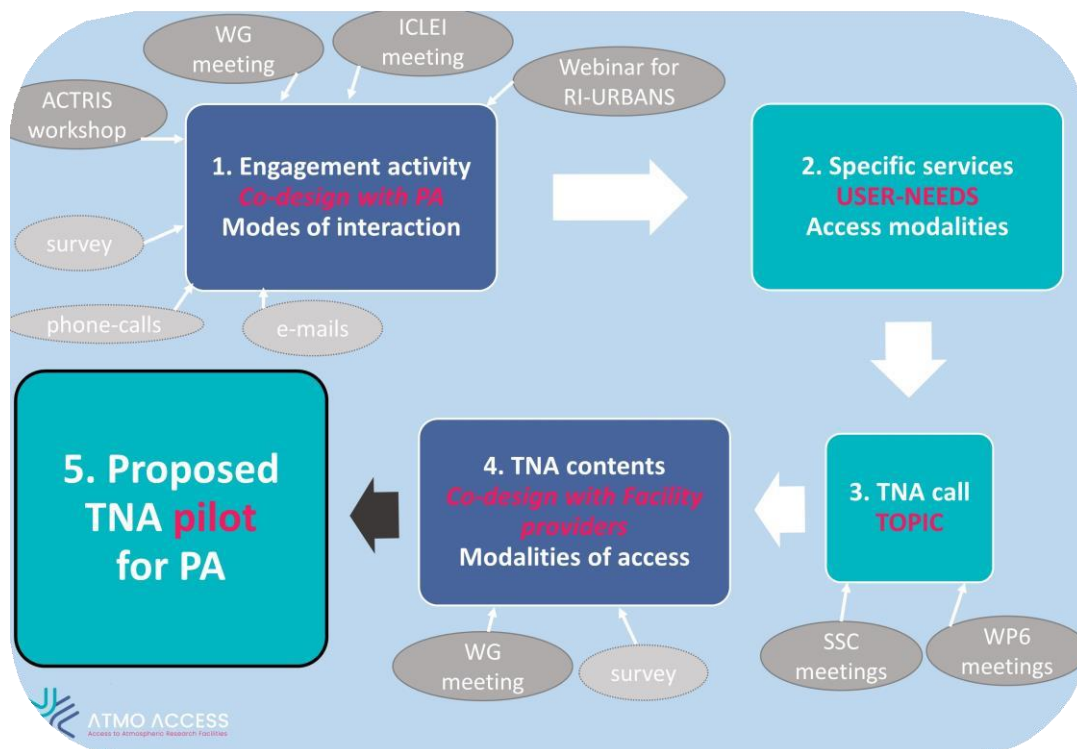


Figure 2: The workflow for Task 6.4: New Access Modalities for Public Authorities. Rectangles in blue indicate processes, which were supported by several modes and types of interaction (in grey). Rectangles in green indicate the intermediate and final outputs.

The timeline of all engagement events and main outputs of Task 6.4 is given in Figure 3. As evident, representatives from public authorities participated in the activities of the task within the first 2 years of the project. During the 3rd year, user needs were processed towards a proposal of a TNA topic. The final proposal was co-designed with the facility providers interested in and capable of covering the selected need and topic.

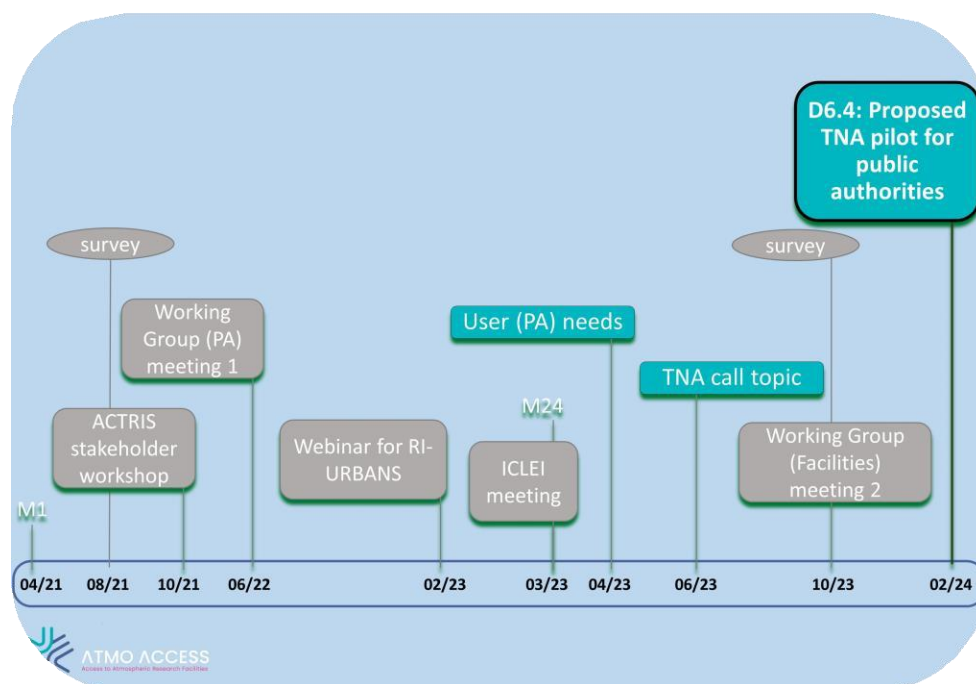


Figure 3: The timeline of all activities and main outputs of Task 6.4, towards a proposal for the public sector for TNA to ATMO ACCESS facilities.

3. Liaison with targeted networks

To intensify the participation of stakeholders in the development of the pilot TNA for public authorities, there has been a continuous and systematic effort to liaise with communities and networks of potentially interested parties. Below is a brief reference to each, with more details listed in Table 1:

ACTRIS members and stakeholders: ATMO-ACCESS organized a [stakeholder workshop](#) in the frame of ACTRIS week, October 2021. Task 6.4 had a dedicated interactive session with public authorities and facility providers who attended ACTRIS week. More than 160 people attended the 3.5-hour virtual meeting. A detailed internal report on the workshop can be found [here](#), while its outputs focused on Task 6.4 are given in Section 5. All participants were asked for their interest in a potential TNA for PAs to access atmospheric RIs and positive replies have formed the 2 initial lists provided in Annex I.

ICLEI-EU network: Task 6.4 connected with staff in the European section of ICLEI (September 2022) for the promotion of access to the ATMO-ACCESS facilities by stakeholders from the public authorities. Representatives from the local authorities of 12 European cities were contacted (*Lisbon, Madrid, Vitoria-Gasteiz, Izmir, Gdynia, Dundee, Mannheim, Cascais, Utrecht and Riga, Barcelona, Tartu and Calvia*) for a [webinar focusing on Task 6.4](#) (March 2023). A detailed report on this webinar can be found in Annex II, while its outputs are incorporated in Section 5. All interested parties to the activities of the task have enriched the PA list provided in Annex I.

RI-URBANS stakeholders: the connection with this relevant project is two-fold: a) the task 6.4 leader was invited to an online meeting, to explain the possibilities of atmospheric monitoring, data, products and services offered to the public authorities, through their TNA to the big European facilities. The Polish stakeholders participating in this meeting, represented 23 National institutions (incl. public authorities) dealing with atmospheric research and air quality issues. A detailed report on this webinar can be found,

while its outputs are incorporated in Section 5. All interested parties to the activities of the task have enriched the PA list provided in Annex I. b) a broad contact list created in the frame of RI-URBANS activities, was shared with ATMO-ACCESS to help raise awareness of the proposed TNA call for PAs. These contacts have enriched the PA list provided in Annex I.

Facility providers: The PIs of all facilities/ members of ATMO-ACCESS were invited -through e-mail and during the [workshop hosted in ACTRIS week](#)- to declare competence, availability and intention to provide TNA for PAs. These declarations formed the list of facility providers provided in Annex I, who were invited to participate in all interactive activities in the frame of Task 6.4. Their input and preferences on the suggested pilot are given in Section 5. In addition, the PIs of the facilities were asked to suggest representatives from the public sector, who would potentially show interest in a TNA pilot. These contacts have enriched the PA list provided in Annex I.

Table 1: List of liaison networks used in Task 6.4 to raise awareness for and co-design a TNA opportunity for the public authorities on atmospheric research air quality issues and support.

No	Network	Logo / Website	Short Description
1	ACTRIS members and stakeholders	 https://www.actris.eu/actris-stakeholders	A pan-European research infrastructure producing high-quality data and information on short-lived atmospheric constituents. Its stakeholders originate -among others- from public services, from countries inside and outside Europe.
2	ICLEI-EU network	 https://iclei-europe.org/our-members/	ICLEI Europe's Members represent local governments and governmental associations
3	RI-URBANS stakeholders	 https://riurbans.eu/project/#stakeholders	The project has a Stakeholders Board to intensify an optimised collaboration between the beneficiaries representing AQMNs and European RIs (notably ACTRIS and IAGOS) at the local, national and European levels.
4	Facility providers	 https://www.atmo-access.eu/facilities/	A network of European atmospheric research facilities, which provide access to -among others- the public sector in the framework of ATMO-ACCESS

4. Modes of interaction - Engagement events

This section lists (Table 2) and summarises (Sect. 4.1-4.7) all modes of interaction and engagement events in the frame of Task 6.4. Analytical details can be found in Annex II, while the overall output of this activity is provided in Section 5.

Table 2: Engagement activities with stakeholders (public authorities, facility providers and others) while developing a TNA pilot for public authorities to access atmospheric research facilities.

No.	Name	Date	Mode	Audience	Scope
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1	Survey No 1	August 2021	Online questionnaire	Facility providers	Identification of interest in providing access to public authorities
2	Stakeholders workshop	27 October 2021	Virtual event (presentations and survey)	Facility providers, potential users (public sector included), project consortium, ACTRIS members and stakeholders	Gather information about the type of services, facility, as well as type and mode of access, that can be provided (access providers) and is asked (potential users).
3	Working Group Meeting 1	16 June 2022	Virtual event (presentation, discussion and poll)	Facility providers, potential users from the public sector	Co-design the ways (e.g. topics, instrumentation, modes of access) research facilities can address the needs of public authorities in relation to air quality monitoring.
4	Invited webinar for RI-URBANS Polish stakeholders	23 February 2023	Virtual event (presentation and discussion)	Potential users from the public sector of Poland	Raise awareness on this TNA opportunity.
5	ICLEI-EU meeting	16 March 2023	Virtual event (presentation and discussion)	Potential users from the public sector	Raise awareness on this TNA opportunity, identify user needs about type of services, facility, as well as type and mode of access
6	Working Group Meeting 2	30 October 2023	Virtual event (presentation and discussion)	Facility providers	Co-design a potential TNA activity focused on the challenges -introduced for the public sector- of the upcoming revised EU Ambient Air Quality Directive.
7	Survey No 2	November 2023	Online questionnaire	Facility providers	Register the capacity to support the public sector for the upcoming revised EU Ambient Air Quality Directive.

4.1 Survey No 1

An online questionnaire (Figure 4) was issued by WP6 of ATMO ACCESS in August 2021, to gather the initial interest of access providers (representatives of the RIs participating in the project). Twenty-one (21) out of the 30 participations (70%), expressed their interest in the pilot for public authorities (Task 6.4), who are listed in Table 4. The responders represent 17 Organizations from 12 countries (Spain, Italy, France, Netherlands, Greece, Switzerland, Romania, Check Republic, Germany, Ireland, Portugal, Sweden). This survey allowed for input from access providers on the nature of the pilots (Annex II). The responders to the questionnaire proposed potentially interested stakeholders, who were integrated in Table 3.

TNA(s) for public authorities

Objective: to design pilot TNA(s) for public authorities that need access to atmospheric measurements for routine monitoring or the characterization/assessment of atmospheric episodes e.g. industrial accidents, air pollution events, extreme weather and related natural hazards.

Example of a potential pilot: Provision of air quality information by involving ATMO-ACCESS TNA providers operating (in situ) Atmospheric Observation Facilities and/or Mobile Platforms. Simulation Chamber Facilities and Central Laboratories could also be involved by providing information on cal/val of sensors and networks, threshold assessment support, exposure studies and source identification.

Contact person: Eleni Athanasopoulou, eathana@noa.gr

- Are you interested in contributing to the development of a pilot in this area? Y/N boxes
- Are you interested in contributing to development of the proposed potential pilot? Y/N boxes.
- Do you have any ideas for other pilots in this area? Y/N – If yes please provide details.
- Please provide contact details for other organizations, institutes, companies, public authorities or individuals that you think may be interested in contributing to the development of a pilot in the area or in exploiting the atmospheric data/outputs that may be generated.

Figure 4: A snapshot from part of the survey with questions dedicated to facility providers open for public authorities. Image source: ATMO-ACCESS [Deliverable 6.1](#).

4.2 Stakeholders workshop

In the frame of the activities of WP6, a stakeholder workshop was organized on 27 October 2021. The aim of this half-day workshop was to provide an opportunity for operators and potential users of research facilities in ATMO-ACCESS to contribute to the development of new transnational access pilot studies for atmospheric research infrastructures. To this end, short presentations of WP6 and its tasks were given, followed by interactive discussions and a thorough Slido poll (Figure 5). More than 160 people attended the 3.5 h virtual meeting. More information on the workshop can be found [here](#). The main outputs relevant to Task 6.4 can be found in Annex II.

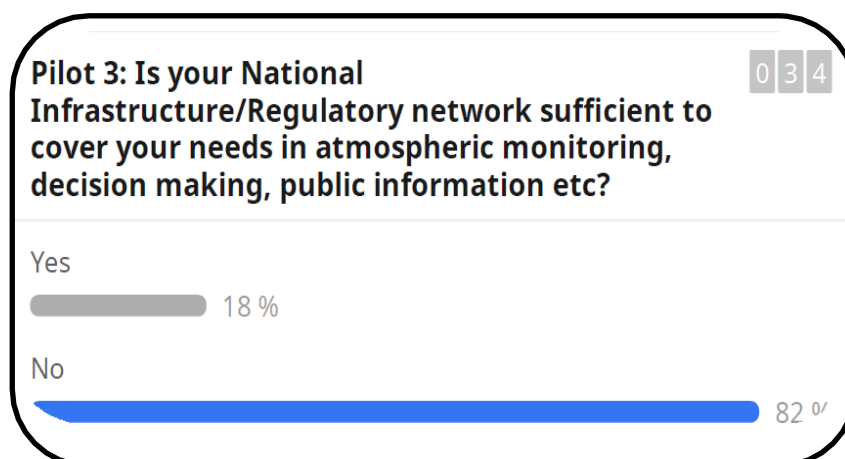
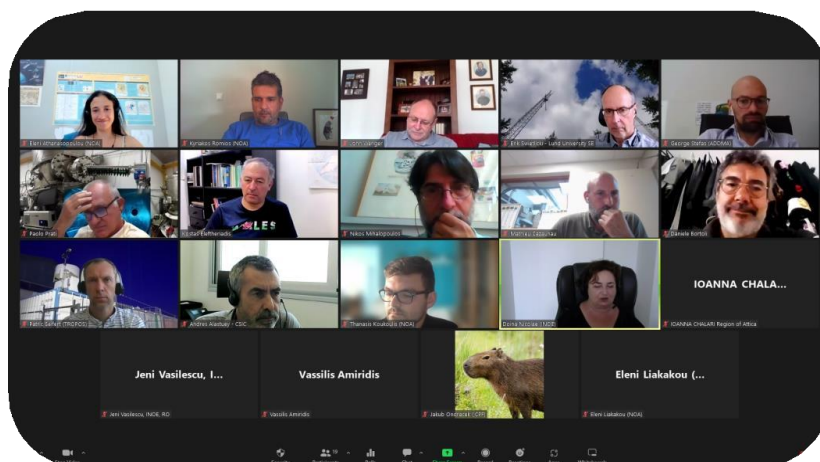


Figure 5: A snapshot of the feedback about one of the questions -dedicated to Task 6.4- posed to the ACTRIS stakeholders' workshop, October 2021.

4.3 Working Group Meeting 1

All interested parties gathered from the two previous interactive activities¹ formed the working group of Task 6.4. On 16th June 2022 the first working group meeting took place virtually and involved 23 Participants from 16 Organizations (Figure 6). All but two members of the meeting represented the ATMO ACCESS



facilities to be accessed by public authorities (PA) in the frame of the upcoming and targeted TNA call. The minutes of this meeting are provided in Annex II.

Figure 6: A picture of the 1st (zoom) meeting of the working group of Task 6.4 (June 2022).

4.4 Invited webinar for RI-URBANS

On February 23, 2023, the potential TNA pilot for PAs was presented in the frame of the Polish stakeholders' meeting Figure 7. More than 30 representatives from 23 Organizations attended that hybrid meeting (physically and virtually). The objectives of the presentation were to communicate the services offered by the Atmospheric Research Infrastructures that are relevant to public authorities, attract the interest of the Polish public authorities by providing examples of the benefits from using ATMO-ACCESS services and give information about how to apply for TNA through ATMO ACCESS.

¹ The invitation for this WG meeting was sent to people from facilities and public authorities, who volunteered in participating through survey and ACTRIS workshop. The project office forwarded the invitation to the National contact points, and receivers were asked to forward to any potentially interested party. ~40 invitee



Figure 7: (left) Snapshot of the post on the social media, about this common project activity in the frame of Task 6.4, (right) the agenda of this meeting, where Task 6.4 leader was invited to discuss about TNA opportunities of public authorities in the frame of ATMO-ACCESS (March 2023).

All participants gave very positive feedback about the TNA opportunity, and specifically about the new knowledge they acquired on what can be accessed and how they can achieve remote access. Most participants found the co-design element to be very important and useful. The minutes of this meeting can be found online [here](#).

4.5 ICLEI-EU meeting

On October 2022, interactions with ICLEI-EU staff focused on raising awareness about the ATMO-ACCESS TNA for PA. Ultimately, a virtual meeting was convened on 16 March 2023 (Figure 8), with attendees from the City of Utrecht (The Netherlands), Izmir Metropolitan Municipality (Turkey) and the Regional Development Fund of Crete (Greece). The feedback from all participants to a poll taken during the meeting is given in Annex II, while the main outputs of this meeting are integrated into Section 5.

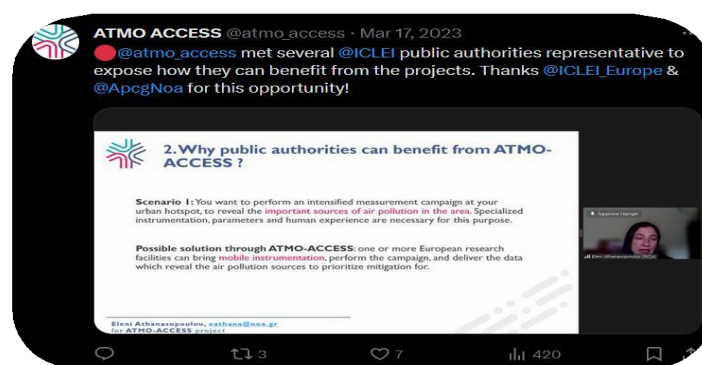


Figure 8: Snapshot of the social media post (March 2023) about potential TNA to ATMO ACCESS facilities presented to the ICLEI-EU network of public organizations.

4.6 Working Group Meeting 2

After processing the integrated feedback gathered from the events, together with WP6, WP4 and coordinators (April - June 2023), the idea of preparing a TNA call focused on supporting public authorities with the upcoming revised EU Ambient Air Quality Directive became the most appealing. To this end, a working group, composed of representatives from observational platforms capable of supporting this type of activity, was created through e-mail contacts within the ATMO-ACCESS network, which gathered the eight (8) expressions of interest. This working group held a meeting on 30 October 2023 (Figure 9) to discuss the specific provisions of each facility with respect to the topic, the period of availability for TNA by the public authorities, the type of access (physical, remote, virtual) and other specificities for this pilot activity. The analytic description of this event is given in Annex II.

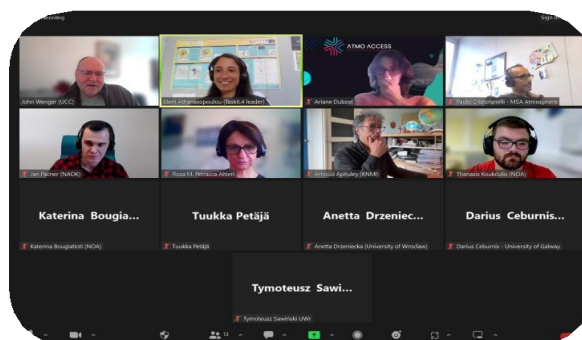


Figure 9: A picture of the 2nd (zoom) meeting of the working group of Task 6.4 (October 2023).

4.7 Survey No 2

The 2nd survey issued in November 2023 targeted the facility representatives who expressed interest and capability to support the TNA activity titled “Challenges for the public sector to meet the upcoming revised EU Ambient Air Quality Directive”. The questions were split in 3 sections:

- Section 1: Please, select your contribution to the preparatory webinar/ virtual training of public authorities (prior to their visit to your facility),
- Section 2: Please, select the topic(s) you wish your facility provides support to the visiting PAs and
- Section 3: Please, select the modality of access offered by your facility. Then, indicate the timeframe your facility is available for this pilot.

A snapshot of this survey is shown in Figure 10, while answers are given in Annex II.

General Topic of the transnational access (TNA) to the facilities by public authorities (PAs): Challenges for the public sector to meet the upcoming revised EU Ambient Air Quality Directive									
Please, take 5-10 minutes to fill in the below survey, comprised of 3 parts regarding your preferences/availability for: 1) the webinar/ virtual training you will provide to the PAs, 2) the access to your facility by public authorities, 3) the modalities of access (physical and/or remote) and temporal availability for this TNA pilot									
Section 1: Please, select your contribution to the preparatory webinar/ virtual training of public authorities (prior to their visit to your facility)									
PI name	Facility	Country	specific topic 1	specific topic 2	specific topic 3	specific topic 4	specific topic 5	specific topic 6	specific topic 7
			Overview of upcoming changes in the EC Directive	Purpose of additional pollutants with respect to health, ecosystems, climate etc.	Purpose of complementary AQ measurements by low-cost sensors	Issues of QA/QC of sensor measurements	...	...	...
Section 2: Please, select the topic(s) you wish your facility provides support to the visiting PAs and									
PI name	Facility	Country	specific topic 1	specific topic 2	specific topic 3	specific topic 4	specific topic 5	specific topic 6	specific topic 7
			Guidance on sampling point representativeness	Design of monitoring network	Guidance on monitoring and reference methods for BC, NH ₃ , UFP (PN)	Guidance on the application of low-cost sensors	Support the deployment of sensor networks	Training on QA/QC protocols	...
Section 3: Please, select the modality of access offered by your facility. Then, indicate the timeframe your facility is available for this pilot:									
PI name	Facility	Country	physical access	remote access (e.g. through a portable web-camera)	start date of pilot	end date of pilot			

Figure 10: The questions posed to the facility providers interested in a TNA pilot for public authorities, in the form of a google doc survey.

5. Outcomes

This section incorporates the outcomes of all modes of interaction and engagement events with participants from all the networks that liaised with Task 6.4, integrated and grouped by user needs, facility provisions and lessons learnt.

5.1 User needs

As already mentioned, ATMO-ACCESS reached several stakeholders from the public authorities (Table 3), not only to raise awareness about a potential TNA to the Research Infrastructures (RIs), but also to co-design the relevant pilot access TNA activity, mainly through the identification of needs expressed by the potential users and representatives from the public authorities.

User needs can be summarized as follows:

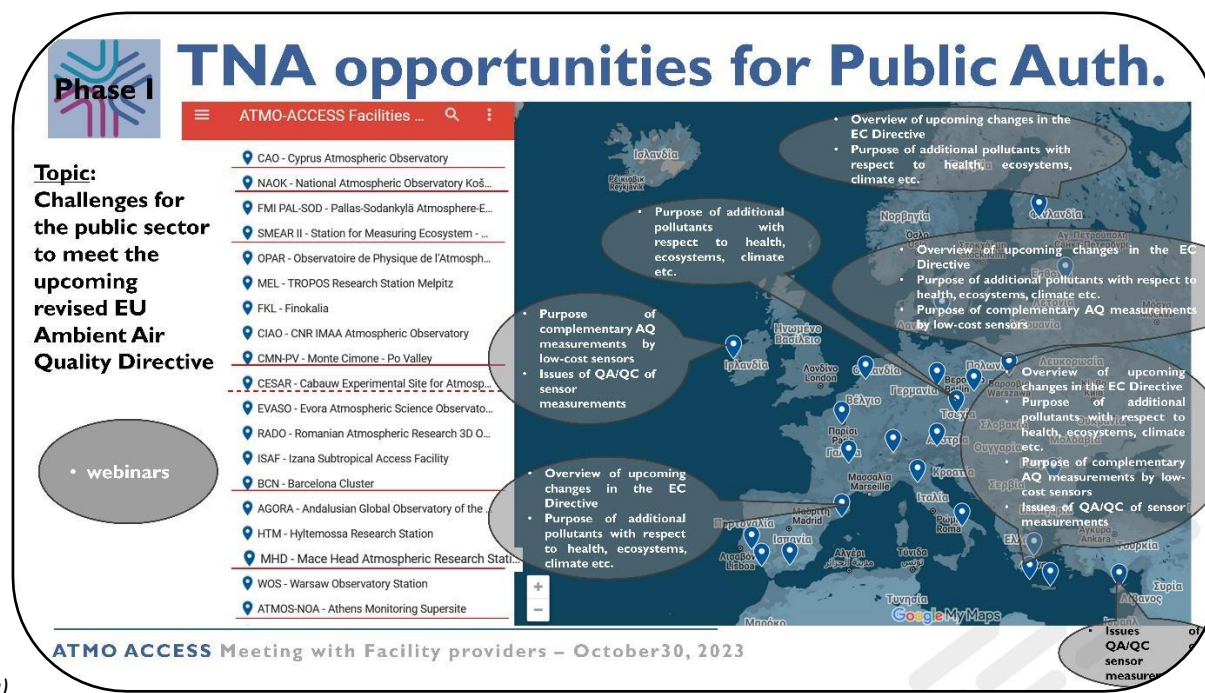
Air pollutants have been the main atmospheric parameters of interest for the public sector dealing with the atmosphere. Specific needs are technical expertise related to instrumentation and measurement techniques for new/non-regulated pollutants such as ultrafine particles, particle number, black carbon, ammonia.

A specialized training and scientific delivery offered by the RI(s) were stated as the favourite modes of interaction between the public sector and the facilities. Access to multiple facilities, recurrently and remotely (or in combination with a physical visit), were stated as the desired modalities of access.

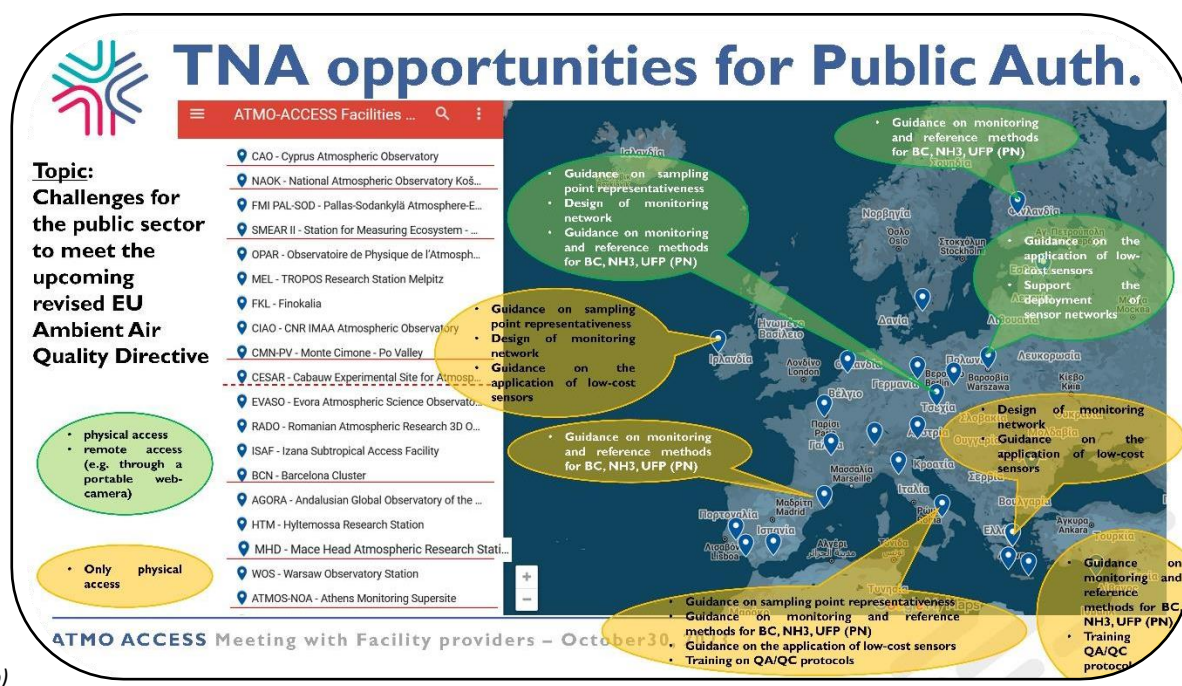
Although innovation was not a component in the primary needs expressed by the public authorities, some of the potential services offered by the ATMO-ACCESS network, such as online real-time data delivery, portable instrumentation, smart/ low-cost sensors) were perceived with enthusiasm.

5.2 Facility providers

An overall outcome from the facility providers of ATMO-ACCESS is that all needs expressed by the potential users can be provided. Focusing on the needs expressed in Sect. 5.1, there is an extended network of facilities all over Europe, which can support the public sector to deal with the above needs, which are already included in the revised EU Ambient Air Quality Directive. *Figure 11* maps the opportunities offered and is structured in 2 phases: informative webinars and (remote and/or physical) access to one or more facilities.



(a)



(b)

Figure 11: the mapping of TNA opportunities for the public sector in the frame of ATMO-ACCESS: (a) Potential webinars (Phase I) and (b) Access opportunities (remotely and/or physically, Phase II)

5.3 Lessons learnt

During the course of task 6.4, several difficulties were encountered in the efforts to gradually build a plan for a successful trans-national interaction between ATMO ACCESS facilities and the public authorities, and experience has been gained. Key findings are summarised below:

The potential for trans-national (rather than national) access to research facilities by the public sector could be characterised as crucial, as one of the first findings from the interactive process has been that national infrastructure doesn't always cover the needs for atmospheric monitoring, data, tools, solutions etc.

Still, a low participation of representatives from the public sector was registered in most of the organized events to support the formation of such a TNA call.

An explanation could be the language barrier. The high participation of public authorities in the dedicated, native-speaking event for Poland supports this hypothesis. Therefore, native-speaking, co-designed events may be a good vehicle for raising awareness when the target group comes from the public sector. The national research community can support this practice, given they are financially supported to act as a link between their county public sector and the abroad facilities.

The reluctance of PA staff to travel abroad, especially when financial support is not provided, has been stated as an additional barrier for the high interest of public authorities in TNA. A combination of (partial) funding with the opportunity for remote access to infrastructure abroad, are identified as incentives for the public sector to seek trans-national support, from European (or global) atmospheric monitoring networks.

The co-design of this and similar actions, which engage the European research community with National and local authorities has been accepted with enthusiasm by both sides. Co-design should remain an important component in similar initiatives.

The alliance with similar activities in the frame of other Europe-wide initiatives or projects (e.g. RI-URBANS) has been expressed as a need, especially by facility providers, to maximize co-benefits to all stakeholders.

6. Proposed TNA pilot for public authorities

6.1 Preparation

The EU Ambient Air Quality Directive revision process - driven by the [RI-URBANS project](#) - was seen as a promising opportunity to reach out public authorities. The relevant ongoing discussions involve particle numbers, BC, NH₃, PNSD, UFP, VOCs, oxidative potential and CH₄. The ACTRIS (and ICOS, IAGOS) community is put centrally to this discussion, as their members are competent to perform these measurements, thus provide a useful and attractive support for public authorities.

A supportive strategy by Task 6.4 for the ongoing efforts in RI-URBANS to streamline messages to potential users (the AQMS and the AQUILA community) was therefore decided, namely the plan and implementation of a series of remote access opportunities, focusing on specific topics, already identified in the frame of RI-URBANS and discussed in the previous paragraph.

The following plan was suggested to support the interaction among the public sector and ATMO- ACCESS:

1. Address to the below facilities (and experts) the request to give short webinars on the relevant [ACTRIS/RI-URBANS recommendation](#)/ end of February 2024 (those who accepted the invitation are in **bold**)
 - WCCAP, *Alfred Wiedensohler*
 - **PACC-ICPF, Ondracek Jakub**
 - **SMEAR II, Tuukka Petäjä**
 - **CSIC, Marco Pandolfi, Andres Alastuey, Xavier Querol**
 - CNR, *Lucia Mona*
 - **Clgas IMT, Therese SALAMEH, Stéphane SAUVAGE**
 - SIRTAC-ACMCC, *Olivier FAVEZ*
 - **SIRTAC-LSCE, Jean-Eudes Petit, Martial Haeffelin**
 - IAGOS, *Hannah Clark*
 - **IGE/IRD, Gaelle Uzu**

2. Open expression of interest to the ATMO-ACCESS and [AQUILA community](#)/ end of June 2024
3. Announce the dates for webinars and open registration/ end of June 2024
4. Perform the webinars/ October 2024
5. Collect feedback and evaluate the activity/ end of January 2025

6.2 Remote training webinars

The TNA activity of ATMO-ACCESS targeting the public sector was two training webinars under the title [“How to implement the revised EU ambient air quality Directive?”](#). Through the co-design with experts from the RI-URBANS and ATMO-ACCESS research communities, the content of the webinars was around guidance and monitoring for the ‘new’ pollutants of the current (voted on Oct. ’24) EC AQ Directive: Ultra-fine Particles (UFP), Particle Number Size Distribution (PNSD), Volatile Organic Compounds (VOCs), speciation of Particulate Matter (PM), black carbon (BC) and Oxidative Potential (OP) of atmospheric particles.

The training was split in two parts, the dates of the events were the 4th and the 22nd of October 2024, and the agenda of each of the webinars can be found in Fig. 12. The dissemination of the events was intensive, not only through the ATMO-ACCESS list (Annex I, Table 3, RI-Urbans contacts included), but also through the WHO Breathlife2030 newsletter. The impact of this dissemination activity was high with more than 200 registered people for both webinars and 100 and 125 actual participants in the first and second webinar, respectively, from multiple countries around the world. The expression of interest was open to all users with a specific target on public authorities representative. It’s worth noting that 68 public authorities attended the first webinar and 72 the second one. During the webinars, an interactive procedure was implemented (slido polls) in order to get stakeholders’ feedback on this, as well as future TNA activities involving the public sector. The answers of this poll are under process and analysis and their assessment will be incorporated in D6.5.

Certificate of attendance were sent out to the participants after the completion of the two webinars as well as a post training survey. The recordings of the webinars have also been made available via ATMO-ACCESS Youtube channel (<https://www.youtube.com/@ATMOACCESS/playlists>) and Zenodo community ([ATMO-ACCESS - Solutions for Sustainable Access to Atmospheric Research Facilities](#)).




How to implement the revised EU ambient air quality directive?

The added value of measuring "new" pollutants -
Guidance on monitoring and reference methods for:
Ultra-fine Particles and Particle Number Size Distribution (UFP and PNSD),
Volatile Organic Compounds (VOCs),
speciation of Particulate Matter (PM) and Black Carbon (BC).

Connection links communicated by email.

Part A | Oct. 4, 2024, 10:00-13:00 EEST (or 09:00 - 12:00 CEST):
Webinar on UFP and PNSD

10:00 - 10:10	Context of the webinar & introduction of speakers (Eleni Athanastopoulou / John Wenger)
10:10 - 10:20	Introduction from ATMO-ACCESS (Sabine Philippin/Paolo Laj Project coordination)
10:20 - 10:30	Introduction to the RI-URBANS/ACTRIS service tools (Xavier Querol, IDAEA-CSIC / Tuukka Petaja, UHEL)
10:30 - 11:15	UFP guidance and monitoring (Andres Alastuey, Research Professor, IDAEA-CSIC)
11:15 - 12:00	PNSD guidance and monitoring (Ondracek Jakub, Senior Scientist, ICFP)
12:00 - 12:30	Added value of measuring UFP and PNSD (Xavier Querol, Research Professor, IDAEA-CSIC)
12:30 - 13:00	Final questions and Closing remarks




How to implement the revised EU ambient air quality directive?

The added value of measuring "new" pollutants -
Guidance on monitoring and reference methods for:
Ultra-fine Particles and Particle Number Size Distribution (UFP and PNSD),
Volatile Organic Compounds (VOCs),
speciation of Particulate Matter (PM) and Black Carbon (BC).

Part B | Oct. 22, 2024, 13:00 - 16:00 CEST /14:00-17:00 EEST
Webinar on VOCs, PM speciation and BC

CEST 13:00 - 13:15/EEST 14:00 - 14:15	Introduction (Eleni Athanastopoulou, ATMO-ACCESS)
CEST 13:15 - 13:50/EEST 14:15 - 14:50	VOCs guidance, monitoring, added value (Therese Salameh, Senior researcher, IMT)
CEST 13:50 - 14:25/EEST 14:50 - 15:25	Guidance and monitoring for Online/ Offline PM Speciation - added value (Jean-Eudes Petit, Researcher at LSCE)
CEST 14:25 - 15:10/EEST 15:25 - 16:10	BC guidance, monitoring, added value (Marco Pandolfi, Researcher, IDAEA-CSIC)
CEST 15:10 - 15:30/EEST 16:10 - 16:30	Oxidative potential of atmospheric particles (Gaelle Uzu, Senior researcher, IGE/IRD)
CEST 15:30 - 16:00/EEST 16:30 - 17:00	Feedback from the audience (slido) and Conclusions

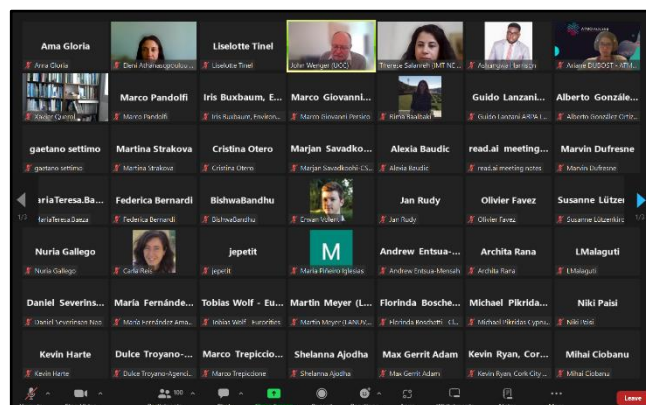
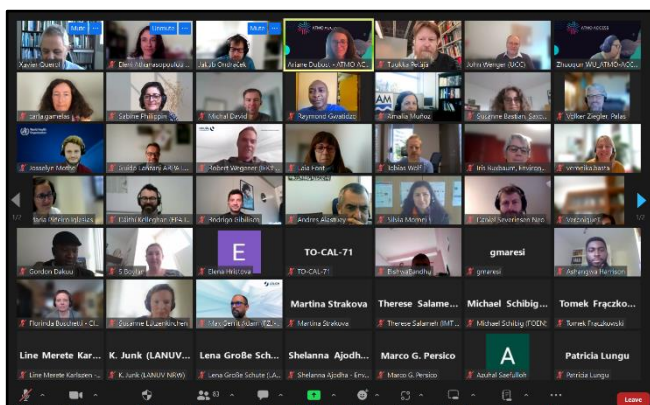


Figure 12: The [agendas](#) and snapshots of the 2 ATMO-ACCESS webinars (in collaboration with [RI-URBANS](#)) for public authorities: 04/22/2024 (left) and 22/10/2024 (right).

Annex I: Stakeholders lists

Table 3: Representatives from public authorities (PA) who declared their interest and/or were suggested to participate in the co-design of (and then apply in) the TNA pilot for public authorities (Task 6.4).

No.	Public Authority	City / Region	Country / Region	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Network	Event(s)/ mode(s) of interaction with Task 6.4
1	EEA	-	Europe	Alberto Gonzalez		RI-URBANS stakeholders	e-mails
2	EC-Joint Research Centre	-	Europe	JP Putaud		ACTRIS stakeholders	ACTRIS workshop/ virtual
3	Helsinki Region Environmental Services HSY	Helsinki	Finland	Hanna Manninen		RI-URBANS stakeholders	e-mails
4	National Institute for Industrial Environment and Risks	-	France	Laurence Rouil		RI-URBANS stakeholders	e-mails
5	Environmental protection organization	Montrouge	France	Nadine Dueso		RI-URBANS stakeholders	e-mails
6	AIRPARIF air quality monitoring organization	Paris	France	Veronique Gherzi		RI-URBANS stakeholders	e-mails
7	WHO	-	Global			RI-URBANS stakeholders	e-mails
8	WHO	-	Global			RI-URBANS stakeholders	e-mails
9	WHO	-	Global	O. Tarasova		RI-URBANS stakeholders	e-mails

No.	Public Authority	City / Region	Country / Region	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Network	Event(s)/ mode(s) of interaction with Task 6.4
10	City of Athens	Athens	Greece	Eleftheria Alexandri		ICLEI-EU network	e-mails / phone calls exchange
11	City of Athens	Athens	Greece	Ntina Marougka		ICLEI-EU network	e-mails / phone calls exchange
12	Ministry of Environment and Energy	-	Greece	A. Adamopoulos		RI-URBANS stakeholders	e-mails
13	Hellenic National Public Health Organisation	-	Greece	Anastasia Koutsolioutsou		ACTRIS stakeholders	ACTRIS workshop/ virtual
14	PATT (Regional Authorities)	Attica (Athens)	Greece	Antigoni Gkoufa		ACTRIS stakeholders	ACTRIS workshop/ virtual
15	City of Athens	Athens	Greece	Ioannis Binietoglou		ACTRIS stakeholders	ACTRIS workshop/ virtual
16	City of Athens	Athens	Greece	Dimitrios Kosmidis		ACTRIS stakeholders	ACTRIS workshop/ virtual
17	Regional Development Fund of Crete	Heraklion / Crete	Greece	Georgia Piligotsi		ICLEI-EU network	e-mails / phone calls exchange
18	Municipality of Athens	Athens	Greece	Georgios Stefanis		Facility providers	WG meeting 1/ virtual
19	PATT (Regional Authorities)	Attica (Athens)	Greece	Ioanna Chalari		Facility providers	WG meeting 1/ virtual

No.	Public Authority	City / Region	Country / Region	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Network	Event(s)/ mode(s) of interaction with Task 6.4
20	Region of W. Greece	Western Greece	Greece	S. Vlachos		ACTRIS stakeholders	ACTRIS workshop/ virtual
21	ARPA	Lombardia	Italy	G. Lanzani		RI-URBANS stakeholders	e-mails
22	Gemeente Utrecht	Utrecht	Netherlands	Marcel		ICLEI-EU network	ICLEI webinar
23	DCMR Environmental Protection Agency	-	Netherlands	Emre Ozdemir		RI-URBANS stakeholders	e-mails
24	DCMR Environmental Protection Agency	-	Netherlands	S. Vandenshout		RI-URBANS stakeholders	e-mails
25	Główny Inspektorat Ochrony Środowiska, Krajowe Laboratorium Referencyjne do spraw jakości powietrza		Poland	Andrzej Pindel		RI-URBANS stakeholders	RI-URBANS webinar
26	Instytut Ochrony Środowiska - PIB, Stacja Kompleksowego Monitoringu Środowiska "Puszcza Borecka"		Poland	dr inż. Anna Degórska		RI-URBANS stakeholders	RI-URBANS webinar
27	Instytut Rozwoju Terytorialnego		Poland	Anna Pastucha		RI-URBANS stakeholders	RI-URBANS webinar
28	Główny Inspektorat Ochrony Środowiska, Departament		Poland	dr inż. Barbara Toczko		RI-URBANS stakeholders	RI-URBANS webinar

No.	Public Authority	City / Region	Country / Region	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Network	Event(s)/ mode(s) of interaction with Task 6.4
	Monitoringu Środowiska						
29	Urząd Miasta Lublin, Wydział Strategii i Przedsiębiorczości		Poland	dr Dorota Wolińska		RI-URBANS stakeholders	RI-URBANS webinar
30	Główny Inspektorat Ochrony Środowiska, Departament Monitoringu Środowiska		Poland	mgr Ewelina Brakoniecka		RI-URBANS stakeholders	RI-URBANS webinar
31	Biuro Strategii i Analiz, Urząd Miasta st. Warszawy	Warsaw	Poland	mgr Ewa Denisiuk		RI-URBANS stakeholders	RI-URBANS webinar
32	Sejmik Śląski, Urząd Marszałkowski Województwa Śląskiego		Poland	dr hab. Iwona Jelonek, prof. UŚ		RI-URBANS stakeholders	RI-URBANS webinar
33	Biuro Ochrony Powietrza i Polityki Klimatycznej (PK), Urząd M. St. Warszawy	Warsaw	Poland	mgr Justyna Niewiarowicz		RI-URBANS stakeholders	RI-URBANS webinar
34	Instytut Ochrony Środowiska - PIB, Stacja Kompleksowego Monitoringu Środowiska "Puszcza Borecka"		Poland	dr Krzysztof Skotak		RI-URBANS stakeholders	RI-URBANS webinar

No.	Public Authority	City / Region	Country / Region	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Network	Event(s)/ mode(s) of interaction with Task 6.4
35	Urząd Miasta Bydgoszczy, Referent Ochrony Powietrza		Poland	Łukasz Karpiński		RI-URBANS stakeholders	RI-URBANS webinar
36	Biuro Ochrony Powietrza i Polityki Klimatycznej (PK), Urząd M. St. Warszawy	Warsaw	Poland	mgr Maria Zalewska		RI-URBANS stakeholders	RI-URBANS webinar
37	Ministerstwo Edukacji i Nauki, Departament Innowacji i Rozwoju		Poland	mgr Michał Rybiński		RI-URBANS stakeholders	RI-URBANS webinar
38	Europejskie Centrum Czystego Powietrza	-	Poland	mgr Łukasz Adamkiewicz		RI-URBANS stakeholders	RI-URBANS webinar
39	Ministry of Environment	-	Romania	Dorina Mocanu		RI-URBANS stakeholders	e-mails
40	City Council	Barcelona	Spain			RI-URBANS stakeholders	e-mails
41	Catalan AQM	Barcelona	Spain	Eva Pérez Gabucio		Facility providers	e-mails
42	City Council	Barcelona	Spain	J. Ramirez		RI-URBANS stakeholders	e-mails
43	UGZ	Zurich	Switzerland	Mensah Amewu Antoinette		RI-URBANS stakeholders	e-mails
44	Federal Office for the Environment		Switzerland	Hugo Amacker		RI-URBANS stakeholders	e-mails
45	Federal Office for the Environment		Switzerland	Reto Meier		RI-URBANS stakeholders	e-mails
46	Izmir Metropolitan Municipality	Izmir	Turkey	Çağlar		ICLEI-EU network	ICLEI webinar

No.	Public Authority	City / Region	Country / Region	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Network	Event(s)/ mode(s) of interaction with Task 6.4
47	City of Birmingham	Birmingham	UK	Paul Burns		RI-URBANS stakeholders	e-mails
48	Municipality of Minoa Pediadas	Crete	Greece			Facility providers	e-mails
49	National Meteorological Service	-	Argentina	G. Marincovich		Facility providers	e-mails
50	National Hydrometeorological Institute	-	Slovakia	Peter Hrabcak		Facility providers	e-mails

Table 4: Facility providers who declared their interest to participate in the TNA pilot for public authorities (Task 6.4).

No	Facility	Country	Representative	Contact details <i>(this is the public version of the document, so e-mails addresses have been removed)</i>	Institution	Network(s)	Event(s)/ mode(s) of interaction with Task 6.4
1	Sonnblick Observatory	Austria	Christian Maier		Sonnblick Observatory	ACTRIS stakeholders	ACTRIS workshop/ virtual
2	CAO	Cyprus	Michael Pikridas		Cyprus Institute	Facility Providers	WG meeting 2/ virtual
3	ICPF CAS	Czech republic	Jakub Ondracek			Facility Providers	WG meeting 1/ virtual
4	National Atmospheric Observatory Košetice (NAOK)	Czech republic	Jan Pacner		Czech Hydrometeorological Institute	Facility Providers	WG meeting 2/ virtual

No	Facility	Country	Representative	Contact details (<i>this is the public version of the document, so e-mails addresses have been removed</i>)	Institution	Network(s)	Event(s)/ mode(s) of interaction with Task 6.4
5	National Atmospheric Observatory Košetice (NAOK)	Czech Republic	Petra Ruzickova		Masaryk University	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
6	SMEAR II	Finland	Tuukka Petäjä		University of Helsinki	Facility Providers	WG meeting 2/ virtual
8	CESAM	France	Cazaunau		LISA CNRS	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
9	HELIOS Chamber Orléans	France	Wahid Mellouki		CNRS	ACTRIS stakeholders	ACTRIS workshop/ virtual
10	Site Instrumental de Recherche par Télédétection Atmosphérique	France	Martial Haefelin		IPSL / CNRS	ACTRIS stakeholders	ACTRIS workshop/ virtual
11	ACD-C-LACIS-T	Germany	Falk Mothes		TROPOS	ACTRIS stakeholders	ACTRIS workshop/ virtual
12	ECAC	Germany	S. Schüttauf		TROPOS	ACTRIS stakeholders	ACTRIS workshop/ virtual
13	Leibniz Institute for Tropospheric	Germany	Patric Seifert		TROPOS	Facility Providers	WG meeting 1/ virtual

No	Facility	Country	Representative	Contact details (<i>this is the public version of the document, so e-mails addresses have been removed</i>)	Institution	Network(s)	Event(s)/ mode(s) of interaction with Task 6.4
	Research (TROPOS)						
14	QUArTz Reaction Chamber	Germany	Peter Wiesen		University of Wuppertal	ACTRIS stakeholders	ACTRIS workshop/ virtual
15	AThens MONitoring Supersite	Greece	Konstantinos Eleftheriadis		NCSR Demokritos	ACTRIS stakeholders	ACTRIS workshop/ virtual
16	ATMOS/NOA	Greece	Nikos Mihalopoulos		National Observatory of Athens	Facility Providers	WG meeting 2/ virtual
17	Finokalia-Monitoring Station	Greece	Nikolaos Mihalopoulos		National Observatory of Athens	ACTRIS stakeholders	ACTRIS workshop/ virtual
18	FORTH Mobile Atmospheric Simulation Chamber	Greece	Spyros Pandis		FORTH	ACTRIS stakeholders	ACTRIS workshop/ virtual
19	Irish Atmospheric Simulation Chamber	Ireland	John Wenger		University College Cork	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
20	MHD	Ireland	Darius Ceburnis		University of Galway	Facility Providers	WG meeting 2/ virtual
21	ACTRIS SAMU	Italy	Carmela Cornacchia		CNR	ACTRIS stakeholders	ACTRIS workshop/ virtual
22	Chamber for Atmospheric Modelling and	Italy	Paolo Prati		INFN	ACTRIS stakeholders	ACTRIS workshop, WG

No	Facility	Country	Representative	Contact details (<i>this is the public version of the document, so e-mails addresses have been removed</i>)	Institution	Network(s)	Event(s)/ mode(s) of interaction with Task 6.4
	Bio-Aerosol Research						meeting 1/ virtual
23	CMN-PV	Italy	Angela Marinoni		CNR	Facility Providers	WG meeting 2/ virtual
24	Monte Cimone – Po Valley	Italy	Paolo Cristofanelli		CNR - ISAC	ACTRIS stakeholders	ACTRIS workshop/ virtual
25	Cabauw Experimental Site for Atmospheric Research	Netherlands	Arnoud Apituley		KNMI	ACTRIS stakeholders, Facility Providers	ACTRIS workshop, WG meeting 2/ virtual
26	Warsaw Observatory Station	Poland	Iwona Stachlewska		University of Warsaw	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
27	WOPAS	Poland	Anetta Drzeniecka		University Wrocławski	Facility Providers	WG meeting 2/ virtual
28	Evora Atmospheric Science Observatory	Portugal	Daniele Bortoli		Evora University	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
30	Romanian Atmospheric 3D research Observatory	Romania	Doina Nicolae		National Institute of R&D for Optoelectronics	ACTRIS stakeholders	ACTRIS workshop/ virtual
31	Andalusian Global ObseRvatory of	Spain	Lucas Alados Arboledas		University of Granada	ACTRIS stakeholders	ACTRIS workshop/ virtual

No	Facility	Country	Representative	Contact details (<i>this is the public version of the document, so e-mails addresses have been removed</i>)	Institution	Network(s)	Event(s)/ mode(s) of interaction with Task 6.4
	the Atmosphere						
32	BCN_AIS	Spain	Andres Alastuey		CSIC	ACTRIS stakeholders, Facility Providers	ACTRIS workshop, WG meetings 1 & 2/ virtual
33	Izana Subtropical Access Facility	Spain	Natalia Prats		AEMET-Izaña Observatory	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
34	Hyltemossa Research Station	Sweden	Erik Swietlicki		Lund University, Sweden	ACTRIS stakeholders	ACTRIS workshop, WG meeting 1/ virtual
35	High Altitude Research Station Jungfraujoch	Switzerland	David Bell		PSI	ACTRIS stakeholders	ACTRIS workshop/ virtual

Annex II: Minutes/ Reports of events/ interaction with stakeholders

II a. Survey No 1

The input gathered by the access providers interested in Task 6.4 is grouped in terms of facilities and topics. In particular, the registered RI facilities and EO data that could be provided to the public authorities are: in- situ instrumentation, vertical profiles of atmospheric information, atmospheric simulation chamber experiments and ground-based remote sensing measurements/data.

With respect to the atmospheric parameters and/or studies and/or services that could be found useful by the interested parties and are available from the RIs could be: information on atmospheric processes that impact air quality, long-range transport of particles, atmospheric measurements for routine verification of forecast atmospheric composition model, provision of information of extreme episodes of air quality and the use of chambers as test bed for various low-cost methods that could be part of a monitoring network in developing countries (especially areas with high pollution and frequent natural disaster phenomena).

The responders of the questionnaire were asked to propose potentially interested stakeholders to participate in each of the pilot. In total, 16 public authorities (7 of the local sector, 2 regional and 8 National) were suggested to be contacted for Task 6.4, representing 9 countries: Cities of Hamburg, Athens, Goteborg, Brno, Koln, Cork, Thessaloniki, M. of Environ of Greece and Romania, M. of Health (Greece), Regional authorities of Athens and W. Greece, ARPAL from Italy, INSERM and INERIS from France, the EPA of Sweden and Romanian's National Agency for Environmental Protection. All Organizations were invited to join the [ATMO-ACCESS stakeholders' workshop](#), held online on 27 October 2021.

II b. Stakeholders' workshop

The points raised from the discussion during the workshop can be summarized as follows:

- Most international stakeholders want to co-design specific access with the providers.
- Industry users have concerns about managing IPR when accessing facilities outside of their own
- Need to provide good, clear information about the services offered by access providers
- Rolling TNA calls and targeted communication towards industry users
- Challenges - Limited budget of TNA, bureaucracy, shipping costs, ensuring that the timing of access matches the needs of the user.
- Mobile platforms to facilitate fast track access for AQ monitoring (public authorities)
- Permanently open calls may be better than one or two calls per year
- What about the possibility of long-term TNA?

Further points derived from answers to the survey (Slido Poll) questions were:

- Similar answers from users and providers
- Combination of physical and remote access is popular option
- Combination training and scientific delivery/innovation is also popular
- Co-design of pilots is favoured
- Make the application procedures as simple as possible -avoid bureaucracy whenever possible.
- Many specific comments on each of the 3 proposed pilots.

Through the feedback to the first part, general-WP6 slido questions set to the two main groups participating in the workshop (potential users and access providers), insightful and useful information was extracted with respect to the types of services, access, and facilities, as well as for the access modalities,

both expected and provided. An overall outcome could be that all needs expressed by the potential users - even those of less popularity- can be covered by the RIs participating in the ATMO-ACCESS project. Focusing on the needs and provision expressed by more than the 40% of slido participations, the following findings have been registered in each of the four inquiries: 1) the preferred types of services (both to get/by users and to give/by providers) are Facilities, Instruments, Testing, Data (incl. modelling), Training and Validation (instruments, processes). Support (for developing data products and applications) is also sought by 45% of the participating users, which can be supported by 25% of the providers. 2) Both groups' favorite types of access to the RIs is the Physical visit (by the user) at an infrastructure/facility and the remote (non-physical) access to resources and services. Virtual / free access to Users, provided through communication networks is also declared, but to a lesser extent (asked: 37%, can be provided: 44% of the answers). 3) The preferred type of facility to access is Observational platforms. The rest of the facilities offered by ATMO-ACCESS (mobile platforms, central laboratories and simulation chambers) are also asked by the users, but can be provided by a smaller number of the access providers (who have participated in the slido poll). 4) With respect to the modes of access, there was a consistency between the needs and capabilities, which underlined that a combination of remote and physical access is preferred, and/or a combination of training and scientific delivery is also favorable. Cross-disciplinary access (beyond atmospheric science) is also a desirable mode to give and get data/services/infra etc.

Table 5: Main outputs from the ACTRIS stakeholders' workshop (October 2021).

>40% responders	Users (interested in accessing)	Providers (provide)
Type of Services	65: Facilities, Instruments, Testing, Data (incl. modelling), Training, Validation (instruments, processes), 45 Support (for developing data products, applications)	55: Facilities, Instruments, Testing, Data (incl. modelling), Training, Validation (instruments, processes), 25 support
Type of Access	63: Physical remote	Physical remote virtual
Type of Facility	66: Observational, Mobile, Labs, 33Chamber	47: Observational, 21 rest
Mode of Access	61 Remote-Physical, Training-Sc. Delivery, Cross-disciplinary access (beyond atm. Science)	50: the same

During the dedicated session to Task 6.4, the gain in TNA by the public authorities of one country to the RIs of other countries (though public authorities are traditionally connected with and exploit their National RI) was discussed both as a challenge and as an opportunity to empower the atmospheric knowledge and services. Although National access cannot be reimbursed by Atmo-Access, it can be done and reported in its frame, thus may act complementary to the access of the public authorities in trans-national facilities.

A good practice for this task could come from the example of Tenerife and the recent volcanic eruption. In particular, a TNA provided to the public authorities of Tenerife could help to monitor the emissions from the volcano and their impact on e.g. the aviation of the country. The mobile platforms were indicated as a good tool for this aim. Given the accidental and urgent need when such cases arise, a partnership approach of research stations with monitoring agencies may be critical, so that an effective modality of access to the data and/or services is co-designed in advance.

Through the retrieval and process of the feedback to the dedicated-T6.4 part of the slido survey, a general outcome -that shows the high value of a pilot for TNA for public authorities- is that national infrastructure or network doesn't cover the needs in atmospheric monitoring for most of the responders' countries. The topics considered of highest relevance to such a pilot are transboundary air pollution, natural atmospheric episodes (pollen, dust), assessment of air pollution events, smoke plumes from (peri)-urban fires, toxic plumes from industrial accidents and greenhouse gases in urban areas. The emerging needs that were registered were mostly relevant to new pollutants or measurements, such as BC, PNC, semi-volatile compounds, PM toxicity,

pollen, NH₃ and pesticides, according to new directives and / or health guidelines. Other needs expressed, relevant either to instrumentation or technology or type of information provided (incl. services) are: mobile instruments, lidars, alarm systems, real-time information, tailored data products, source apportionment, certified calibration, support for guidelines/standardization, new/innovative data tools, new technologies, and in general more monitoring capabilities. Last, the good practices declared on access modalities to RIs have been the webinars, the physical visits to monitoring stations for measurements and the (virtual) access to tailored data products.

II c. Working Group Meeting 1

The Minutes of this meeting are provided below:

ATMO-ACCESS WG on pilot for public authorities

<http://apcg.meteo.noa.gr/index.php/news-events/180-the-first-working-group-meeting-of-atmo-access-task-6-4>

Thursday, 16th June 2022, 14:00 – 16:00 GMT+3:00

Follow-up Slido poll: <https://app.sli.do/event/nrrf8iP7G9cQf1N8jHQeaK/live/polls>

(open by June 27th, 2022)

Receivers of this file are highly encouraged to forward the above slido poll link to the public authorities they are in contact with.

Meeting minutes

Eleni Athanasopoulou presented the agenda of the meeting

Agenda

1. Introduction to ATMO-ACCESS and WP6 (John Wenger)
2. TNA Pilots for Public Authorities (Eleni Athanasopoulou)
3. Polls and Discussion

Then, John proposed a short introductory comment by all participants:

Participants

- . NOA: Eleni Athanasopoulou, Nikos Mihalopoulos, Vassilis Amiridis, Eleni Liakakou, Kyriakos Romios, Thanasis Koukoulis
- . NCSR DEMOKRITOS: Konstantinos Eleftheriadis
- . University of Evora: Daniele Bortoli
- . National Institute of R&D for Optoelectronics INOE: Doina Nicolae, and Jeni Vasilescu
- . IDAEA- CSIC: Andres Alastuey
- . Leibniz Institute for Tropospheric Research (TROPOS): Patric Seifert
- . Lund University, Sweden (ULUND): Erik Swietlicki
- . University College Cork: John Wenger
- . INFN – Genova: Paolo Prati
- . ICPF CAS: Jakub Ondracek
- . ACTRIS-CZ: Petra Ruzickova
- . Izaña Atmospheric Research Center: Natalia Prats

- . LISA-CNRS (France): Bénédicte Picquet-Varrault, Mathieu Cazaunau
- . University of Warsaw, Faculty of Physics: Iwona Stachlewska
- . Region of Attica (Greece): Ioanna Chalari (public authority 1)
- . Municipality of Athens (Greece): Georgios Stefanos (public authority 2)

23 Participants attended the 1st WG meeting, representing 16 Organizations. All but two members of the meeting represented the facilities to be accessed by public authorities (PA) in the frame of the upcoming and targeted TNA call. Only 2 people were stakeholders, representing local and regional Greek public authorities.

*** The invitation for this WP meeting was sent to people from facilities and public authorities, who volunteered in participating through survey and ACTRIS workshop. The project office also sent the invitation to the National contact points, and receivers were asked to forward it to any potentially interested party. ~40 invitees*

Agenda point 1: Introduction to ATMO-ACCESS and WP6 (John Wenger)

A short introduction to the ATMO-ACCESS project, namely its history and short description, and its main objectives that are relevant to the trans-national access (physical, remote, virtual and combinations) for users (here public authorities) to more than 50 facilities and services in atmospheric RIs in Europe. The exploration and testing of new modalities of access is a basic component of Task 6.4. A short reference was made to the (types of) facilities available for access, including the VA platforms. Then, the framework of WP6 (New Access Modalities) was discussed, with emphasis to Task 6.4 which aims at formulating the upcoming TNA call (proposed pilot and associated access modalities) for public authorities. To this aim, the role of the established working group is to discuss ways in which TNA to ATMO-ACCESS research facilities can address the needs of public authorities in relation to air quality monitoring, how the facilities may be accessed (new and innovative modes of access), and overall, to co-design new Transnational Access (TNA) activities targeted towards public authorities.

Agenda point 2: TNA Pilots for Public Authorities (Eleni Athanasopoulou)

The main objectives and plan of the works of T6.4 were explained, i.e. how this task was communicated to the interested parties (survey, ACTRIS stakeholder workshop), how the current working group was formed (voluntary interest by facility providers, public authorities, others), which are the steps to follow towards the TNA call (WG meetings to discuss for a potential, attractive, competitive call for public authorities, introducing new/innovative modes of access, synergy of facilities/instrumentation, smart-aspects). Here, an issue for discussion with the SSC is the timeframe between the issue of the TNA call until the beginning of the implementation of the pilot activity. This will approximately define the deadline for the final decisions of this WG (and meetings) on the TNA call.

The results from previous polls and discussions were presented as the basis for further interactions and insights on the critical issues of the co-design process (see point 3).

Agenda point 3: Poll and Discussions

To warm up discussions on TNA to facilities, the first question raised to participants was to refer to their experience and/or good practices (from the past) on access (incl. modalities) to research infrastructures (RIs). Apart from experience with provision of TNA physical access (incl. research measurements at monitoring stations abroad), training was a lot mentioned (e.g. hands-on training for new techniques, procedures, calibration, webinars from ICOS) and other mentions include experimental campaigns (incl. the

deployment of instrument from one platform in the field experiment of another country), transnational access (physical and remote) to simulation chamber, use of facility to add measurement equipment from abroad. With respect to modes of access, the flexibility and/or mixture of physical and remote provision of access was brought up more than once. Virtual access to data processing, quality control and tailored (simplified) data products from observational platforms were mentioned.

Focusing on the co-design of the forthcoming TNA call for public authorities, the discussions are here grouped in 5 points:

1. Low participation of public authorities in the WG meeting

The low participation of PA in this WG meeting was found problematic and raised two needs: 1) better communication and dissemination of similar events to the broader community of public authorities. To this end, contact with any European association of public authorities could help. 2) further and deeper communication and collaboration with the PAs to explain what RIs can offer and thoroughly understand the PAs' needs. The lack of motivation by the PA to participate to this WG and/or to trans-national access, may arise from the fact that the broad community of PA most probably disregards the large European facilities, their capabilities, and their openness to trans-national access by PA. Thus, the ATMO-ACCESS community should find ways to raise awareness for these opportunities to the public sector (see point 2).

A critical point for the above is that participants of this WG, and in general by all facilities, will reach out more to the national/local PA they are already connected with, and promote TNA. To this end, the appropriate contact persons from each facility as well as from each PA should be identified.

2. Emerging needs potentially addressed at/covered by RIs abroad – Pilot ideas

The highlighted needs* that could potentially formulate the TNA call were:

1. Source apportionment (65%)
2. Online, Real-time information, alarm systems (65%)
3. AQ information for the urban hotspots of air pollution (59%)
4. Fast track access to AQ monitoring (eg natural episodes, pollution events) (59%)

** Through the poll, which contained 9 prescribed answers, namely those already identified through the past ATMO-ACCESS workshop held during ACTRIS week.*

The two representatives from the Greek PA were explicitly asked to comment on their feedback, and they confirmed that their top priorities coincide completely with the above needs.

In addition to the above four needs, the

5. Testing and validating (calibrating*) smart/low-cost sensors

was also mentioned as a key issue and access to public authorities and also in relevance to RI-URBANS pilot campaigns (see point 3).

* After this meeting, the Catalan AQM came in contact with Eleni and John (through Andres Alastuey, IDAEA) to express their interest in the possibility of calibrating some of the instruments used for the measurement of non-regulated metrics (UPC/PNSD, BC).

Last, a lot of discussion was focused on portable instrumentation, which could be attractive, dealing with the lack of awareness and motivation by the public authorities, raised in point 1. An idea for a TNA pilot was:

6. A caravan with portable instrumentation to monitor atmospheric pollution

The concept could be that this caravan visits the applicant to demonstrate its capabilities and then, at the second phase, to conduct an experimental campaign at the hotspot of selection. This would probably require sequential access to the portable instrumentation (2 visits by the caravan, one for demonstration and one for campaign). The representative from the Region of Attica was fond of this idea.

The mobile instrumentation during campaigns was also mentioned in relevance to RI-URBANS activities (see point 3).

3. Alignment to RI-URBANS

The alignment to RI-URBANS pilot activities was mentioned by some of the participants, e.g. the connection of abroad facilities with the public authorities of Barcelona could happen during the pilot campaign of RI-URBANS, either for mobile instrumentation & campaign or for future calibration of their instrumentation. Indeed, in the frame of the pilots of this project, international campaigns will take place, thus the respective local PA could access the mobile instrumentation brought to their city, as well as its outputs. The currently open TNA call by ATMO-ACCESS is aligned to the objectives of the Green Deal, thus connections with RI-URBANS are welcome. RI-URBANS was also mentioned to demonstrate that interest from the side of the PAs exists, because they actually co-designed all pilots, so that their needs are addressed.

Nevertheless, the Transnational aspect was stated as a challenge that could prove problematic (see point 5).

4. New / Innovative modes of access

Live Slido poll: “remote and physical”, “recurrent”, “training for public authorities”, “remote and multiple facilities”, “mobile platforms”, “physical”.

There were several mentions of virtual access (to data*), which sounds an attractive option for public authorities (confirmed by the representative from the city of Athens), especially where real-time data products are concerned. An idea is that virtual access can be offered in this specific TNA call as a complementary mode of access.

*After this meeting, the Catalan AQM came in contact with Eleni and John (through Andres Alastuey, IDAEA) to express their interest in accessing data from other sites in Europe, to assess their own measurements of specific variables.

5. Challenges

One of the outcomes of the past ACTRIS workshop sets TNA as a big opportunity, as it indicated the poor coverage of PA needs by their national infrastructure. Nevertheless, in this WG meeting TNA was again mentioned as a ‘problem’ or a ‘barrier’. In simple words, it was stated as difficult to attract PA of one country to access the atmospheric facilities of another country, given the fact that most PAs already collaborate with the National RIs. Their (virtual) access to data products abroad could be an easy way out, especially where real-time data is concerned. Another mention in the same line was that collaboration with the National Infrastructure/RIs could bring up supporting instrumentation to the already local established

services, from abroad. Last, the idea of the caravan promoting capabilities (see point 1) is also a way to overcome this issue.

The testing and validating of smart/low-cost sensors were mentioned as a key issue and access to public authorities should be possible even if they come from the same country of the hosting facility. National access was further commented. In particular, it was argued that since all facilities of ATMO-ACCESS belong to big European networks, they can be regarded as international, thus access to them should not be confined but this rule. But since this is an EC rule, and EC expects recommendations after the realization of the pilots the following may stand as a possibility: a pilot may occur that although PA could access e.g. an ACTRIS infrastructure of their country, they will be directed to cover their need abroad. A cost evaluation could suggest the recommendation that when international networks are accessible by countries, the rule of transnationality can be less preferable, both due to practical and financial reasons.

Pending/Late reimbursement of costs for TNA through past experience was also mentioned.

Action items

1. Minutes, slides and open slido survey will be distributed by Eleni Athanasopoulou to the WG members and ATMO-ACCESS Coordination Office - 20 June 2022
2. Short presentation of the above with ATMO-ACCESS (other WPs) 22nd Jun. 2022. Discussion on the following issues:
 - Expansion of this WG towards including more public authorities (point 1). Possible ways of doing so are: 1) the contact of relevant trans-national associations, such as the Covenant of Mayors, Resilient Cities Network, European Committee of the Regions (CoR), ICLEI - Local Governments for Sustainability, 2) Facility providers communicate the TNA option with the PA already in collaboration. Feedback on the above would help the prioritization of communication actions.
 - Does the option of a TNA call for “A caravan with portable instrumentation to monitor atmospheric pollution” sound appealing and feasible (sequential access, see point 2) from the ATMO-ACCESS point of view?
 - Do you confirm the alignment with RI-URBANS as an option for T6.4 (point 3)? If yes, contact with the public authorities of the pilot city of this project would help towards promoting their TNA options, thus raising their awareness and interest to co-design and apply to the TNA call. Who are the appropriate points of contact?
 - (Based on point 4) Can virtual access be offered in this specific TNA call as a complementary mode of access?
 - Which is the timeframe between the issue of the TNA call until the beginning of the implementation of the pilot activity? This will approximately define the deadline for the final decisions of this WG (and meetings) on the TNA call
3. Broader communication of the opportunity in the frame Task 6.4 to the public authorities, based on decisions made in the frame of the above issue of discussion.
4. Broad announcement for a 2nd working group meeting
5. Definition of the first call (deadline set after feedback on the last point of action 2)
6. First call launch (deadline set after feedback on the last point of action 2)

II d. ICLEI-EU feedback

Below (Figure 12), the report from the input from participants during the respective meeting is given.

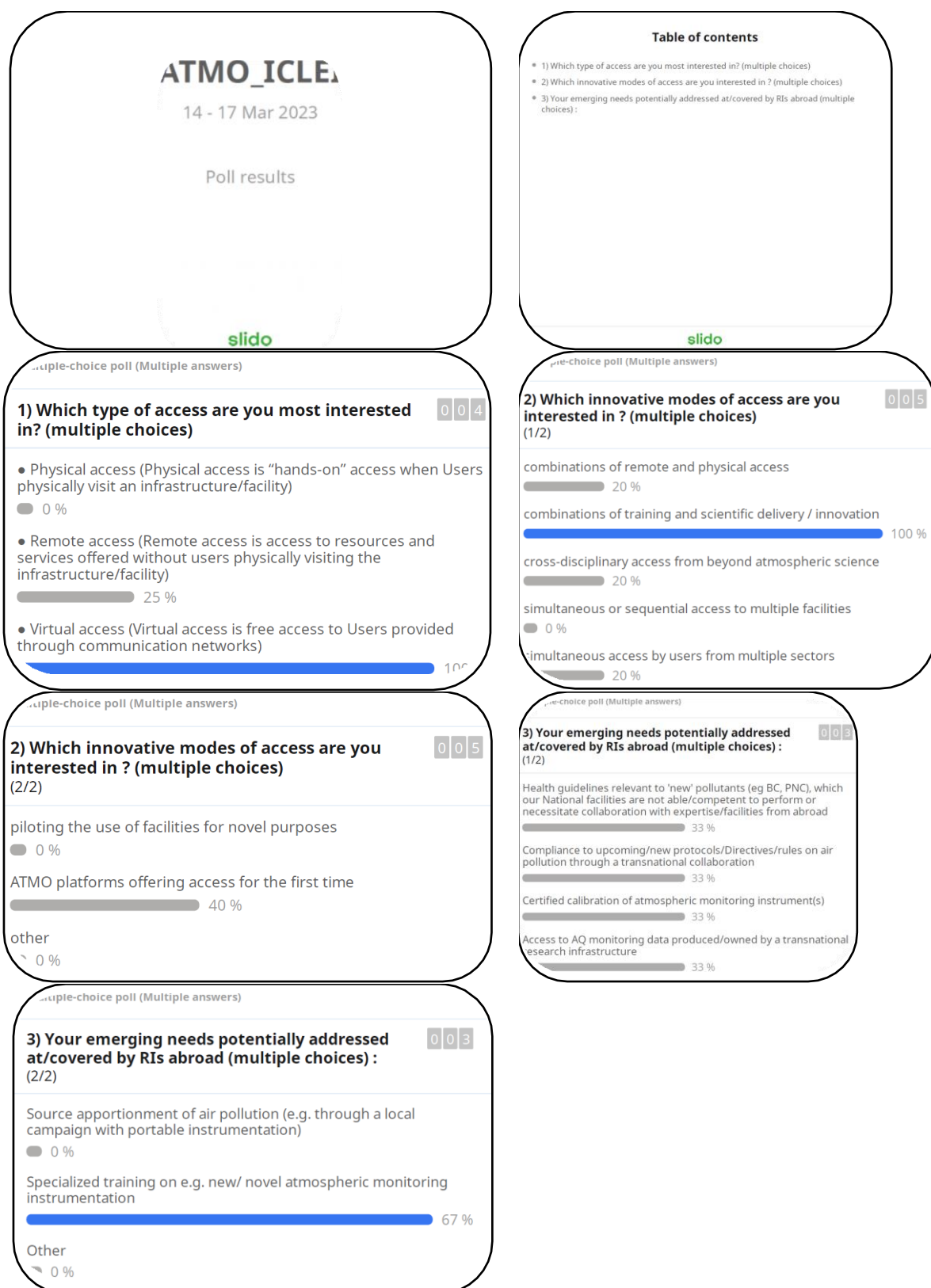


Figure 12: The report from the slido poll and feedback by all participants in the webinar and meeting with ICLEI-EU members (representatives from public authorities).

II e. Working Group Meeting 2

The minutes of this meeting are given below:

The participants of this virtual meeting (30 October 2023) represented the 7 ATMO-ACCESS facilities with interest in providing TNA to public authorities: CABAUV, SMEAR II, ATMOS/NOA, CMN-PV, NAOK, MHD and WOPAS (Figure 13).

The task leader shortly presented the prevailing user needs collected through all interactions with representatives from the public authorities, highlighting the needs for specialized training on new/novel atmospheric monitoring instrumentation and for support on the upcoming EC Directive.

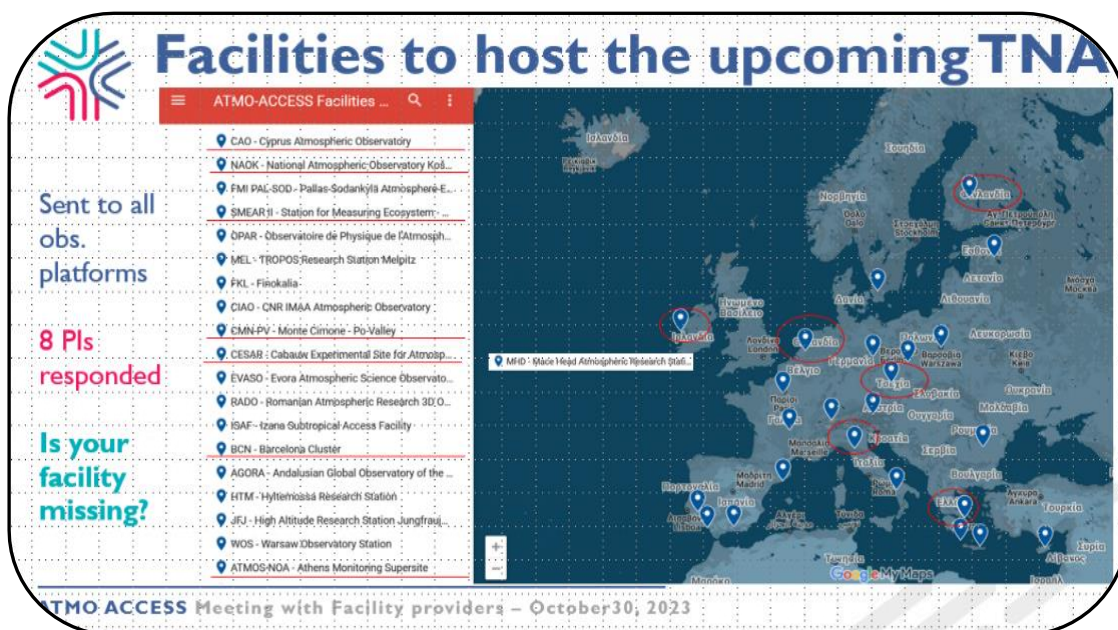


Figure 13: Map of the ATMO-ACCESS facilities interested to provide TNA to public authorities in the frame of Task 6.4.

Given this frame, a potential topic for this TNA was discussed, dealing with the challenges for the public sector to meet the upcoming revised EU Ambient Air Quality Directive. In specific, the idea of an informative webinar (or online meeting or workshop) for the PAs was discussed as the first phase of this activity, to inform about the (changes in the new) Directive. In sequence, a physical (or virtual) visit of the representatives of the public sector to supersites over Europe can enable the demonstration of the instrumentation and transfer the know-how to PAs (to be prepared/ compliant with the upcoming revised directive). All participants agreed with this general plan.

Then, the task leader showed a more detailed look in the documentation provided by the EC with respect to the new Directive, and in specific at multiple key issues related to the implementation of the provisions for air quality monitoring, which necessitate solutions². Upon these and the competences of the ATMO-ACCESS network, the following ideas for support in the frame of this TNA were discussed:

- Guidance on sampling point representativeness

² [Strengthening of air quality monitoring, modelling and plans under the Ambient Air Quality Directives](#), Beth Conlan, Hetty Menadue, Jo Green, Micaela Zabalo, Martina Alvarez (Ricardo) Leonor Tarrasón (NILU); Nuria Castell Balaguer (NILU); Stijn Janssen (VITO); Hans Bolscher, Pavla Cihlarova (Trinomics)] [April - 2022],

- Design of monitoring network
- Guidance on monitoring and reference methods for BC, NH₃, UFP (PN)
- Purpose of additional pollutants with respect to health, ecosystems, climate etc.
- Guidance on the application of low-cost sensors
- Support the deployment of sensor networks

Participants confirmed that all facilities have the expertise and capacity to support this pilot, offering (some of) the aforementioned provisions, in a flexible time frame within the frame of the project. A combination of modalities of access was discussed, namely the physical access combined with virtual access to the facilities holding a web-camera.

The concept of inclusion of all availabilities by the facility providers seemed to fit most for this activity, together with a non-competitive character for the call, unless demand cannot be met. Reimbursement for both providers and public authorities is a prerequisite for this activity. Transnationality was discussed as a hurdle for this opportunity and the possibility of an exception was brought in the discussion, in case of remote access to a set of facilities in different countries offering the same type of service. Finally, it was decided to issue a survey to identify the mapping of topics and modes of access, that ATMO-ACCESS can offer for the implementation of such a pilot.

II f. Survey No 2

Below, the input to the survey targeting the mapping of facility providers to public authorities is given in Figure 14. In particular, first the specific topics that each facility can cover through the preparatory (phase I) webinars are identified. Then, the actual training that each facility may provide (phase II), given its specific instrumentation and scientific expertise is given. Last, the potential modalities of access to each facility are shown, together with potential time restrictions.

The responders to this survey represent the 8 ATMO-ACCESS facilities with interest in providing TNA to public authorities: CAO (Cyprus), SMEAR II (Finland), BCN_AIS (Spain), ATMOS/NOA (Greece), CMN-PV (Italy), NAOK (Czech Republic), MHD (Ireland) and WOPAS (Poland).

This network of facilities can cover all topics proposed for (one or more) preparatory webinars/ virtual trainings of public authorities prior to their visit to the facility (Phase I of the potential TNA pilot):

- Overview of upcoming changes in the EC Directive
- Purpose of additional pollutants with respect to health, ecosystems, climate etc.
- Purpose of complementary AQ measurements by low-cost sensors
- Issues of QA/QC of sensor measurements

Likewise, each provider has selected one or more of the proposed topics to support the visiting PAs (Phase II of the potential TNA pilot), resulting again in a full coverage of the proposed list:

- Guidance on sampling point representativeness
- Design of monitoring network
- Guidance on monitoring and reference methods for BC, NH₃, UFP (PN)
- Guidance on the application of low-cost sensors
- Support the deployment of sensor networks
- Training on QA/QC protocols

Last, both suggested modalities of access -namely physical and remote (through a portable web-camera)- can be provided. In particular, all facilities provide physical access, while those located in Finland, Czech Republic and Poland hold the equipment to additionally provide remote access. No responder confined the PA access to a particular timeframe.

General Topic of the transnational access (TNA) to the facilities by public authorities (PAs): Challenges for the public sector to meet the upcoming revised EU Ambient Air Quality Directive										
Please, take 5-10 minutes to fill in the below survey, comprised of 3 parts regarding your preferences/availability for: 1) the webinar/ virtual training you will provide to the PAs, 2) the access to your facility by public authorities, 3) the modalities of access (physical and/or remote) and temporal availability for this TNA pilot										
Section 1: Please, select your contribution to the preparatory webinar										
PI name	Facility	Country	specific topic 1 Overview of upcoming changes in the EC Directive	specific topic 2 Purpose of additional pollutants with respect to health, ecosystems, climate etc.	specific topic 3 Purpose of complementary AQ measurements by low-cost sensors	specific topic 4 Issues of QA/QC of sensor measurements	specific topic 5 ...	specific topic 6 ...	specific topic 7 ...	specific topic 8 ...
Arnoud Apitoulley	CABAUW	Netherlands	☐	☐	☐	☐	☐	☐	☐	☐
Michael Pikridas	CAO	Cyprus	☐	☐	☐	☒	☐	☐	☐	☐
Tuukka Petäjä	SMEAR II	Finland	☒	☒	☐	☐	☐	☐	☐	☐
Andres Alastuey	BCN_AIS	Spain	☒	☒	☐	☐	☐	☐	☐	☐
Nikos Mihalopoulos	ATMOS/NOA	Greece	☒	☒	☒	☒	☐	☐	☐	☐
Angela Marinoni	CMN-PV	Italy	☐	☐	☐	☐	☐	☐	☐	☐
Jan Pacner	NAOK	Czech republic	☐	☒	☐	☐	☐	☐	☐	☐
Darius Ceburnis	MHD	Ireland	☐	☐	☒	☒	☐	☐	☐	☐
Anetta Drzeniecka	WOPAS	Poland	☒	☒	☒	☐	☐	☐	☐	☐

(a)

General Topic of the transnational access (TNA) to the facilities by public authorities (PAs): Challenges for the public sector to meet the upcoming revised EU Ambient Air Quality Directive										
Section 2: Please, select the topic(s) you wish your facility provides										
PI name	Facility	Country	specific topic 1 Guidance on sampling point representativeness	specific topic 2 Design of monitoring network	specific topic 3 Guidance on monitoring and reference methods for BC, NH3, UFP (PN)	specific topic 4 Guidance on the application of low-cost sensors	specific topic 5 Support the deployment of sensor networks	specific topic 6 Training on QA/QC protocols	specific topic 7 ...	specific topic 8 ...
Arnoud Apitoulley	CABAUW	Netherlands	☐	☐	☐	☐	☐	☐	☐	☐
Michael Pikridas	CAO	Cyprus	☐	☐	☐	☐	☐	☒	☐	☐
Tuukka Petäjä	SMEAR II	Finland	☐	☐	☒	☐	☐	☐	☐	☐
Andres Alastuey	BCN_AIS	Spain	☐	☐	☒	☐	☐	☐	☐	☐
Nikos Mihalopoulos	ATMOS/NOA	Greece	☐	☒	☐	☒	☐	☐	☐	☐
Angela Marinoni	CMN-PV	Italy	☒	☐	☒	☒	☐	☒	☐	☐
Jan Pacner	NAOK	Czech republic	☒	☒	☒	☐	☐	☐	☐	☐
Darius Ceburnis	MHD	Ireland	☒	☒	☐	☒	☐	☐	☐	☐
Anetta Drzeniecka	WOPAS	Poland	☐	☐	☐	☒	☒	☐	☐	☐

(b)

General Topic of the transnational access (TNA) to the facilities by public authorities (PAs): Challenges for the public sector to meet the upcoming revised EU Ambient Air Quality Directive										
Section 3: Please, select the modality of access offered by your facility. Then, indicate the timeframe your facility is available for this pilot:										
PI name	Facility	Country	physical access	remote access (e.g. through a portable web-camera)	start date of pilot	end date of pilot				
Arnoud Apitoulley	CABAUW	Netherlands	☐	☐	...	...				
Michael Pikridas	CAO	Cyprus	☒	☐						
Tuukka Petäjä	SMEAR II	Finland	☒	☒						
Andres Alastuey	BCN_AIS	Spain	☒	☐						
Nikos Mihalopoulos	ATMOS/NOA	Greece	☒	☐						
Angela Marinoni	CMN-PV	Italy	☒	☐	availability upon request					
Jan Pacner	NAOK	Czech republic	☒	☒	availability upon request					
Darius Ceburnis	MHD	Ireland	☒	☐						
Anetta Drzeniecka	WOPAS	Poland	☒	☒	availability upon request					

(c)

Figure 14: Survey issued in the frame of Task6.4, filled by ATMO-ACCESS facility providers, who wish to participate in the TNA pilot for public authorities. The survey shows the availability of each facility and potential topics for (a) webinars, (b) transnational access and (c) modalities of access.