Deliverable D1.5: *Minutes of Third Official EUROCHAMP-2020 Meeting*

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Tuesday, October 1st

Introduction - Jean-François Doussin

The meeting is introduced by a welcome speech by the Head of the Faculty of Applied Physics of the University of Eastern Finland (UEF), where the meeting is hosted.

The Coordinator opens the meeting by recalling the project's objectives, and its vision. Among various important achievements that will remain after the project's end, Jean-Francois Doussin emphasizes the provision of the simulation chambers' handbook and the establishment of a fully developed data centre (especially the Library of advance data products). The full achievement of these actions that will fund the legacy that the project will leave in the science community will require the efforts of the community during this last year of activities.

Agenda is presented.

WP2 Atmospheric Simulation Chamber characterization and interoperability – Amalia Muñoz

First, the tasks linked to characterization and interoperability are discussed. The main activities which took place are listed and presented, like the use of the two spectrometers, calibrated in Jülich and already used by several partners, or again the compilation of the measured wall loss rates in the EUROCHAMP simulation chambers.

The upcoming deliverables are discussed, as they imply the contribution of several partners:

- D2.6 Update of detailed chamber overview on the EUROCHAMP website. Gordon McFiggans suggests to add VOC wall loss as a new category on the website's description of all chambers.
- D2.7 Report on wall loss rates for a selection of VOCs and OVOCs for each chamber

Concerning the activities linked to multichamber experiments, the second pillar of the WP, firstly, it is reminded that the task of which UCAM was responsible until last year ("Multi-chamber studies assessing the production of SOA from VOC oxidation") is now under the lead of FORTH. The experiments carried out so far are presented: those related to propene photo-oxidation under the responsibility of University of York, are mostly mentioned and partners are requested to upload the details data for further analysis. The results related to a-pinene experments on the one hand and to toluene or TMB experiments are displayed and discussed.

After enquiring with John Wenger, it is agreed that it is possible that UCC may not be able to deliver the planned data due to unforeseen delay in the new chamber installation. Data from UCC hence do not participate anymore to multichamber experiments.

Hendrik Fuchs and Spyros Pandis will request from all partners who promised to perform some experiments to inform them about their status and/or provide the related data.

Gordon suggests to the WP leader to start considering which use to make and how to disseminate the results of the experiments. It is agreed that probably the best option is to write papers out of this work.
Spyros Pandis proposes a timeline to proceed during the next months: participating groups will perform the remaining experiments and send data to FORTH. Spyros will arrange meetings with each partner to clarify the details of each experiment performed, as well as a conference call with all partners involved to finalize the plan for synthesis of the data.

Amalia points out also that it is necessary to invert the milestone and the deliverable related to multichamber experiments: probably due to an error at the time of the proposal the two activities are inverted. Therefore, the milestone 2.6 ("Workshop for the interpretation of optimum experiments for model advancement") needs to take place before deliverable 2.8 ("Report on the main conclusions of the multi-chamber experiments").
During the next month, Amalia will set up the date and location of the related workshop, which will have to take place before April 2020.
The next steps can be summed up as follows:

- For all partners for which data from experiments are available, they will have to be sent to Amalia and Spyros as soon as possible during October;
- The remaining experiments will have to be performed by October 31st;
- All data will have to be submitted by November 30th, to allow a full revision by December 20th 2019.

WP3 Standard Protocols, Instrumentation, Quality Assurance and Data Provision – Astrid Kiendler-Scharr

Intercomparison campaign of instruments for measurements of small oxygenated organics

The first task which is presented is the intercomparison campaign of instruments for measurements of small oxygenated organics, which is explained by Mila Rodenas (CEAM). The intercomparison took place in CEAM (Valencia), from 17th May to 1st June 2018 All the performed experiments were listed, as well as the related results from photooxidation and from calibration experiments. The report of the data analysis will be realized by CEAM by the end of October 2019 (D3.7).

PTR-MS intercomparison campaign

Another major activity of the past year was the PTR-MS intercomparison campaign, organized by CNRS LISA and CNRS ICARE in Orléans, in May 2019. The objectives of the campaign were to:

- Assess the humidity impact on sensitivity
- Distinguishing different injected compounds of close mass
- VOCs oxidation under low and high NOx conditions
- Assessment of aerosol load impact

The activity grouped 14 research institutes from 8 countries, and the instruments from 2 companies were measured: Chromatotec and Ionicon Analytik.
This particular campaign is remarkably complementary to the one organized in the framework of ACTRIS-2 in Cabauw (Netherlands), as it builds on the remaining questions from the Cabauw campaign to push forward the characterizatio of PTRMS techniques and practices. For a stronger integration the coordination of the present campaign was placed under the ACTRS in-situ trace gases topical center responsibility.
The preliminary results for non-blind experiments revealed large discrepancies between instruments even for simple compounds. Further data analysis is needed from which better common practices will be derived. The deadline for final data submission set was on September 15th 2019.

Intercomparison of Ice Nucleation instruments

The third major activity organized in 2019 was the Intercomparison of Ice Nucleation instruments at the AIDA chamber, with the following objectives:

- Develop AIDA reference experiments for calibrating INP instruments
- Intercompare INP instruments and measurement methods: diffusion chambers and new expansion chambers with AIDA INP numbers.

The campaign was successful and the first preliminary results show a general good agreement for mixed mineral dust like ATD or Sahara desert dust, proving the good choice of test cases; they also prove a poor agreement with pure mineral aerosols like illite or feldspar (see also Hiranuma et al., ACP, 2015).

Aerosol analysis tool kit

The toolkit developed by University of Manchester has been available for more than a year now, and partners discuss, among those who had the opportunity to test it, the advantages and the difficulties they encountered. A test was performed at FORTH, and they could observe that the first complications rise is a different data format is used. The toolkit will be used by LISA, too, as they dispose now of an IGOR license.
It is suggested that Bénédicte Picquet-Varrault, responsible of the DC, and Gordon McFiggans work on a recommendation document on the use of the toolkit, to be available on the Data Centre.
The FTIR data analysis toolkit is also mentioned, to discuss feedback from partners who tested it: it is agreed that the tool is already very useful. The possibility to save the residual spectrum was requested as a further improvement which was described as a minor change and agreed by CEAM.

Protocols for Handbook of Atmospheric Simulation Chamber

A printed hard of the Handbook, in its present state of advancement, is circulated among the audience. It displays ca. 280 A4 pages. Overall, a general advancement of more than 50% is observed. All chapters of the handbook are reviewed and discussed. Some of them are almost complete, while others still lack the majority of the content.

- Chapter 1 (Peter Wiesen): it will include an historical perspective of simulation chamber works. It should be short, "anecdotal", reporting the major scientific breakthroughs in the past decades. It should not be more than seven pages.
- Chapter 2 (Birger Bohn): the chapter is completed. It will also include a section on various application of simulation chamber (JF Doussin/ John Wenger) and a section on the variability of chamber design criteria (Paul Seakins)
- Chapter 3: It is suggested to add an appendix document to this chapter, which would list the various type blank experiments (depending on chamber and application), rather than a whole chapter about blank experiments.
- Chapter 4: ongoing: CEAM' colleagues sent a contribution about ozone, which has to be integrated by still to be integrated by Bénédicte Picquet-Varrault, leader of the chapter.
- Chapter 5: all content is still missing.
- Chapter 6 and 7: it is discussed whether these chapter are necessary or not, and which content they should include. It is suggested to present the newest chambers around the world, dedicated to very specific issues.

Editorial options

The majority of the plenary agrees that it would be a valuable added value to be able to print a paper version of the handbook, in addition to a free, PDF version. Different options are possible: Forzungszentrum Jülich offers a printing service as well as the PDF free version, for a moderate price. Tim Wallington suggests to ask for a quotation to the publishing house for which he is an editorial reviewer: this option would allow to have the book advertised and sold online on different websites.

Anke Nölscher, professor at Bayreuth University, and recently become Associated Partner of the project, offers to be an external reviewer of the handbook.

Targeted audience

The plenary discusses then the target of the book. It is agreed that the main target groups are new master and PhD students who need training, as well as young groups of scientists wanting to build a chamber.

The actions to be taken on this task can be summed up as follows:

- The editorial group (John Wenger, Paul Seakins, Astrid Kiendler-Scharr and Jean-François Doussin) will explore different options for publishing the handbook and get the related quotations: publishing houses, online options, Jülich printing service, etc.

The editorial group has to evaluate (by the end of December 2019) the various options/quotations: publishing houses, online options, Jülich printing option, etc.

- Figures: each contributor is responsible to ask for authorization to the authors of the figures used in the handbook.

➔ John Wenger sends email to ask contributors to check their figures and ask copyright
➔ Matilde Oliveri will create a tracking excel where acceptances or not are noted.

- Each contributor is responsible to provide all references in ACP format and without online libraries, simply in plain format.

➔ John sends email to ask contributors to send their references in ACP format, in plain format

-

A timeline is established for the next six months:

- All chapters need to have some contributions by October 31st

➔ Astrid K. is in charge of informing and reminding the contributors

- Section leaders will review the contributions and iterate with contributors by November 30th.

➔ Astrid K. will be in charge of coordinating the review process

- A new draft will have to be ready by January 31st

➔ Astrid K. will be responsible of the respect of this deadline
➔ Matilde O. will be responsible of the general layout

- The final objective is to have a final version by March 31st 2020.

WP4 Innovation Platform – John Wenger

Database of industry users and overall collaboration with the private sector

The database, in the form of an excel file, was created at the beginning of the project and it is still available and regularly updated by the Project Office on the website. Partners who have regular or occasional collaborations with the private sector are invited to suggest the possibility of becoming Associated Partners, and are encouraged to share their collaboration through the form of success stories. Considering the latest collaborations, Rami Alfarra, Bénédicte Picquet-Varrault

(car manufacturers), Spyros Pandis (Fasmatech) and Wahid Mellouki (Chromatotec) are encouraged to report their projects through short texts which will be uploaded on the website, and used to increase the project's visibility.

In the final assessment report that needs to be produced by month 48, one of the questions addressed to companies will be whether they prefer to work with academic institutes in their own countries, or whether they envisage the possibility to work with foreign institutes. This report should be useful, for the future: for example to be used in ACTRIS to show the potential that chambers have.

Conferences and Meetings for engaging directly with Industry Users

Pollutec was probably the biggest event where EUROCHAMP was present during the past year; the evaluation of its success is not obvious: it was definitely significant in terms of visibility and networking, but very few solid contacts established have led to TNA projects (one or two at the max).

It is of general agreement that the sector of start-ups could be more targeted, since they probably need funding to perform tests and experiments.

Since the end of the project is approaching, it is necessary to begin an analysis of the activity. The overall usage of chamber by private sector is quite good but could be very much improved, for several reasons: timing is often an issue for companies, and the obligation of TNA to work in a foreign countries can sometimes be a restraint, for competitiveness reasons and national interest.

WP6 Outreach, Communication and Education – Christian George

During the past year, the main achievement in the communication is the realisation of a promotional video of EUROCHAMP, addressed to a general, non-scientific public. The video has largely circulated on social media, gaining a considerable visibility. This video has been further complemented by another – more detailed under the form of an interview of the Eurochamp coordinator. Both are available on the Eurochamp-2020 YouTube channel and were displayed at public event (such as the ENVRI booth during EGU2019.

Conferences

EUROCHAMP colleagues have participated in two main industry events during the past year: "Pollutec 2018" and Axelera, as mentioned in WP4, the results can be considered relatively successful, as quite some contacts were gained.

In addition, during the weeks before the meeting, Anke Mutzel from TROPOS had suggested to apply for a special session on simulation chambers at the next EAC2020. All the members of the community agree: Anke will collect abstracts, as a minimum number of 20 is necessary for the application to be considered

360° camera

The 3D videos of simulation chambers have increased, with the video of UMAN chamber adding to the list and soon being available, followed by the AIDA and the QUAREC chambers, in the upcoming months.

Training material and school

After the production of two educational videos for students, new possible ideas are discussed in the plenary. It is suggested that a collection of teaching materials could be made available on the website, for master and PhD students.

➔ Peter Wiesen, as task leader, will send an email to all partners asking to provide materials without copyright, in order to create a compilation. Colleagues from University of York already confirmed their availability to provide materials.

An important part of the task related to educational material concerns summers schools. One was organised very recently in Forzungszentrum Jülich, where a special session on simulation chambers was held: 41 international students participated, Jean-François Doussin and Anna Novelli taught the course.

Special issue ACP AMT GMD

All partners are invited to add their publication to the special issue, if they acknowledge the project. Financial support will be possible only until the end of the project.

Next steps

The project final meeting is discussed, as a potential dissemination event: as it would be difficult to add a dedicated session to other already planned conferences during the next 12 months, some members suggest the idea of transforming the final meeting in a larger science conference, where TNA users, company representative and members of other scientific communities could be invited. This possibility will be further discussed within the EB in the upcoming weeks.

Wednesday, October 2nd

WP5 Long-term sustainability and integration of EUROCHAMP in the European environmental research infrastructure and ESFRI landscape – Paolo Laj

The second day of the meeting is concentrated on the integration into the ACTRIS infrastructure. The sessions are divided into four main parts:

1. Presentation of services offered by ACTRIS Topical Centres, and how such services can be adapted based on chambers' needs (all TC leaders)
2. The inclusion of chambers representative into the ACTRIS governance (Sanna Sorvari)

3. Funding model for the provision of access to chambers (Sabine Philippin)
4. Integration of the EUROCHAMP Data Centre into the ACTRIS DC (Bénédicte Picquet-Varrault)

Presentation of services offered by ACTRIS Topical Centres

European Center for Aerosol Calibration & Characterization (ECAC - Alfred Wiedensohler)

Alfred Wiedensohler recall the service offered by ECAC, the principle of the building of its agenda and highlight few recent calibration and training session.

He emphasize through various exemple how the improper use of relatively well disseminated instruments (eg. MPSS) can lead to strongly wrong results.

OrGanic TrAcer and aerosol Constituents Calibration Centre - OGTAC-CC (Anke Mutzel)

Anke Mutzel recall the service offered by OGTAC-CC, the opportunity for access to dedicated session and highlight few recent calibration and training sessions.

In particular, she illustrate how the combination of physical access for training and remote access for Inter-Laboratory Comparison (ILC) is leading both to a general rise of the capacity of the community to measure organic tracers and complex molecule in the atmospheric environment and to a quality check of these capacities.

Calibration Center for aerosol precursor molecules and clusters (CCC and CiGas-UHEL - Tuija Jokinen)

The Calibration Center for aerosol precursor molecules and clusters does not exist yet. The added value for chambers PIs will be the possibility to calibrate instruments needed in chambers that do trace gas and aerosols.

The related instruments are not fully spread among the ACTRIS observational platform while are quite common in the simulation platform community. The related needs and TC capacity are still under developments.

Centre for Aerosol In Situ Measurements (Olivier Favez)

Olivier Favez explains that, as the leading scientists of this calibration that, he does not have thorough experience with exploratory platforms such as chamber. The CC staff is now envisioning to collect as much feedbacks as possible from the chamber community on how the CC can be of use for them.

They consider that artefacts present in ACSM and AMS could be tested in chambers.

ACTRIS Topical Centre for Reactive Trace Gases in Situ Measurements (TC/ Ci-GAS - Stéphane Sauvage)

The presentation highlights:

- the different needs for exploratory and observational platforms

- CI-Gas Activities and labelling processes that could be of interest to simulation chambers
- The fact that simulation chambers have a high potential for model evaluation

Jean-François Doussin proposes that, in order to be flexible, only the instrumentation that should be linked to a TC must fulfil a list of requirements; therefore, if an instrument in a NF is not serviced by any a TC, then it will not be required for it to fulfil any specific requirement aside the need of establishing the full traceability of its operation.

Centre for Cloud in Situ measurements (CIS - Harald Saathoff)
CIS organization chart and variables are presented. Four unit are involved: KIT, University of Manchester, TROPOS, ZAMG Sonnblick Observatory. TC CIS has planned a number of activities to support the NFs: QA, Training, NF operational support (i.e. calibration and intercomparison activities) and user services.

General discussion
During the Q&A, it is asked by Paolo Laj that PI chamber consider, which of the the services offered by future ACTRIS-ERIC TCs are relevant from chamber's need and how they should be implemented or adapted for chambers. It is also requested to collect such list of adapted services.

Gordon McFiggans suggests to consider a flexible process, depending on the maturity of the technology: some operational procedures might be under development and might need their own time to reach the required maturity (thus obtaining the possibility to obtain an ACTRIS label)
→ Reference: ACTRIS Deliverable D5.2

Gordon McFiggans asks if TC leaders have envisaged how to work with the same data protocols, considering the fact that the EUROCHAMP group uses the EDF format. It is therefore suggested the development of dedicated software tools.

Astrid Kiendler-Scharr points out that the interpretation of chamber experiments relies on datasets that would need topical centres because of the specificity of chamber protocols and the skills it requires to takes into account

The members of the chamber community asked to the TC leaders which will be the procedure to do the labelling, and how will chamber requirements be collected, how the instruments that can be calibrated in TC will be listed.

ACTRIS general update – Sanna Sorvari

The presentation aims at introducing a discussion in the plenary on the needs to be developed for the EUROCHAMP chamber community within ACTRIS.

Firstly, a general update on ACTRIS status is given: there is currently a high commitment of participating countries: 22 countries are involved in the preparatory phase (ACTRIS PPP), and 17 of them are involved in the Interim ACTRIS Council (IAC).

The simulation chambers (SC) are considered at national level and somewhat coordinated through EUROCHAMP-2020 but no Topical Centre (TC) coordinates them within the future ACTRIS-ERIC. Currently, TC leaders are trying to find a way to coordinate them at European level, understand where the simulation chamber would be placed in the central facilities (CF) group.

From the legal point of view, ACTRIS aims to become a full legal entity, in the form of an ERIC, in 2021.

Among all the services offered in ACTRIS, in particular the physical and remote access services would be of interested for the EUROCHAMP community, for research, industrial collaboration as well as for training purposes.
It is added from the plenary that another foreseen point of collaboration between ACTRIS and the chambers community is the usability of data.

ACTRIS IMP
ACTRIS IMP project consists of 3 main pillars for implementing:

- long term sustainability
- its components
- its position in research and innovation frameworks

The main ACTRIS IMP activities (see slides ACTRIS IMP - Objectives) are listed and explained.

Chambers are fully integrated in ACTRIS IMP project, which has recently been funded for the upcoming 4 years, starting on January 1st 2020.

ATM access: the deadline is March 2020, for the writing of an access pilot test for different atmospheric facilities; a writing committee has already been established (Paolo Laj is leading it) and the proposal is currently under preparation.

Jean-François Doussin remarks that the development of ACTRIS documents is often a tough task, due to tight deadlines and little time available to engage the community in the creation of the content. Therefore, he invites the ACTRIS HO and ACTRIS IMP Work Package leaders to make them easily available online, and to directly address the EUROCHAMP community.

In all the involved countries, the attitude has been to keep all possibilities open, especially when plans are still uncertain; i.e. no technical requirements for simulation chambers has been written yet; only their status and their technical description have been presented very well and in details.

➔ It is asked to the chambers' community to produce a document with the minimum implementation needs and activities for simulation chamber in next five year, indicating the key links needed between simulation chamber and ACTRIS components (CF and NF).

A second urgent point is the fact that SC representative bodies are missing in ACTRIS and that the ACTRIS structure is rather based on observational needs, and not enough on chambers' needs and point of view.
In the same logic, the ACTRIS business model should also accounts for simulation chamber costs structure. These costs are very different from the one of ACTRIS observational platform costs. Indeed, when non running the cost of chamber are strongly lower than when running because of the high cost of fluid, chemicals and requested manpower. These costs should be well described and documented.

A discussion of the technical description of services and activities for EC and ACTRIS synergies is very much needed: in order for the two communities to work together on these aspects, one or more specific workshops should be organised at the beginning of newt year.

Technical requirements for ACTRIS simulation chambers and related labelling process
The description of the technical requirements, which can be found in the NF requirements' document (D5.2 ACTRIS PPP), is currently quite open: "state-of-the-art instrumentation, compliance with the recommendation of the related TCs when available, establishment of protocols to enable consistency of measurements".

Gordon McFiggans comments the phrasing "protocols to enable consistency": ACTRIS should be aware of the changes needed in the required protocols for exploratory platforms, which are always changing and under further development. Paolo Laj and Sanna Sorvari both recommend a peer acceptance of a set of minimum requirements for SC, which is characterized and well-functioning in given experiment/formats.

Introduction to ACTRIS governance structure and its management components
In ACTRIS IMP the CF leaders will be the main decision body, together with, of course, an Executive Board. The roles are all still to decide, as well as the number of necessary people.
Three groups have to be formed before the beginning of the project, and they need to be part of the governance structure:

1) In situ
2) remote sensing

3) chambers and other types of exploratory platforms

Open questions for the plenary:

- What are the main implementation needs and activities for SC in next 5 year?
- Key interlinkages needed between SC and ACTRIS components (CF and NF)?
- How to organize the SC work in ACTRIS?

Both John Wenger and Hendrik Fuchs underline that the majority of the instruments in chambers are unique, and therefore very difficult to intercompare and to be used in the TCs.
The chambers' community should produce some text cases, needed to find out what variables are valuable for ACTRIS. For this task, a dedicated committee should be formed in the EUROCHAMP group, which would then communicate directly with the TC. The group should divide the instruments in two categories: those that can be calibrated and define their quality insurance; and those instruments which cannot be calibrated because unique.

On a more urgent matter, the EUROCHAMP group is requested to provide the data work flow in a few weeks, even if in a temporary version.

On a more general basis, all chambers' representative are evaluating the advantages of participating in the next steps of ACTRIS; the benefits vary from country to country in terms of national funding. From a general point of view, the main advantages lies in securing an access program such funds will replace the H2020 funded TNA which will soon end. For the facilities involved in ACTRIS-ERIC it implies the commitment of part of their resource toward the service to the users but also hopefully the opportunity of bigger scale and more diverse science projects.

The ACTRIS Head Office will contact each National Facility, including chambers, to ask to list the Topical Centres relevant to their scientific activities, and whose service better match their needs.

ACTRIS access strategy – Sabine Philippin

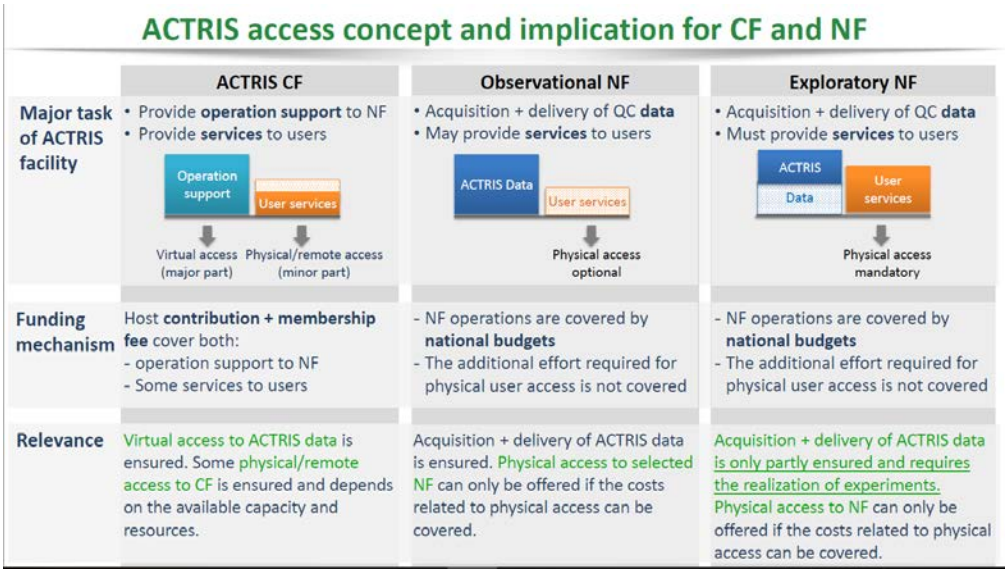
Some of the main ACTRIS policies have already been defined in PPP:

- ACTRIS Data policy → Approved by IAC, October 2018
- ACTRIS access and service policy→ Approved by IAC, October 2018
- Data management plan→ Expected by November 2019
- Access Management Plan → ACTRIS IMP Deliverable

The ACTRIS Funding Model needs to the approved by the IAC in 2020. The document presents a list of costs linked to the implementation of ACTRIS CFs and NFs and shows the funding sources from the countries. Additionally, the funding model provides:

- the CF provision of virtual access → this will correspond to operational support to NF

- CF provision of physical and remote access to ACTRIS services and activities → corresponding to a series of services to users



The costs of physical access can be fixed and variable. The most urgent task is to develop a methodology to evaluate physical access costs. This task has already been tried on two case studies: SAPHIR and EUPHORE chambers. The conclusion is that variable costs are a significant portion of the total access costs.

Physical access costs within ACTRIS can be funded by:

- National and regional funds
- ACTRIS ERIC
- EU: through RI support programmes (INFRADEV, INFRAIA, and INFRAINNOV). A considerable downside in this case is the fact that project funds are limited
- Other funds (private, potential user fees, etc.)

The only sustainable solution for all the costs to be covered, is to mix all the funding sources.

The possibility of a user fee is mentioned, but Sanna Sorvari underlines that the user fee for public sector users is not easy to apply. Users may have some resources, but this is the case for very few countries; in the majority of countries, research is very poorly funded. The choice of applying a user fee would lead ACTRIS to "pick" users on the basis of their financial possibilities, and this is not a fair criteria. Our services should be available to everyone in principle. SAMU will ensure a real selection based on scientific excellence.
John Wenger reminds that costs for access to chambers can be higher than what is currently indicated in the costs analysis for TNA access; for example the data analysis is not included.

Jean-Francois Doussin underlines that the calculation on the running cost of the chambers presented by Sabine Philippin demonstrates that an excellence driven Access Program sponsored

by ACTRIS ERIC would eventually represents a very small fraction of the running cost of the ERIC (ca. 3%). Such a program would have a very large impact on the scientific community of users and would give a high visibility on ACTRIS.

All partners agrees that a funding mechanism to support access to simulation is the only way to guaranty a sustainable insertion of simulation in ACTRIS for the greater benefit of ACTRIS and of users.

The next steps can be summed up as follows:

- Establish principles of access: for this task a feedback from the chambers' community is fundamental, knowing that the document needs to be presented to the IAC in February 2020. For this, a concept paper will be circulated by Sabine among the chambers' community, to be used to list the needs of chambers for access provision in ACTRIS; this task also correspond to EUROCHAMP deliverable 5.2.
- Establish a cost methodology, meaning a cost model and pricing scheme; this step is secondary and will be done during IMP.

WP9 EUROCHAMP Data Centre – Bénédicte Picquet-Varrault

Bénédicte Picquet-Varrault provides a general presentation of the latest developments and advancements in the DC. The thorough description of the Library of Advance data products (new!) is highly appreciated.
Request for a higher rate of submission of data record are expressed.
It is emphasized that the impact of this pillar of the Eurochamp DC on the scientific community can be high.

Towards the merging of EUROCHAMP &ACTRIS DC

The current status of the evolution of the ACTRIS DC is explained in detail. In this DC, the NetCDF data format will be used, and AERIS will work on a programme to automatically convert the EDF data format, currently used in EUROCHAMP, into the NetCDF format for the convenience of the data center that has already a large number of routine ready for NetCDF.
Nevertheless, it is agreed the EDF format will remains the reference (and mandatory format for the submission of EUROCHAMP data).

Amalia Muñoz, from CEAM, raises two important questions:

- Whether the current DASCS data will be saved and converted.
- Bénédicte Picquet-Varrault says that this issue has not been discussed with the ACTRIS-DC group, but because of the status of AERIS (the French infrastructure

operating the EUROCHAMP datacenter) all the data from all EUROCHAMP project will be stored and securely cured over time.

- In the procedure to become NF, it is required to provide two years of high quality data. How will this be compatible with the end of the EUROCHAMP project? NetCDF will have to present this issue to the group in charge of the ACTRIS DC, as indeed this may be a source of contradiction with the NF requirements.

Finally, from the plenary it is asked whether an institutes deciding not be part of ACTRIS, will be able to provide data. *A priori*, this will not be possible, as the data will be supposed to have gone through a quality assurance process that cannot be guaranteed if coming from facilities which are not NF. Indeed, the possibility to share data from the facility is one of the advantages to consider when evaluating the advantages of participating in ACTRIS.

Thursday, October 3rd

WP8 Transnational Access to Calibration Facilities – Harald Saathoff

During 2019, all the CC have been quite active, performing a series of TNA projects and intercomparison campaigns.

- The INP inter-comparison and calibration activity in May 2019, which took place at the AcCloud CC in KIT, with the goal of Intercompare INP instruments and measurement methods: diffusion chambers and new expansion chambers with AIDA INP numbers.

- The Black Carbon intercomparison, which took place in May 2019 at PSI, using the CCSM calibration centre. The activity aimed at improving the reproducibility of rBC measurements using the Laser Induced Incandescence (LII) technique
    - Training sessions on SP2 data processing and analysis
    - Common calibrations and intercomparison measurements with BC standards (fullerene soot, Aquadag) and real-world BC aerosols (diesel soot coated with secondary organic aerosol, BC mixed with magnetite dust)

  The outcomes of the campaign are 2 manuscripts in preparation (1 SP2 intercomparison paper, 1 pulsed-shot LII intercomparison paper); and the fact that 5 of the hosted SP2 instruments are or will soon be participating in the MOSAiC project at various sites across the Arctic, allowing the capture of a pan-Arctic snapshot of rBC concentrations and properties.
- The WCCAP in TROPOS has been very active and has hosted several EUROCHAMP and external users for calibration trainings.
- Finally the OGTAC CC has hosted the two regular annual trainings, (one of which will take place in November 2019), both of them very successful.
- The third ILC on anthropogenic marker compounds was launched in August 2019, but only 2 applications were received, one of them coming from the EUROCHAMP group.

➔ Implementation into ACTRIS: **OGTAC will become an unit of the ECAC** Topical Centre (European Centre for Aerosol Calibration and Characterization)

- ➔ ACTRIS variable: the variable which will be studied is the mass concentration of particulate organic tracers
- ➔ Tasks: Calibration Workshops, Inter-laboratory comparison, Definition of QA/QC criteria and procedures, definition and establishment of measurement guidelines and standard operation procedures.

WP10 Evolution of atmospheric simulation chamber infrastructure to address broader scientific and societal needs - David Bell

The session is chaired by David Bell (PSI) in place of Urs Baltensperger as the WP leader is kept in Oslo for urgent matter.
All the task leaders present the most recent advancements in all the aspects of the Work Package. A special emphasis is given to the work directly related with shortly upcoming deliverables.
While numerous, the joint research activities carried out with WP10 appears to proceed well in a coordinated matter and clearly allow us to expect further improvement of the service provided by simulation chambers.

In the case of D10.8, it is asked by the task leader FZJülich, that the following groups send a report by 15th November 2019: ULEEDS, FZJ, TROPOS, CNRS ICARE, UCC, PSI, and CNRS IRCELyon (new contributor). The reports will be the basis for the deliverable due on month 36.
Several deliverables are due before November 30th 2019: D10.7, D10.8, D10.9, D10.10, D10.11, D10.12, and D10.13. For all of them, the same timeline applies: all contributions from involved partners need to be sent to the task leader by October 20th, and the leader will submit the complete deliverable by November 20th to the Project Office.

WP7 Physical access to the chambers – Peter Wiesen, et al.

The session is divided into two main parts. Firstly, a general overview of the TNA statistics is provided to the plenary. During 2019, two thirds of the dedicated TNA budget were spent, reaching a total of 72 submitted proposals and 154 users accessing the facilities.
Further statistics are available in the presentation.
The second part of the session is dedicated to the presentation of the main highlight projects which took place in the past years in each of the chambers providing TNA access.

Friday, October 4th

WP11 Model development and evaluation to enhance and optimally exploit the chamber infrastructure – Gordon McFiggans

The session is chaired by Gordon McFiggans as the WP leader but it is the task leaders who are in charge of presenting the most recent advancements in all the aspects of the Work Package.

Concerning the available modelling tools, it is underlined the need for a place for feedback about their usage. The most suitable place would surely be the Data Centre. Bénédicte Picquet-Varrault will discuss with the AERIS team whether a form of feedback system or a forum can be put in place.
Another useful tool to develop in the DC would be a way to monitor the usage of these models (their download, etc.), for example through statistics about the access to the related pages.

Several deliverables are due before November 30th 2019: D11.1, D11.2, D11.3, D11.4, and D11.5. For all of them, the same timeline applies: all contributions from involved partners need to be sent to the task leader by October 20th, and the leader will submit the complete deliverable by November 20th to the Project Office.

One last deliverable and its related milestone are due by month 40, INFN is the task leader for them. Paolo Prati believes that the deliverable document can be ready in time.

International Advisory Board report

Tim Wallington, member of the IAB, has been present throughout the all duration of the annual meeting. The overall outcome of his report is very positive about the project's achievements. Particularly positive remarks are addressed to the latest intercomparison campaigns. He underlines the importance of the DC and that its full potential can be achieved only if all partners seriously commit to upload the necessary data in it.
From his point of view as a scientist working in the private sector, TNA rules can indeed be a barrier for industry users, as often unfortunately there is discomfort from industries to share knowledge with academic institutions; the possibility of using chambers in their own countries would significantly help increase the number of collaborations.

General Assembly

The General Assembly opens at 10 AM.

The agenda is the following:

1) Amendment to add INFN chamber (ChAMBRe) to the TNA programme
2) New Associated Partners
3) Various other points

1) The amendment was requested with the goal to add a new infrastructure for the provision of physical access (TNA programme) to users. In particular, the partner INFN (Italy) has worked during the past years for the construction of a new simulation chamber (ChAMBRe), specialised in the study of bioaerosols. Initially, the chamber was not included in the TNA programme, because of uncertainties in the agenda of its technical development. This was considered as a potential risk but eventually, the implementation of this new facility has been successful and faster than expected.

INFN is now offering to provide physical access to external users, and is currently receiving several requests of access to their infrastructure. This is particularly interesting for EUROCHAMP's objectives, because it opens the use of simulation chambers to new fields of application (i.e. the study of bioaerosols properties and bio-aerocontamination potentials which has important links to public health).

Such addition is made possible because it is now clear that some access units will not been spent. At least, the access units offered by CASC will not been spent because of the dismantling[1] of the installation hosted by Linked Third Party University of Cambridge.

After presenting the related budget transfer, the proposal is submitted to a voting: 0 partners are against and 0 are abstained. All partners are in favour.

2) Associated Partners

For information, three new APs have joined the project during the past months:

- Institut Mines Télécom Lille Douai, represented by Prof. Alexandre Tomas
- Université du Littoral Côted'Opale, represented by Prof. Cécile Cœur
- University of Bayreuth, represented by Prof. Anke Nölscher

Their approval had already been submitted to voting through online GA session.

No other matter is brought up by members of the GA. The meeting ends at 11.35 AM.

[1] This dismantling is due to a change in the CASC PI's position and affiliation dismantled. It has been formally established by University of Cambridge that the chamber will no more provide access to external users. The GA has been informed about this situation during the Patras meeting.

Participants' list

N°	Name	Last name	Institute	Country
1	Rami	Alfarra	University of Manchester	United Kingdom
2	Iustinian - Gabriel	Bejan	Alexandru Ioan Cuza University of Iasi	Romania
3	David	Bell	Paul Scherrer Institute	Switzerland
4	Merete	Bilde	Aarhus University	Denmark
5	Jean-François	Doussin	CNRS LISA	France
6	Hendrik	Fuchs	Forschungszentrum Jülich	Germany
7	Christian	George	CNRS IRCELyon	France
8	Michael	Giordano	CNRS LISA	France
9	Päivi	Haapanala	UHEL	Finland
10	Thorsten	Hohaus	Forschungszentrum Jülich	Germany
11	Jan Niklas	Illmann	University of Wuppertal	Germany
12	Pasi	Jalava	UEF	Finland
13	Tuija	Jokinen	UHEL	Finland
14	Eija	Juurola	UHEL	Finland
15	Jan	Kaiser	University of East Anglia	United Kingdom
16	Astrid	Kiendler-Scharr	Forschungszentrum Jülich	Germany
17	Paolo	Laj	UHEL	Finland
18	Ari	Leskinen	University of Eastern Finland	Finland
19	Dario	Massabò	INFN	Italy
20	Gordon	McFiggans	University of Manchester	United Kingdom
21	Wahid	Mellouki	CNRS ICARE	France
22	Santtu	Mikkonen	University of Eastern Finland	Finland
23	Amalia	Munoz	CEAM	Spain
24	Anke	Mutzel	TROPOS	Germany
25	Mike	Newland	University of York	United Kingdom
26	Dennis	Niedermeier	TROPOS	Germany
27	Anke	Nölscher	Bayreuth University	Germany
28	Romeo-Iulian	Olariu	Alexandru Ioan Cuza University of Iasi	Romania
29	Matilde	Oliveri	CNRS LISA	France
30	Spyros	Pandis	FORTH	Greece
31	Mikhail	Paramonov	FMI	Finland
32	Iulia	Patroescu-Klotz	University of Wuppertal	Germany
33	Sebastien	Perrier	CNRS IRCELyon	France

34	Sabine	Philippin	CNRS LAMP	France
35	Bénédicte	Picquet-Varrault	CNRS LISA	France
36	Paolo	Prati	INFN	Italy
37	Andrew	Rickard	University of York	United Kingdom
38	MILA	RÓDENAS	CEAM	Spain
39	Harald	Saathoff	KIT	Germany
40	Giulia	Saponaro	FMI	Finland
41	Stéphane	Sauvage	IMT Lille Douai	France
42	Paul	Seakins	NCAS LEEDS	United Kingdom
43	Olli	Sippula	UEF	Finland
45	Sanna	Sorvari	FMI	Finland
46	Ilkka	Summanen	UEF	Finland
47	Alexandre	Tomas	IMT Lille Douai	France
48	Joonas	Vanhanen	Airmodus Ltd	Finland
49	Annele	Virtanen	University of Eastern Finland	Finland
50	Tim	Wallington	Ford	USA
51	John	Wenger	University College Cork	Ireland
52	Alfred	Wiedensohler	TROPOS	Germany
53	Peter	Wiesen	University of Wuppertal	Germany

Integration of European Simulation Chambers for Investigating Atmospheric Processes. Towards 2020 and beyond

Time	Tuesday	Wednesday	Thursday	Friday
09:00 - 10:00	Intro (30') + **WP2**	**ACTRIS-EUROCHAMP session** 1) *Services offered by TC CAIS, TC CIGAS and TC CIS* (15 min each+ 15 min discussion) - The level of participation required to exploratory platforms - First information on ramping up of the activities - Are the services responding to needs? - How to identify services offered by chambers in TC operations	**WP8** and usage of Calibration Centres by E-2020 during the project and in the future	**WP11**
10:00 - 10:30	**WP2**		**WP10**	
10:30 - 11:00	Coffee break			
11:00 - 12:30	**WP3**	2) *ACTRIS governance* (Sanna Sorvari) - Possibility of a Chamber committee in ACTRIS governance	**WP10**	**General Assembly**
12:30 - 13:30	Lunch break			
13:30 - 15:00	**Handbook session**	3) *ACTRIS access strategy* (Sabine Philippin) - SAMU and the physical access process in ACTRIS - Presentation of the cases HELIOS, PSI intercomp. - Presentation of physical access operations - Feedbacks from NF operators and implication for chamber operations. - Which data will be in ACTRIS DC at the end? - Feedback from community on expected access program in operational ACTRIS	**WP7 TNA session** Access providers presenting highlights of TNA activities	*Travelling*
15:00 – 15:30	Coffee break and **associated partners' poster session**	Coffee break		
15:30 - 16:30	**WP4**	**Data Centre workshop** - LADP - Statistics on data provision - Future of EUROCHAMP DC and data workflow	*15:30-15:45: Puijo SMEAR IV station presentation (taking place in the meeting room)* *ILMARI chamber visit*	
16:30 - 17:30	**WP6**			