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| Milestone n° | 21 |
| Lead beneficiary | ICOS ERIC |
| Author(s) | Alex Vermeulen, Ute Karstens, Damien Boulanger, Audrey Gaudel, Lise Eder Murberg, Cathrine Lund Myhre, Valerie Thouret, Pawel Wolff |
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| Accepted by | n.a. |
| Comments | |





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Footprint tool

April 30, 13:00-14:30 CEST via [Zoom](#)

Participants: Ute Karstens (ICOS), Alex Vermeulen (ICOS), Maggie Hellström (ICOS), Mar Sorribas (INTA / ESA-EI Arenosillo), Lise Eder Murberg (NILU), Sabine Eckhart (NILU), Cathrine Lund Myhre (NILU), Valerie Thouret (CNRS & UT3 / IAGOS), Pawel Wolff (CNRS/IAGOS), Kateřina Komínková (CzechGlobe), Paolo Cristofanelli (CNR), Nikolaos Evangeliou (NILU), Filip Desmet (BIRA-IASB), Laszlo Haspra (ATOMKI), Hannah Clark, Dmitrii Krasnov (EMU)

Agenda:

For each service, we will start with a very short presentation of the tool (5 minutes) and the updates implemented based on the feedback we received in the previous meeting and from other users (5 minutes), followed by an open discussion with feedback from the users on this specific tool (15 minutes). We'll wrap up with 15 minutes of general discussion.

IAGOS Footprint Tool (vertical gradients)

Presented by Pawel Wolff

Link to the presentation:

<https://extra.core-cloud.net/collaborations/ATMO-CONNECT/WP5%20Documents/ATMO-ACCESS%20IAGOS%20Footprint%20User%20Panel%20April%202024.pptx?d=wf4c6b2f230b44a38b60008183dc25685>

Remarks and discussion:

- Due to irregular temporal data availability for many IAGOS airports, a time filter was added to the IAGOS Footprint Tool, in order to facilitate users with selection of events of interest.
- A new user guide was presented.
 - The users have commented that a button in the tool's user interface which redirects to the page with the user guide is too small and not easy to discover. It was proposed to make the button bigger and more visible.
 - Maggie Hellström proposed to add examples of scientific use-cases to the user guide.
 - The user guide should be accessible also outside the service. To this end, an appropriate link in the Atmo-Access/VirtualAccess page should be added.
- Data download is still under development. Since the data to download will be partially aggregated with respect to the original source, it was suggested that a link to a source data should accompany the download.
- Users should be guided on how to cite a usage of the service, the downloaded plots or data. It was proposed that an acknowledgement notice should be added to the page with the service and to the downloaded dataset's metadata.

ICOS Footprint Tool (GHG)

Presented by Ute Karstens

Link to the presentation:

<https://extra.core-cloud.net/collaborations/ATMO-CONNECT/WP5%20Documents/ATMO-ACCESS%20ICOS%20Footprint%20User%20Panel%20April%202024.pptx?d=w7972aeade89e481c8eaa29db97e9702a>

Remarks and discussion:





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- Methane calculations were added to the STILT footprint tool, resulting concentrations are split into natural and anthropogenic components.
- Preselection of the station set (ICOS network, stations available in ObsPack and all available results) was implemented to facilitate the search and selection of stations.
- The documentation and user guide are available on the ICOS website, no login required. This also includes a description of the updated way to select different measurement heights for the same locations.
- Wildfire emissions are implemented for CH₄ only but should be added for CO₂ as well.
- Scientific evaluation of the model simulations by users and respective feedback is very much appreciated by the tool developers.

ACTRIS Footprint Tool (aerosols & BC)

Presented by Sabine Eckhardt

Link to the presentation:

https://extra.core-cloud.net/collaborations/ATMO-CONNECT/WP5%20Documents/ATMO-ACCESS_user_panel_April2024_FLEXPART_noanimation.pptx?d=wfdc21fa59a3f43a088b3521944aaa8f3

General discussion and recommendations:

- Login via ATMO-ACCESS seems to work better now, eduGAIN is now available for more organizations.
- In general, users should be guided on how to acknowledge the project and the services. This should be clearly stated in each of the services, as in the example in the presentation of the ACTRIS tool.
- Downloaded/downloadable results should get PIDs.
- Should this service be continued after ATMO-ACCESS? There is interest by the users, but funding needs to be secured.
- Continue advertising the service at conferences and workshops, potentially including hands-on sessions and adding scientific use case examples.
- Make user guides available outside the service by providing respective links at the initial ATMO-ACCESS virtual-access page.





Time-series analysis service

Date 23/04/2024

Participants

Live discussion: Damien Boulanger, Pawel Wolff, Valérie Thouret, Maggie Hellström, Susanne Rohs, Ulrich Bundke, Alicia Gressent, Hannah Clark, Filip Desmet, Ewan O'Connor, Yasmine Bennouna, Lise Eder Murberg

Additional written comments: Carlos Ordonez

Minutes

Introduction of the context by Valérie Thouret

Presentation by Pawel Wolff

Link to the presentation:

<https://extra.core-cloud.net/collaborations/ATMO-CONNECT/WP5%20Documents/ATMO-ACCESS%20time%20series%20User%20Panel%20April%202024.pptx?d=w516d7a9ad3c440dd9a2f8dd29cfaa6f2>

- Presentation of the online user guide : ok for everyone, no comments
- Search datasets - Stations map :
 - the selection box shouldn't be activated by default, or it should be more clear (confusing for some users)
 - add completion for dropdown list for the stations
- Datasets selection :
 - need to add the units on the quicklook plot
 - problem of min and max on the quicklook plot
 - add dropdown lists to improve selection (for parameters, etc.)
- Data filtering
 - add filtering by month(s)
 - data availability plot: too much labels on the x axis in some circumstances
 - name of the variables sometimes too long
 - hover for box plot not readable
- Data Analysis
 - Preserve filter data settings in case of going back to the filter data tab (bug)

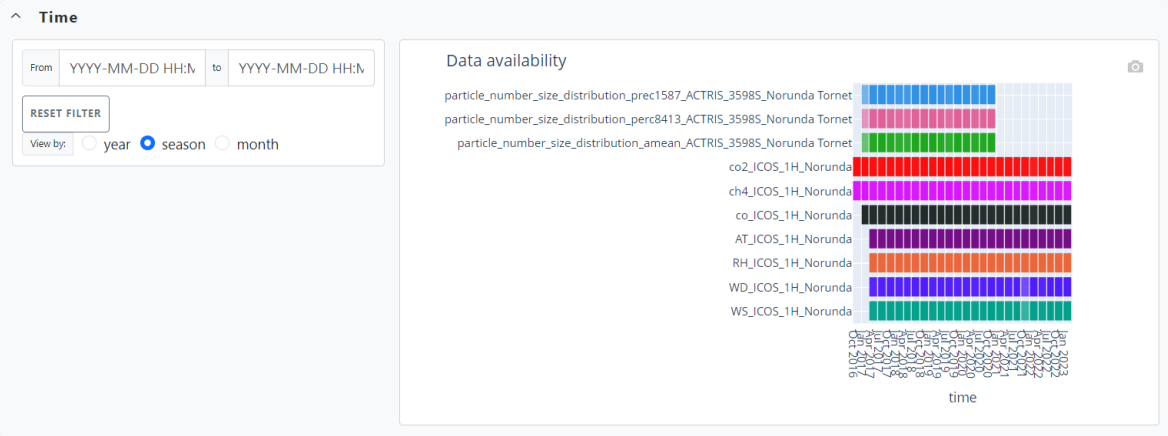
Some screenshots from Maggie Hellström:

The very long ACTRIS variable names create issues, squeezing the "data availability" matrix together on the right-hand side...





Filter on time and examine data availability



Again, long variables lead to overlap of text/display elements and graphs being squeezed together:



- Data analysis:
 - it would be useful to keep datasets selection from a previous session
 - data download would be nice: providing landing pages for RI dataset + download of generated data by the service is planned
 - possible to have a single hover with instant values of all plotted time-series?
 - add disclaimer/general statement for users (e.g. trends estimation) → responsibility of the users
- General comments:
 - login wasn't easy at the beginning for people not based at a French institute (or indeed not francophone ;>)
 - impressive service
 - link to the code repository: <https://github.com/iagos-dc/atmo-access-time-series>, we need to add a licence!
 - problems with login:
 - bogus accounts, need to improve the AAI guidance
 - keep it after the project? planned to use the ENVRI AAI





- implement a 2-steps approach? (see ENVRI AAI)
- how to make promotion of the service: poster to conferences

Comments from Carlos Ordonez by email:

The website looks very good. It has some very useful functionalities. Here are just some comments about things I like and ideas about things that could be improved, although I understand that quite often it is difficult to implement technically what the users would like to see:

(a) I like many things from page 3 (filter data) and 4 (data analysis). The data selection/filtering is relatively simple and the tools (exploratory, trend and multivariate analysis) in Data analysis look very good. It is great that we can aggregate data by day/month/season, that three different methods for trend calculation (two of them non-parametric) have been implemented, that one can even remove the seasonal component or that you report trends with 95% confidence intervals. Overall, it looks great.

What is missing for me is a functionality that allows the user to select the data during some specific months of the year. Quite often we are interested in knowing what the concentrations/values/trends/etc. of a given variable look like during specific months (e.g. O₃ in summer, spring, or extended summer season; temperature during some specific cold/warm months of the year, ...).

Would it be possible to select data from an initial date to a final date (as implemented now) but considering only the months the user would like to use? I think this is relevant because quite often we need to do some analyses only for specific times of the year.

(b) It is great that we can download the plots. I understand that this type of user interface is not meant to provide the raw data. However, in addition to the plots, **would it be possible to download some of the processed data as ascii files?** Examples: It would be useful to download the daily/monthly/... aggregated data that is displayed in the time series, or even the pairs of (x,y) values that are used in the scatter plots.

(c) From the first page (1 Search datasets) one can select/deselect different research infrastructures, sites and variables. To be honest, after several months without having a look at it, I found it a bit overwhelming. For instance, I was selecting a specific variable like O₃ and many sites, but sometimes didn't find the data in the following page (Selected datasets). Then I realized that this was normal for O₃ because it is only measured by IAGOS ...

At the beginning I was going to ask whether it would be possible to select a given variable and see the sites where it is measured on the map of page 1 (Search datasets), i.e. after selecting/deselecting the variables the sites would appear/disappear. However, I understand that this is not easy to implement when you have so many variables from different infrastructures. So the way it is implemented now is most probably fine for most users. The user just needs to spend some time at the beginning. After re-reading all the information (page 0 Information) and doing some tests, I



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managed. If one selects whatever fields (O₃, CH₄, temperature, etc.) from page 1 then from the second page (2 selected datasets) one can find the sites and periods in which the different fields are available, so overall this is already quite complete.

(d) I would love to find something similar e.g. for O₃ or PM data at EMEP sites in the future. No worries. I know this is not your job, because this functionality is only for research infrastructures.

Overall, very good work. Please consider whether something can be done about comments (a) and (b) if that is possible at all. In particular, being able to select data during specific months would really help.

