

Milestone M30 (M5.2)

Overview of measurements and products on
conditions and pollution above surface



RI-URBANS

**Research Infrastructures Services Reinforcing Air
Quality Monitoring Capacities in European Urban &
Industrial Areas (GA n. 101036245)**

By

CNRS & IAGOS



10 July 2024

Milestone M30 (M5.2): Overview of measurements and products on conditions and pollution above surface

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|------------------------------------|---|
| Work package (WP) | WP5 / Strategic guidance for upscaling RI-URBANS STs |
| Milestone | M30 (M5.2) |
| Lead beneficiary | CNRS |
| Means of verification | Workshop held |
| Estimated delivery deadline | M35 (31/08/2024) |
| Actual delivery deadline | 10/07/2024 |
| Version | Final |
| Reviewed by | Project Coordination Team |
| Accepted by | Project Coordination Team |
| Comments | Report describing the content and major outputs of the workshop to identify the measurements and data products on conditions and pollution above surfaces that are relevant to RI-URBANS at the pilot cities. |

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1. About this document

This RI-URBANS project milestone (M30 (M5.2)) documents a virtual workshop dedicated to identify the measurements and data products on conditions and pollution above surface that are relevant to RI-URBANS at the pilot cities. This workshop is an update of the overview made during a previous similar [workshop](#) held on 16 November 2022. The IAGOS data centre will be the repository for airborne data acquired in the context of WP1 and in the context of specific aircraft campaigns part of WP4.

This is a public document, available in the RI-URBANS website (<https://riurbans.eu/work-package-5/#milestones-wp5>). The document will be distributed to all RI-URBANS partners for their use and submitted to the European Commission as RI-URBANS Milestone M30 (M5.2).

2. Workshop minutes

Participants: Damien Boulanger, Valérie Thouret, Andreas Petzold, Christoph Mahnke, Gilles Forêt

Contribution by email: Vincent Michoud, Martial Haeffelin

The workshop has been held on 3 July 2024. Were invited, identified data providers of observations above surface relevant to RI-URBANS (i.e. by variables measured and cities covered).

First, the IAGOS observations have been identified:

- Only 4 pilot cities are visited so far by the IAGOS aircraft: Paris (Figure 1) Milano, Barcelona and Zurich.
- A web page has been set up to visualise the vertical profiles above those cities (at this address: <https://www.iagos.org/products/> under the RI-URBANS section).
- So far only Level 2 (final calibrated observational, Figure 2) data are provided to IAGOS users at this address: <https://iagos.aeris-data.fr/download/>.
- Therefore a FTP repository has been set up for RI-URBANS participants in order to provide NRT (Near Real Time) data for the 4 cities. After validation data are available through regular L2 download.
- So far only ozone (O₃), Carbon monoxide (CO) and water vapour (H₂O) variables are available for the 4 cities. NO_x data should be available after summer after an Air France aircraft based in Paris will be equipped with NO_x sensors (the so-called IAGOS Package 2b: <https://www.iagos.org/iagos-core-instruments/package2b/>). Availability will be dependent on the installation schedule and the validation of the data in Level 1 (preliminary observational data) that can take months.
- If new pilot cities are visited, data will be automatically available for RI-URBANS participants
- IAGOS has some data over other European cities (e.g. Lisbon) that could be provided to RI-URBANS if wanted.

Figure 2: Screenshot of the IAGOS observational data download tool. <https://iagos.aeris-data.fr/download/>.

Second, aircraft observations made during the ACROSS campaign close to Paris in summer 2022 have been identified:

- ACROSS is a project supported by the Make Our Planet Great Again initiative that enables focused research on the interactions of urban and biogenically-influenced air masses. A highlight of this project is a comprehensive, multi-platform field measurement campaign that took place near Paris in summer 2022 (more information here: <https://across.aeris-data.fr/>).
- So far, 19 datasets are available in open access at this address (Figure 3): <https://across.aeris-data.fr/catalogue/?checkBoxCriteria=%7B%22platforms%22%3A%5B%22https%3A%2F%2Fvocab.aeris-data.fr%2Fplatform%2Fb0681820-3837-a4ae-b7e9-88a6c0cf8f52%22%5D%7D¤tSelection=69dd65fc-6c73-406f-81fe-e209f916018f>
- Observations have been made on one of the SAFIRE French research aircraft.
- Available variables are: Greenhouse gases, aerosols, nitrogen oxides, etc.
- New airborne datasets may be added in the next months.

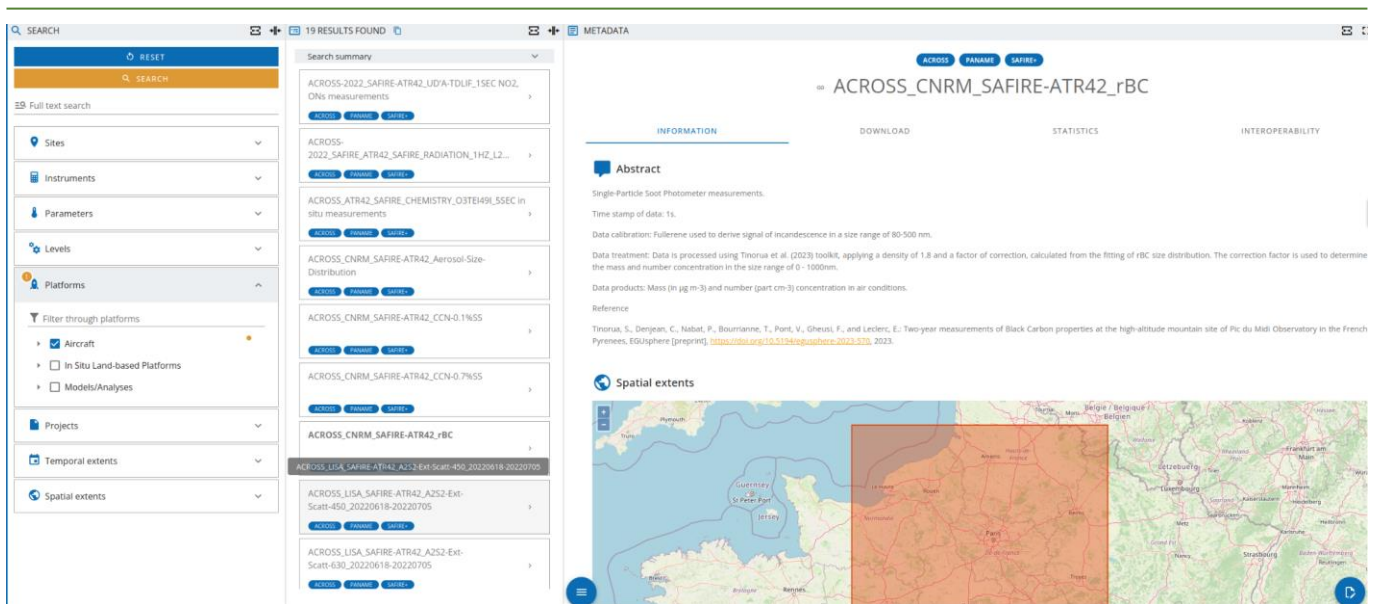


Figure 3: Screenshot of the ACROSS metadata catalogue (selection of airborne datasets)

IAGOS and ACROSS data centres are managed by AERIS, the French Data and Services Centre for Atmosphere. Data are also available through the AERIS metadata catalogue

(<https://www.aeris-data.fr/catalogue/?checkboxCriteria=%7B%22projects%22%3A%5B%22AIRCRAFT.IAGOS%22%2C%22CAMPAIGNS.ACROSS%22%5D%2C%22platforms%22%3A%5B%22https%3A%2F%2Fvocab.aeris-data.fr%2Fplatform%2Fb0681820-3837-a4ae-b7e9-88a6c0cf8f52%22%2C%22https%3A%2F%2Fvocab.aeris-data.fr%2Fplatform%2F14bff442-cba8-31d4-b814-8d3afa43a7eb%22%5D%7D¤tSelection=dd0a9209-c273-461d-b5b1-9af2f71bc693>)

Finally, observations made on the Generali balloon have been identified:

- The balloon Generali is a tethered helium balloon used as a tourist attraction and as an air quality awareness tool. With optimal weather conditions, the Ballon Generali can reach an altitude of 300 m (980 ft).
- Available measurements are Ozone, aerosols and greenhouse gases. Data are measured since 2017 but without continuity and can be sparse according to the variables.
- The data isn't published yet. IAGOS and AERIS will see how to provide the data to RI-URBANS partners.