

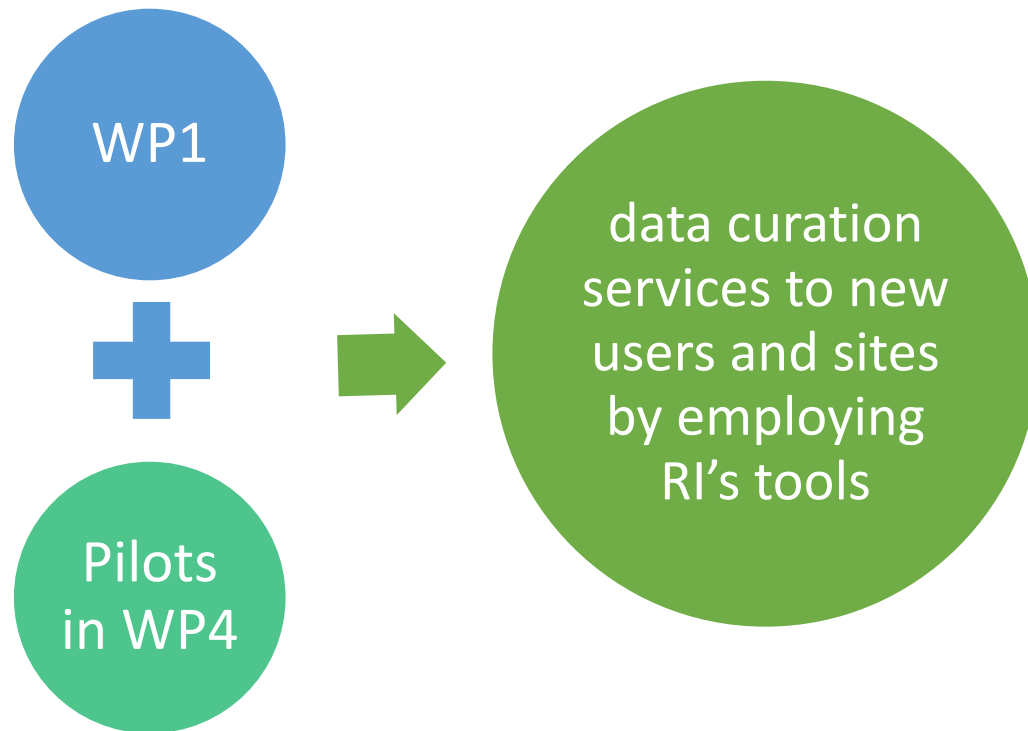
Data produced and management

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RI-URBANS data curation and management

Utilizing service tools in ACTRIS and IAGOS

NRT data as well as regular submissions



Advantages of using ACTRIS and IAGOS:

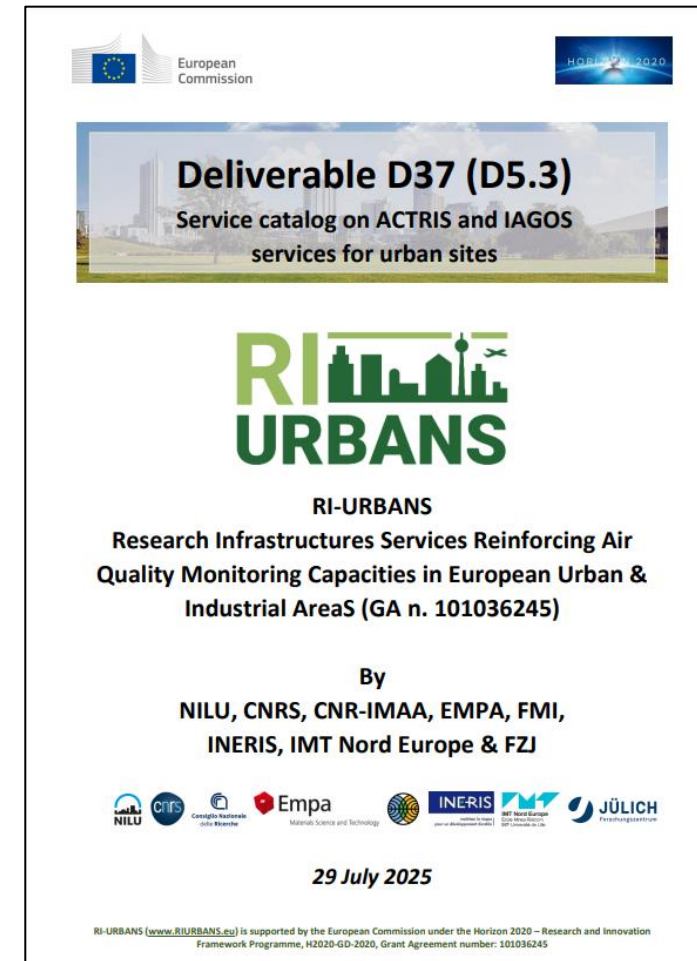
- harmonised meta data and documentation of quality of data with regional background sites
- Sustainable access for future use
- Compare data formats, access procedures and vocabulary with regional background sites and aircraft data
- DOI and licensing is in place
- Overall: making data FAIR findable, accessible, interoperable and re-usable (FAIR)

Using the SOPs developed in ACTRIS and GAW

- comparable data across measurement domain

Service tools on ACTRIS and IAGOS for urban sites

- Access to data services
 - Data curation services
 - Data products
 - Processed products
 - Tools for visualization of observations
 - Data analysis tools
- Training
- Instrument calibration
- Quality assurance



Data management

- RI-URBANS data have been made publicly available, following the reporting guidelines outlined in the RI-URBANS **data management plan (D43/D5.9)**
 - Data curation should follow the ACTRIS guidelines and be published in compliance with FAIR principles, using the EBAS infrastructure (<https://ebas.nilu.no/>).
- A summary of the available data (per sept 2023) was presented in the **Open Research Data report (D36/D5.2)**
- Updated status per sept 2024 available from ACTRIS, EBAS and on the RI-URBANS website (<https://riurbans.eu/results/#open-data>).



RI-URBANS
Research Infrastructures Services Reinforcing Air
Quality Monitoring Capacities in European Urban &
Industrial AreaS (GA n. 101036245)



27th September 2023

RI-URBANS (www.riurbans.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-GD-2020, Grant Agreement number: 101036245



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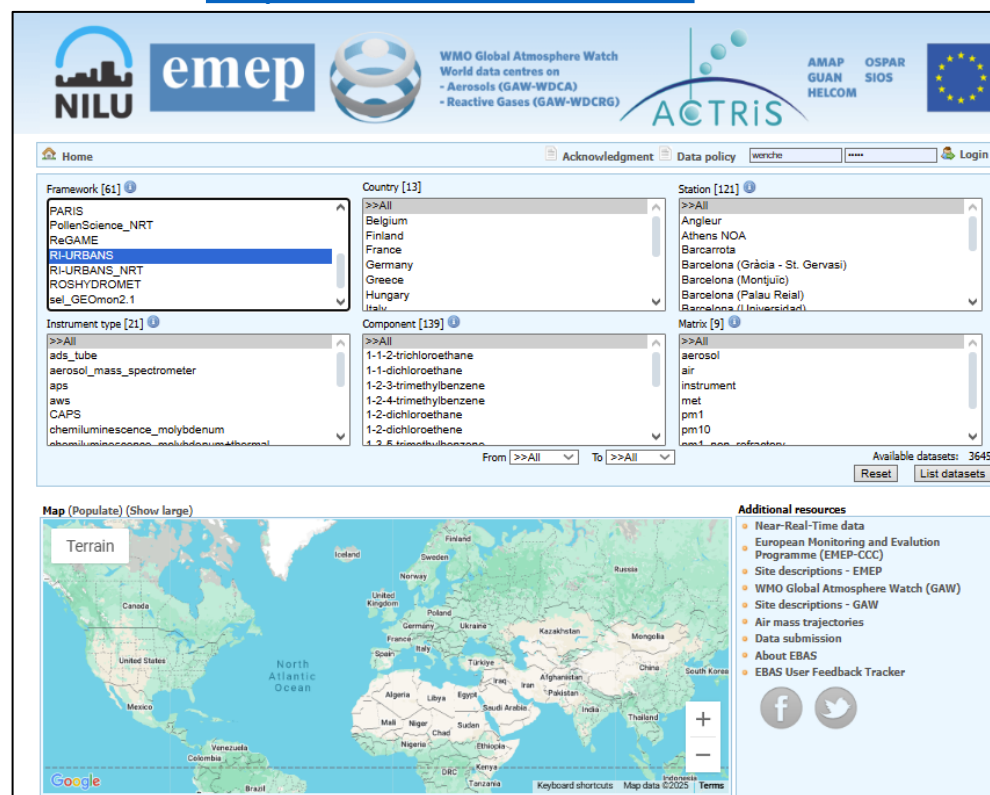


28th March 2023

RI-URBANS (www.riurbans.eu) is supported by the European Commission under the Horizon 2020 – Research and Innovation Framework Programme, H2020-GD-2020, Grant Agreement number: 101036245

Status sept 2025 of in-situ RI-URBANS data reported to EBAS

<https://ebas-data.nilu.no>



The screenshot shows the EBAS data portal interface. At the top, there are logos for NILU, emep, WMO Global Atmosphere Watch, ACTRIS, AMAP, OSPAR, HELCOM, and the European Union. Below the logos, there are several dropdown menus for filtering data: Framework [51], Country [13], Station [121], Instrument type [21], Component [139], and Matrix [9]. The 'RI-URBANS' framework is selected. Below the filters, there is a map of Europe and a list of additional resources. The bottom right corner shows the number of available datasets: 3645.

- 121 sites
- 13 countries
- 139 compounds
- 21 instrument types
- 191 DOIs

3645 datasets

NRT in addition

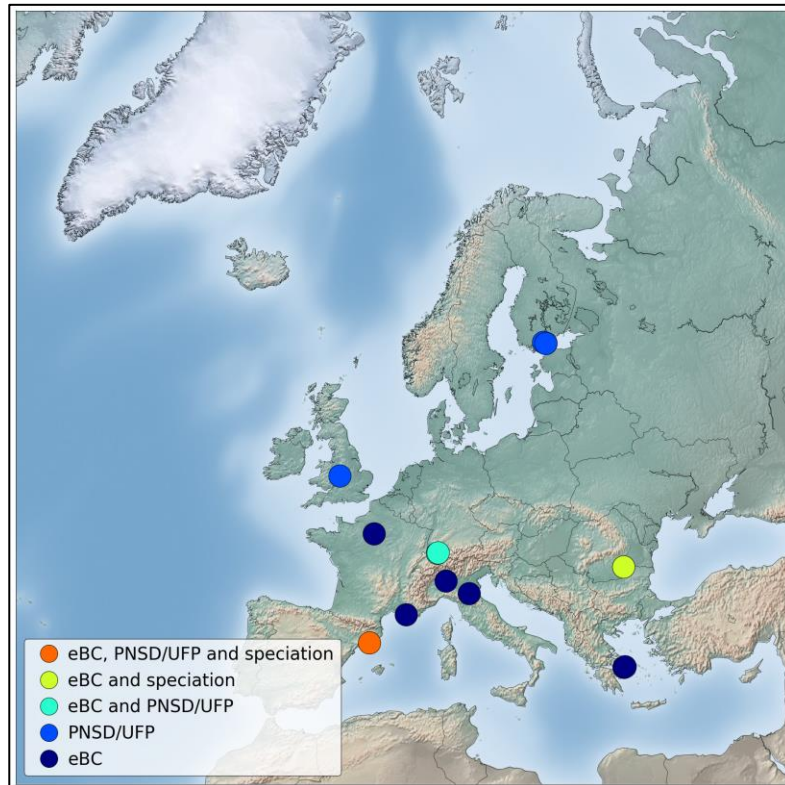
Additional relevant datasets reported to ACTRIS and other networks, but not tagged with RI-URBANS

Status NRT (9 cities/areas -15 sites)

More than fulfilled the obligations of 1 year pilot NRT

Continue the service

DOIs being
implemented



Pilot	Code	Site	Instrument	Start	Stop
ATH	GR0004U	Athens NOA	AE33	Jan-25	ongoing
ATH	GR0100B	DEM_Athens	AE33	Nov-23	ongoing
BCN	ES0019U	Barcelona (Palau Reial)	AE33	Mar-23	ongoing
BCN	ES0019U		ACSM	Mar-23	ongoing
BCN	ES0019U		SMPS	Nov-23	ongoing (issues)
BIRM	GB0101U	Air Quality Site (BAQS)	DMPs	Nov-23	ongoing (issues)
BUC	RO0010R	RADO-Bucharest II	ACSM	Mar-23	ongoing (issues)
BUC	RO0010R		AE33	Jan-23	ongoing (issues)
HEL	FI0038U	Kumpula (SMEAR III)	DMPs/CPC	Aug-23	ongoing
HEL	FI0038U		AE33	Aug-25	ongoing
HEL	FI0039U	Mäkeläkatu	DMPs	Aug-23	Des-24
HEL	FI0040R	Luukki	DMPs	Aug-23	ongoing
HEL	FI0051U	Helsinki (Teollisuuskatu)	DMPs	Jan-25	ongoing
MIL	IT0022C	ISAC Bologna II	AE33	Dec-22	ongoing
MIL	IT0025U	Milano Pascal	AE33	Jan-23	Mar-24
PAR	FR0020R	SIRTA	AE33	Feb-23	ongoing (issues)
PAR	FR0020R		ACSM	Feb-23	ongoing
ZUR	CH0007U	Dübendorf	AE33	May-25	ongoing
ZUR	CH0007U		CPC	May-25	ongoing (issues)
ZUR	CH0010U	Zürich-Kaserne	AE33	Jan-23	May-25
ZUR	CH0010U		CPC	Jun-24	May-25
	FR0035U	Marseille Longchamp	AE33	Mar-23	ongoing (issues)

Pilot – Task	European City	ATH	BCN	BIRM	BUC	HEL	MIL	PAR	ROT	ZUR
P1 - T4.1 - NRT aerosols		X				X	X	X		X
P2 - T4.2 - NRT nanoparticles			X	X		X				

Remote sensing

- **CLU - Cloud remote sensing data center (ACTRIS)**

● Valentia	Ireland	51.9383°N	10.2411°W	25 m	RI-URBANS
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- **ARES - Aerosol remote sensing data center unit (ACTRIS)**

- NATALI Earlinet Typing 2015-2023.
(Neural Network Aerosol Typing Algorithm based on Lidar data)
- ACTRIS/EARLINET Level 3 2000-2019 climatological dataset

Variable	Instruments	#NRT sites	#sites	# data sets (level 2)	Link to dataset (level 2)
Aerosol absorption coefficient (also used for estimating eBC)	Filter absorption photometers (MAAP, AE33, AE31)	10.0	47.0	288.0	EBAS
particle number size distribution (PNSD)	DMPS, SMPS, CPC, APS	8.0	17.0	2082.0	EBAS
VOC data (111 number of different gas components)	Adsorption, tube, PTR-MS, online-GC, steel canister	-	23.0	1078.0	EBAS
NH ₃	Online absorption, CRDS, online IC, chemiluminescence, passive sampler	-	60.0	65.0	EBAS
Aerosol chemical composition (NH ₄ , SO ₄ , NO ₃ , organic mass)	Aerosol mass spectrometer (ACSM)	2.0	4.0	53.0	EBAS
NO, NO ₂	CAPS, chemiluminescence	-	1.0	8.0	EBAS
SO ₂	UV- fluorescence	-	1.0	4.0	EBAS
Elemental and organic carbon (EC/OC)	High volume sampler	-	1.0	18.0	EBAS
eBC	-	53.0	53.0	-	ZENODO
Non-refractory PM speciation	ACSM	22.0	22.0	-	ZENODO

Remarks and outlook

- RI-URBANS has delivered a substantial amount of data
- Systems established for data handling and dissemination in close cooperation with ACTRIS, CAMS and EMEP –ensuring harmonised data curation
- Continued work on data curation beyond RI-URBANS
 - the new EU AAQD and measurements at supersites.
Cooperation on harmonization with EEA
 - CAMS and ACTRIS NRT