Communication and interpretation of air quality data

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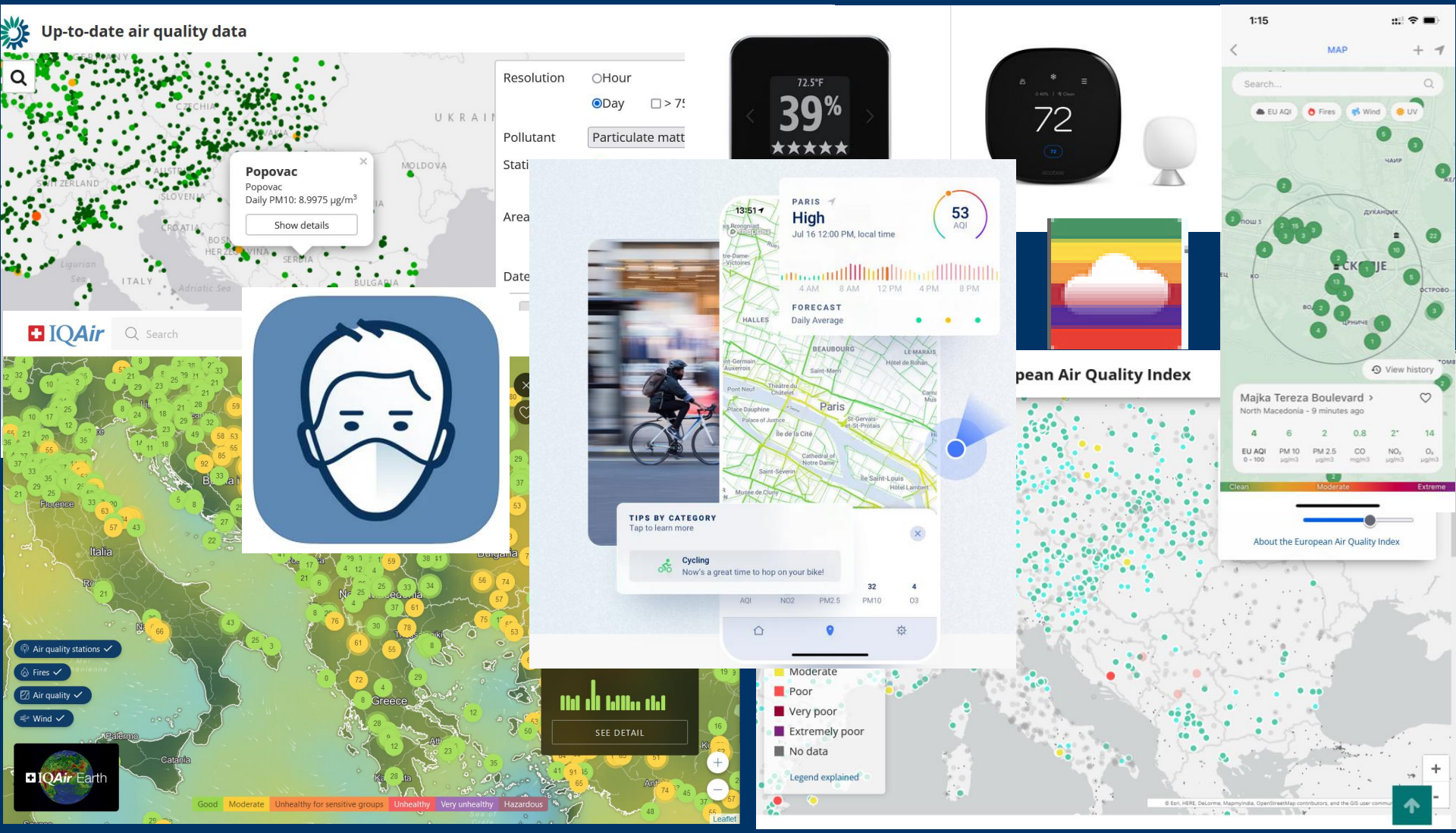
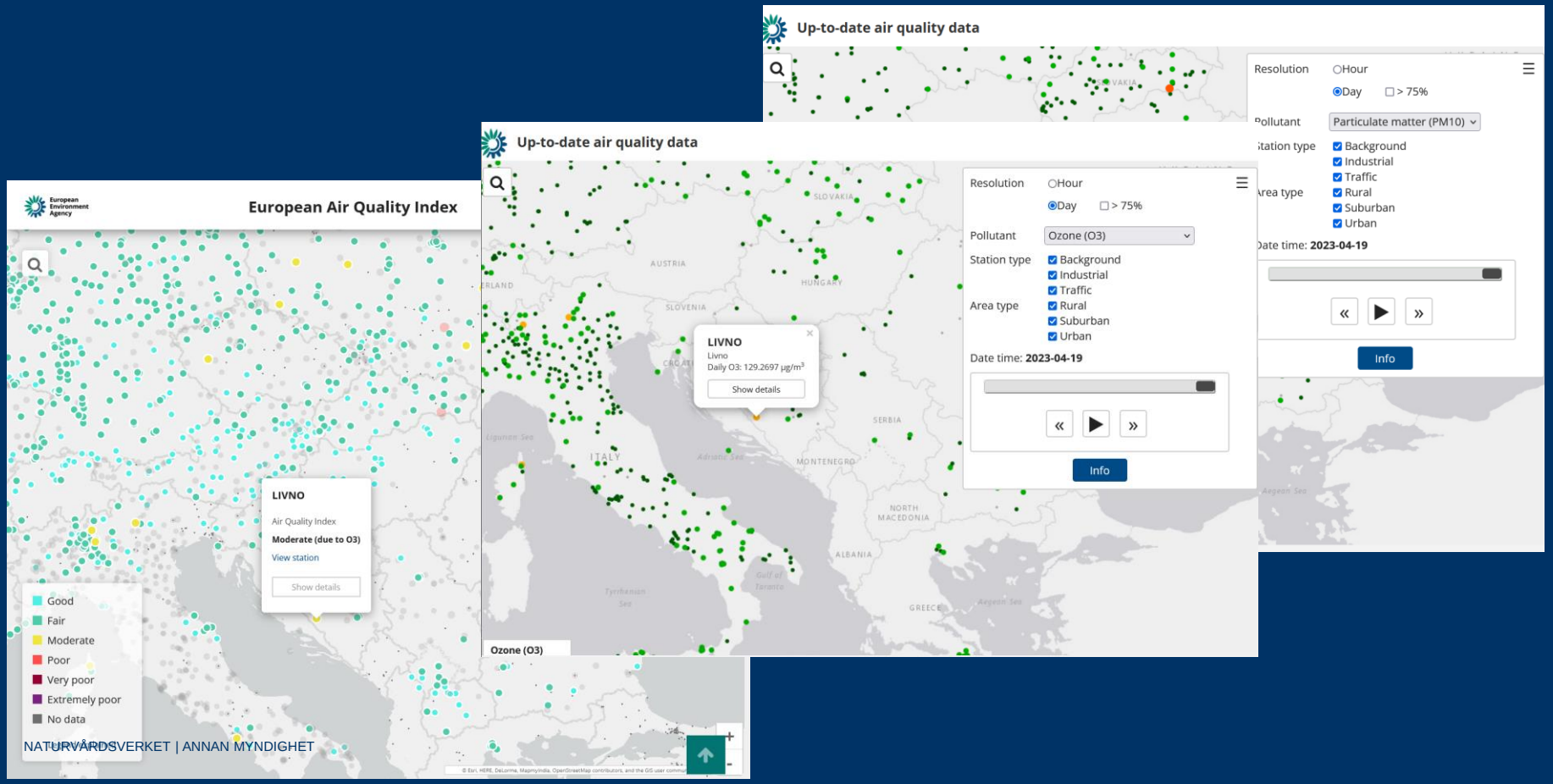
Purpose: Understand the various forms of air quality data and how citizens can engage with air quality information


Up-to-date air quality data
Popovac
Popovac
Daily PM10: 8.9975 µg/m³
Show details
Resolution
Hour
Day
Pollutant
Particulate matt
IQAir
Search
Air quality stations
Fires
Air quality
Wind
IQAir Earth
Good
Moderate
Unhealthy for sensitive groups
Unhealthy
Very unhealthy
Hazardous
Leaflet
72.5°F
39%
72
PARIS
High
Jul 16 12:00 PM, local time
53
AQI
FORECAST
Daily Average
TIPS BY CATEGORY
Tap to learn more
Cycling
Now's a great time to hop on your bike!
SEE DETAIL
pean Air Quality Index
Moderate
Poor
Very poor
Extremely poor
No data
Legend explained
1:15
MAP
Search...
EU AQI
Fires
Wind
UV
View history
Majka Tereza Boulevard
North Macedonia - 9 minutes ago
Clean
Moderate
Extreme
About the European Air Quality Index

Indexed versus measurement data



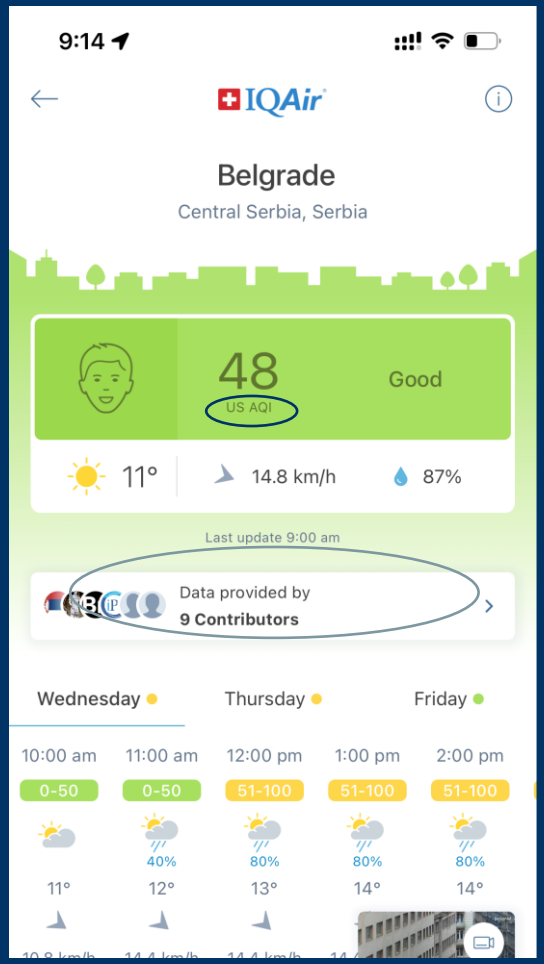
Indexed data

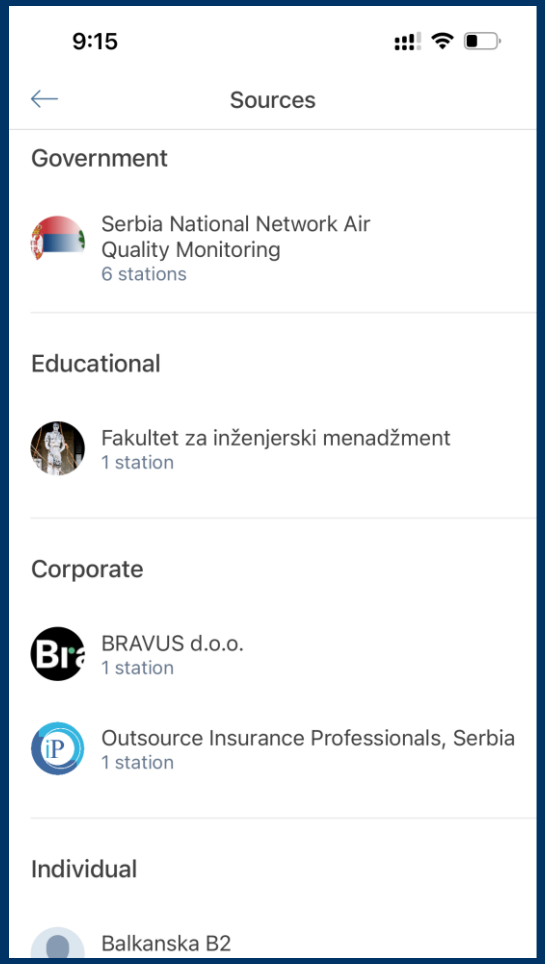
Pollutant	Index level (based on pollutant concentrations in µg/m3)					
	Good	Fair	Moderate	Poor	Very poor	Extremely poor
Particles less than 2.5 µm ($PM_{2.5}$)	0-10	10-20	20-25	25-50	50-75	75-800
Particles less than 10 µm (PM_{10})	0-20	20-40	40-50	50-100	100-150	150-1200
Nitrogen dioxide (NO_2)	0-40	40-90	90-120	120-230	230-340	340-1000
Ozone (O_3)	0-50	50-100	100-130	130-240	240-380	380-800
Sulphur dioxide (SO_2)	0-100	100-200	200-350	350-500	500-750	750-1250

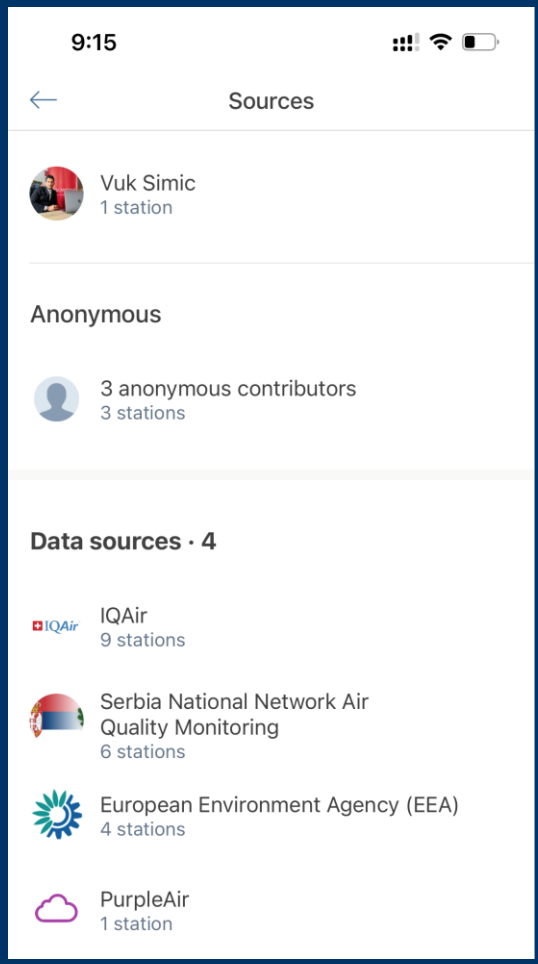
AQ index	General population	Sensitive populations
Good	The air quality is good. Enjoy your usual outdoor activities.	The air quality is good. Enjoy your usual outdoor activities.
Fair	Enjoy your usual outdoor activities	Enjoy your usual outdoor activities
Moderate	Enjoy your usual outdoor activities	Consider reducing intense outdoor activities, if you experience symptoms.
Poor	Consider reducing intense activities outdoors, if you experience symptoms such as sore eyes, a cough or sore throat	Consider reducing physical activities, particularly outdoors, especially if you experience symptoms.
Very poor	Consider reducing intense activities outdoors, if you experience symptoms such as sore eyes, a cough or sore throat	Reduce physical activities, particularly outdoors, especially if you experience symptoms.
Extremely poor	Reduce physical activities outdoors.	Avoid physical activities outdoors.

From <https://airindex.eea.europa.eu/Map/AQI/Viewer/#>

Air quality applications







Measurement data

Actual measurements of pollutants

- ground-level ozone
- particle pollution (also known as particulate matter, including PM2.5 and PM10)
- carbon monoxide
- sulfur dioxide
- nitrogen dioxide

Usually µg/m3, but also ppm, ppb

Point source

Reference grade

- Expensive
- Operated by governments, agencies or industries (or private companies that collect measurement data on behalf of these institutions).
- Undergo calibration and regular maintainance
- Ambient air quality

Sensor

- Small
- Inexpensive
- Direct detection of pollutants
- Usually focused on PM
- Easy to operate
- Ambient or indoor air quality

Conclusions

It is important to know what you are breathing!

1. Know where your data is coming from
2. Understand how it is being presented

New and interesting possibilities are emerging all the time in terms of low-cost sensors and citizen engagement within the field of air quality.

Questions?

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