Atmospheric air monitoring in Tomsk city: current status and proposals

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Outline

- 1. Investigation direction
- 2. Status of air monitoring in Tomsk city
- 3. Instruments for monitoring
- 4. Monitoring in different cities
- 5. The device for air monitoring

Investigation direction

- Purpose – dense and spatially wide monitoring network
- Cause – lack of a dense network with separation of sources
- Contribution – presentation of a basic devise structure

Status of air monitoring in Tomsk city

Monitoring posts:

- «Urban background» – post № 14;
- «Industrial» – posts №№ 5, 11*, 12, 13;
- «Auto» – posts №№ 2, 15

Monitor post owner:

State environmental observation service

*Source: State report “About the environmental state and protection in the Tomsk region in 2019”

Figure 1 – Monitoring posts in Tomsk city

Instruments for monitoring

a) CEL 712 Microdust Pro

b) "Атмас"

c) SO_2 sensor

d) NO_x sensor

Figure 2 – Different devices for monitoring

Instruments for monitoring

e) PMS5003
Dust sensor

f) Air quality monitors
Dust, VOC, CO_2, temperature, humidity

Figure 2 – Different devices for monitoring

Instruments for monitoring

Developed in the city of Novosibirsk

Figure 3 - CityAir monitoring micro station

Monitoring in different cities

AQMS – Air quality monitoring station

AURN – Automatic urban and rural network

SCC – Sheffeld city council (GH 1, 2, 3, 4, 5; RM 1)

Figure 4 - Locations of monitoring posts in Sheffield

Monitoring in different cities

AQ – Air quality

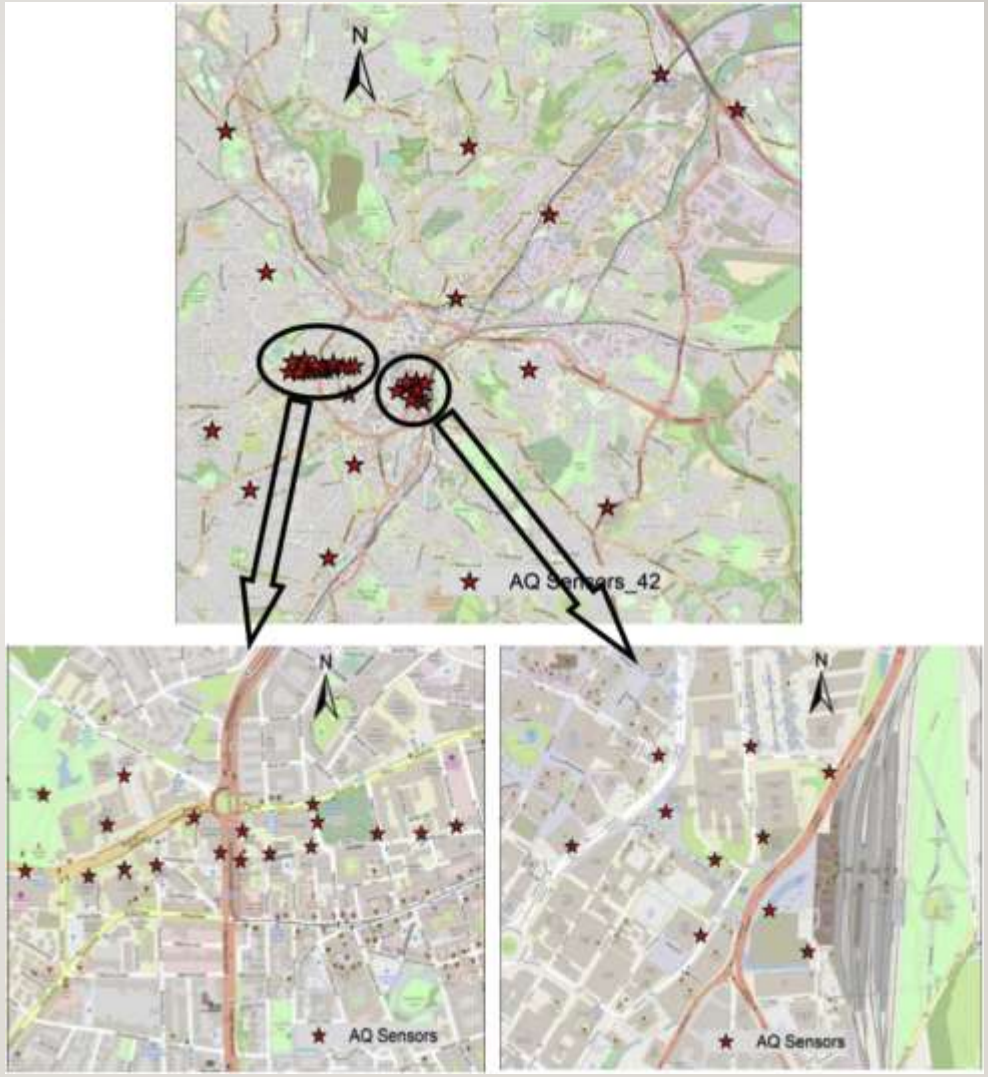

Figure 5 - Location of low-cost sensors

Monitoring in different cities

AQ – Air quality

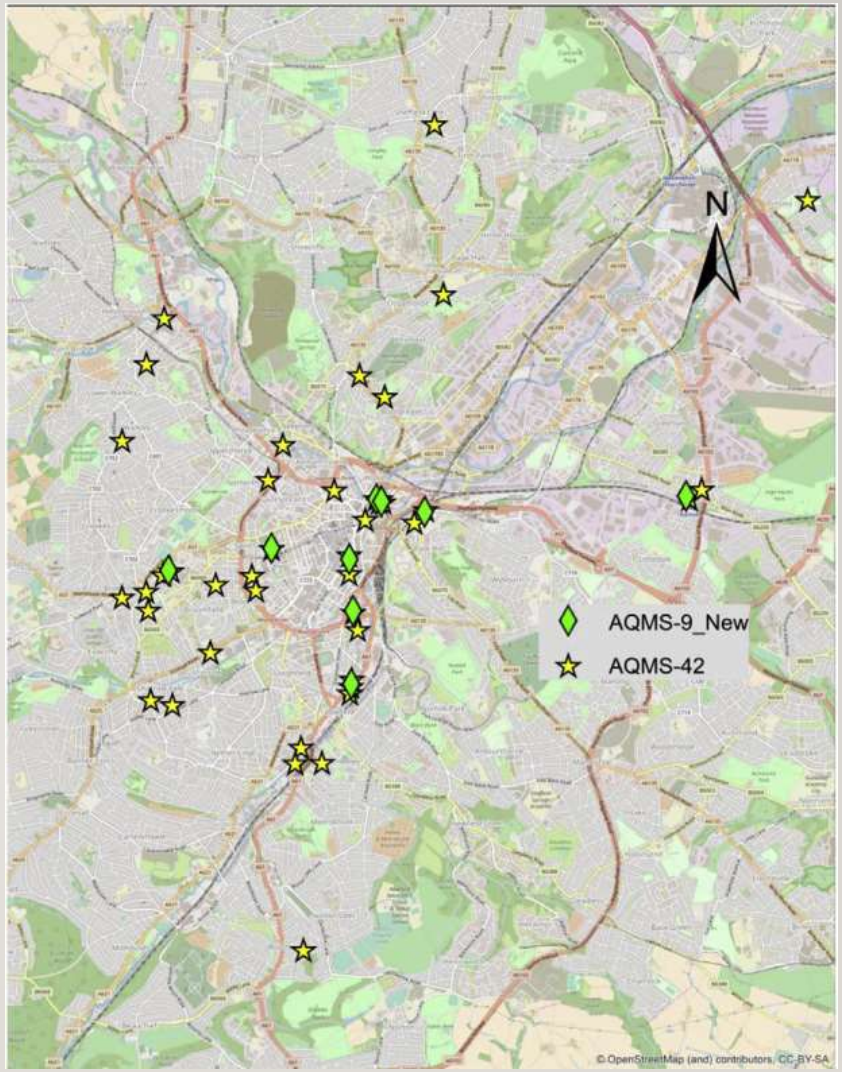

Figure 6 - Location of reference and low-cost sensors

Monitoring in different cities

Source: www.IQAir.com open access resource

Figure 7 – Location of AQ sensors in Russia and nearby countries

Monitoring in different cities

Area – 2.511 sq.km.

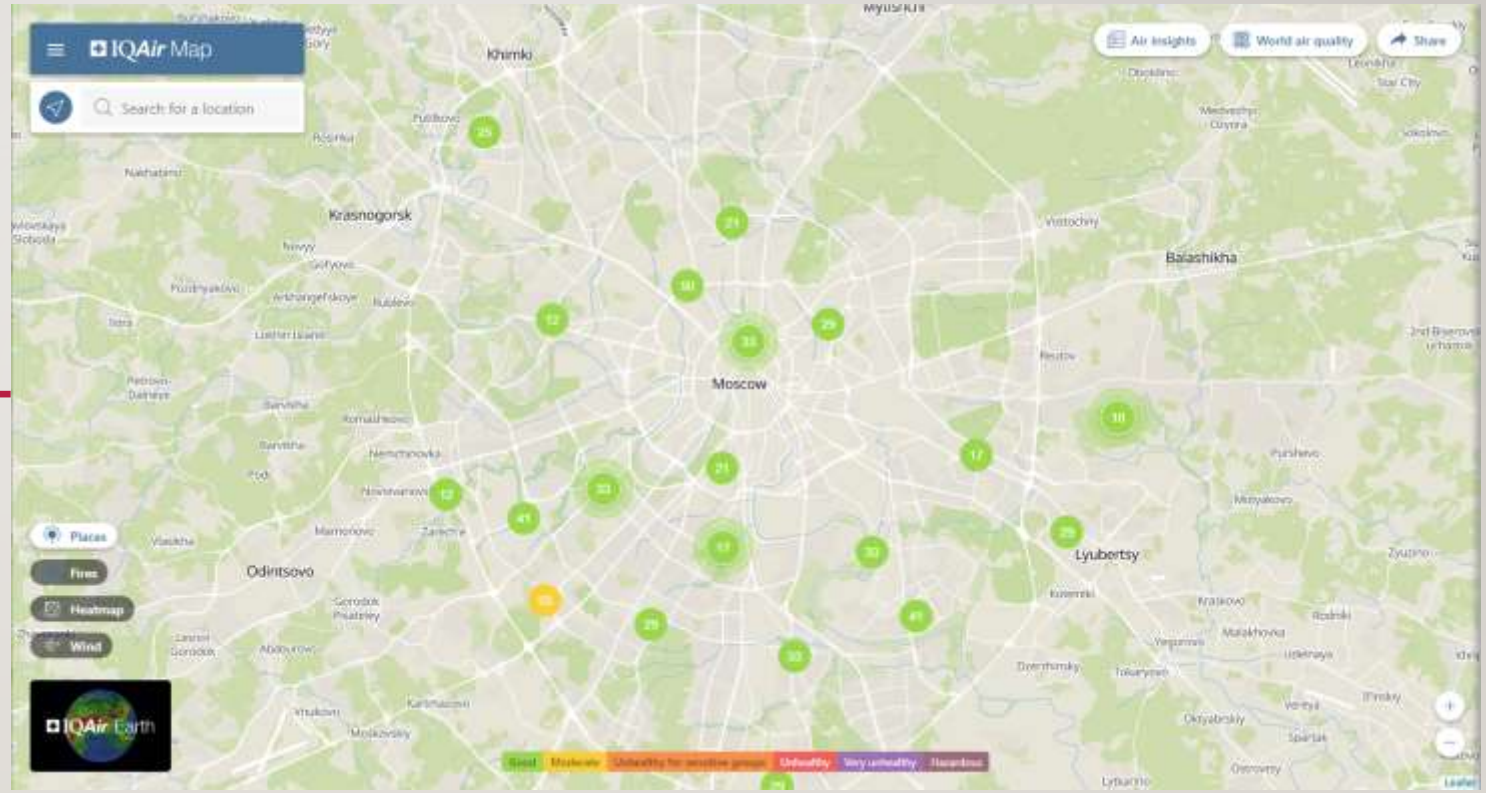

Figure 8 – Location of AQ sensors in Moscow

The device for air monitoring

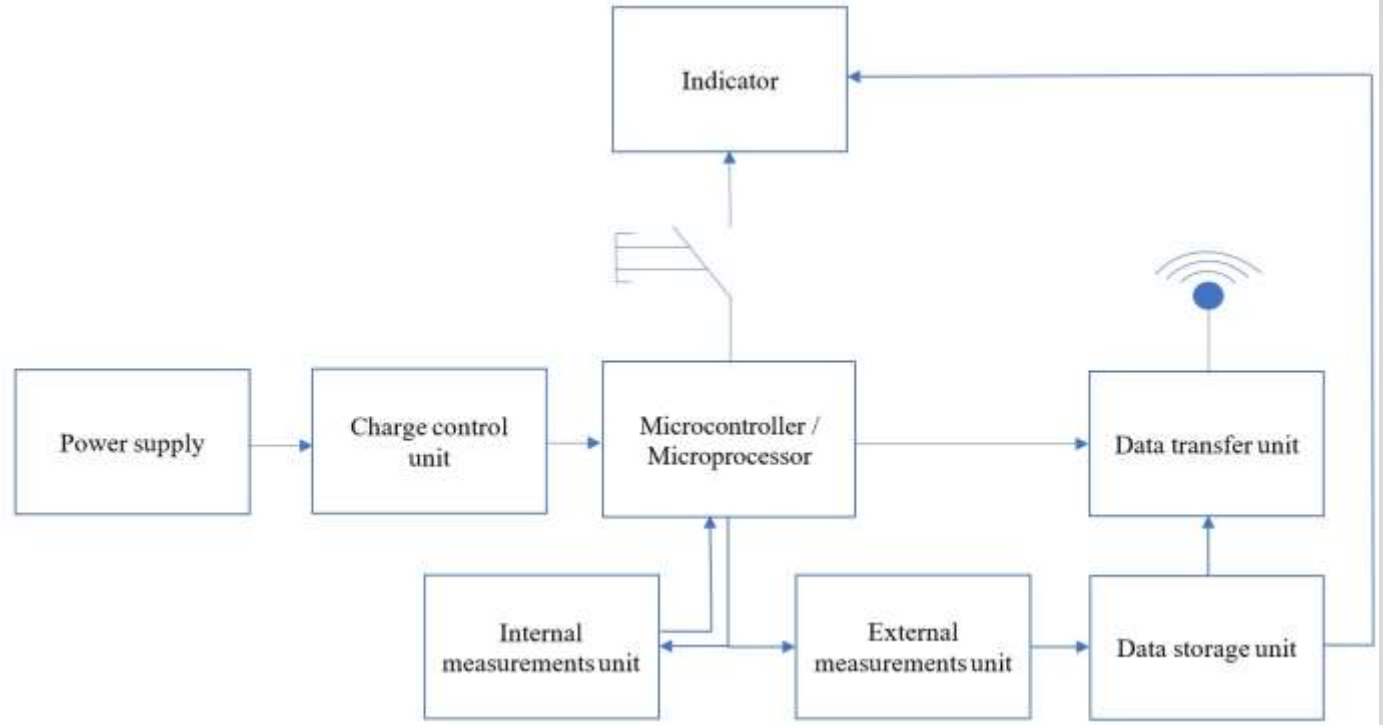

Figure 9 – Structural diagram of the device for air monitoring

The device for air monitoring

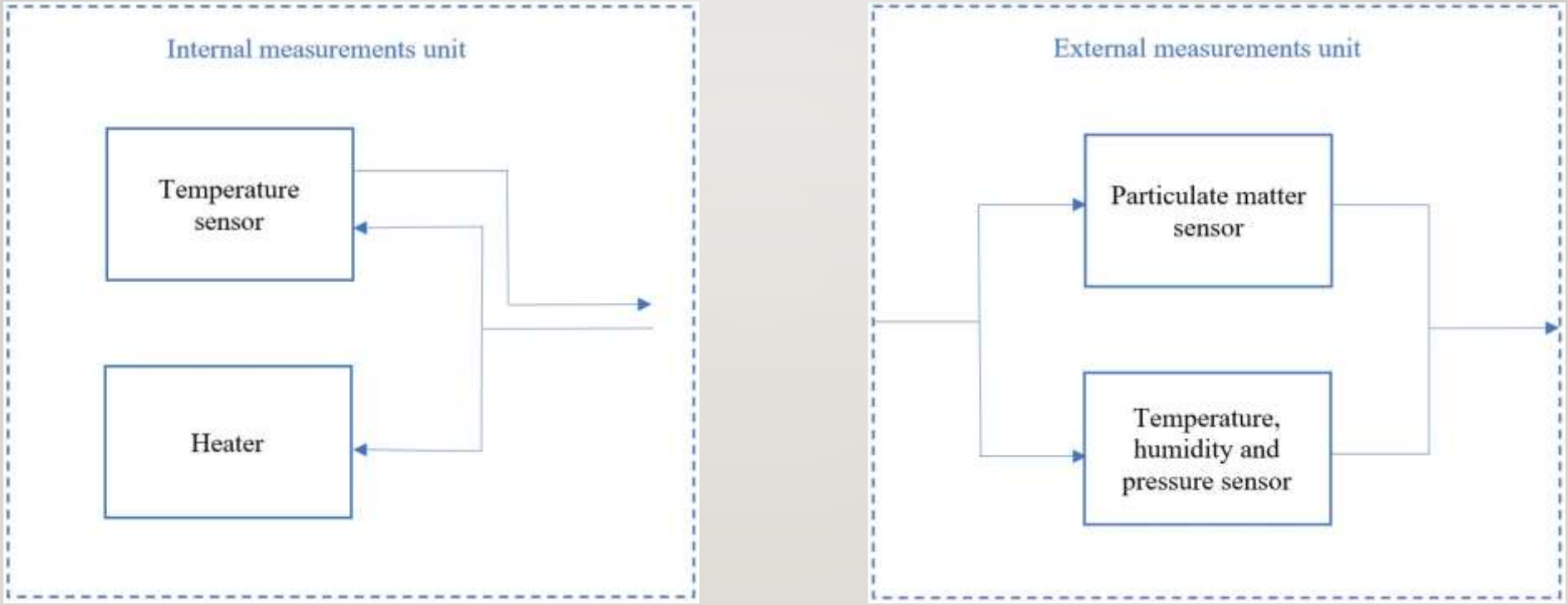

Figure 10 – Measurement blocks

The device for air monitoring

Figure 11 – Appearance of the device

Thank you for attention!

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