AQSens data platform - an overview

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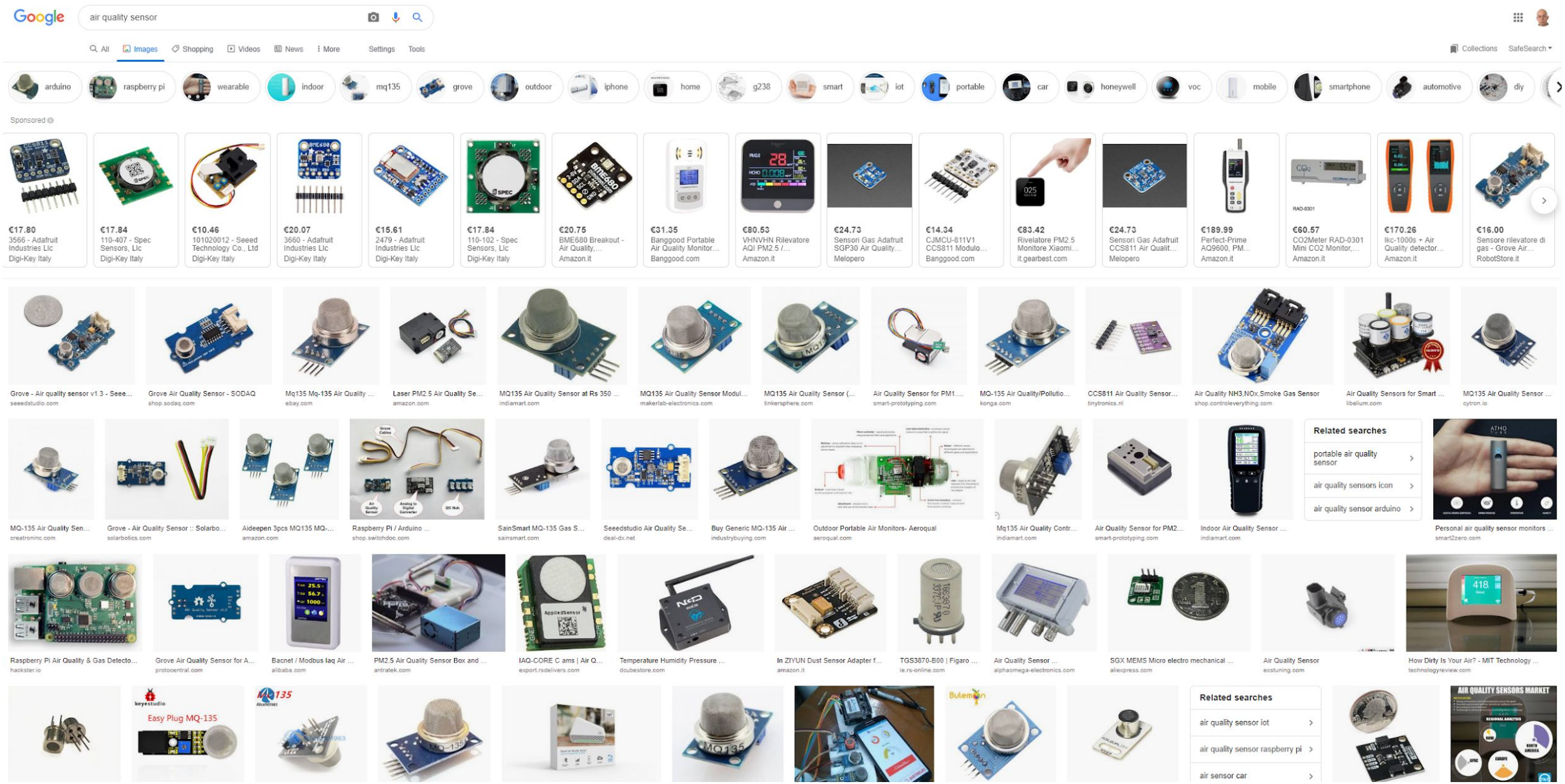
You can buy anything ‘able’ to measure air pollution!



Performance is variable

Example of uncertainty estimation at Limit Values

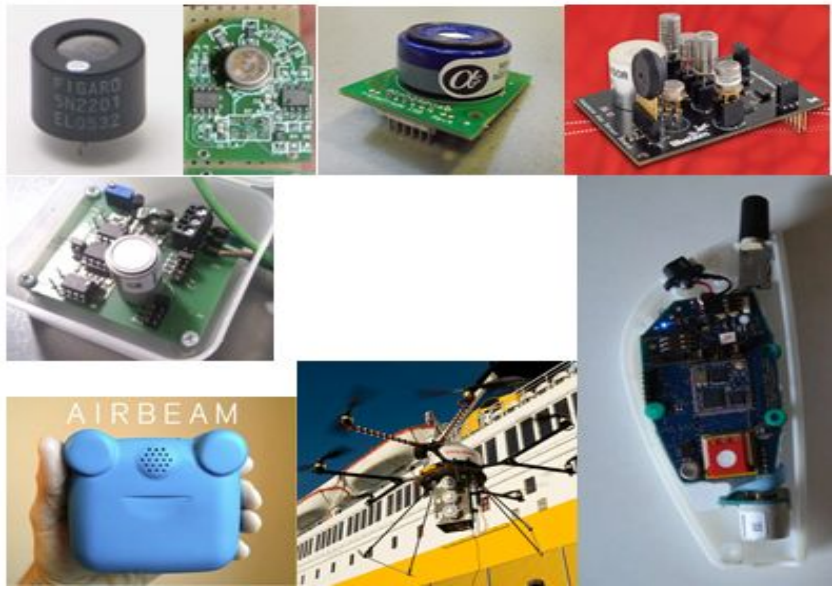
	CairClip NO2	NO2-B4	NO2-3E50	Cairclip Ox	O3-B4	O3-3E1F
Cal. (LoD)	1.7	1.8	2.4	2.6	1.5	2.2
Hysteresys	-	-	-	-	-	-
r, Short term	1.7	2.9	0.8	3.3	0.4	0.6
Long term	4.0	45	7.9	1.7	3.0	5.8
Interference	1.4	39.1	37.1	5.9	5.6	5.0
Air matrix	3.0	14.2	5.0	1.1	1.0	
Temperature	1.7	8.3	2.2	1.9	1.5	7.4
Humidity	2.2	5.1	2.1	1.4	16.3	1.7
Combined uncertainty	12.7%	124.0%	77.0%	15.8%	35.3%	22.0%
U	+/- 25%			+/- 32%		

The AQSens project

Partners: DG ENV, JRC

High level objectives:

- Supporting the development of AQ Sensor Networks in Europe
- Integrating smart sensors and modelling for air quality monitoring in cities



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Tasks

1. **Compare the capability and performance** of lower-cost sensor systems to measure air pollution with conventional monitoring and modelling;
2. **Develop a traceable calibration technique** for lower-cost sensor systems;
3. Elaborate on a potential **way to integrate** lower-cost sensor systems in existing **monitoring** networks and **modelling** systems;
4. Develop a **platform for integration and visualization** of data from sensors;
5. Establish **guidance** on the use of lower-cost sensor systems and their interrelationship with already existing conventional monitoring and modelling systems.

AQSens platform

- **Objective:** establish, maintain and document a re-usable data platform
  - Assignment with 52N
  - Planned mass deployment of lower cost sensor systems in two/three European cities (cities tbc)
  - Fusion with other data sources

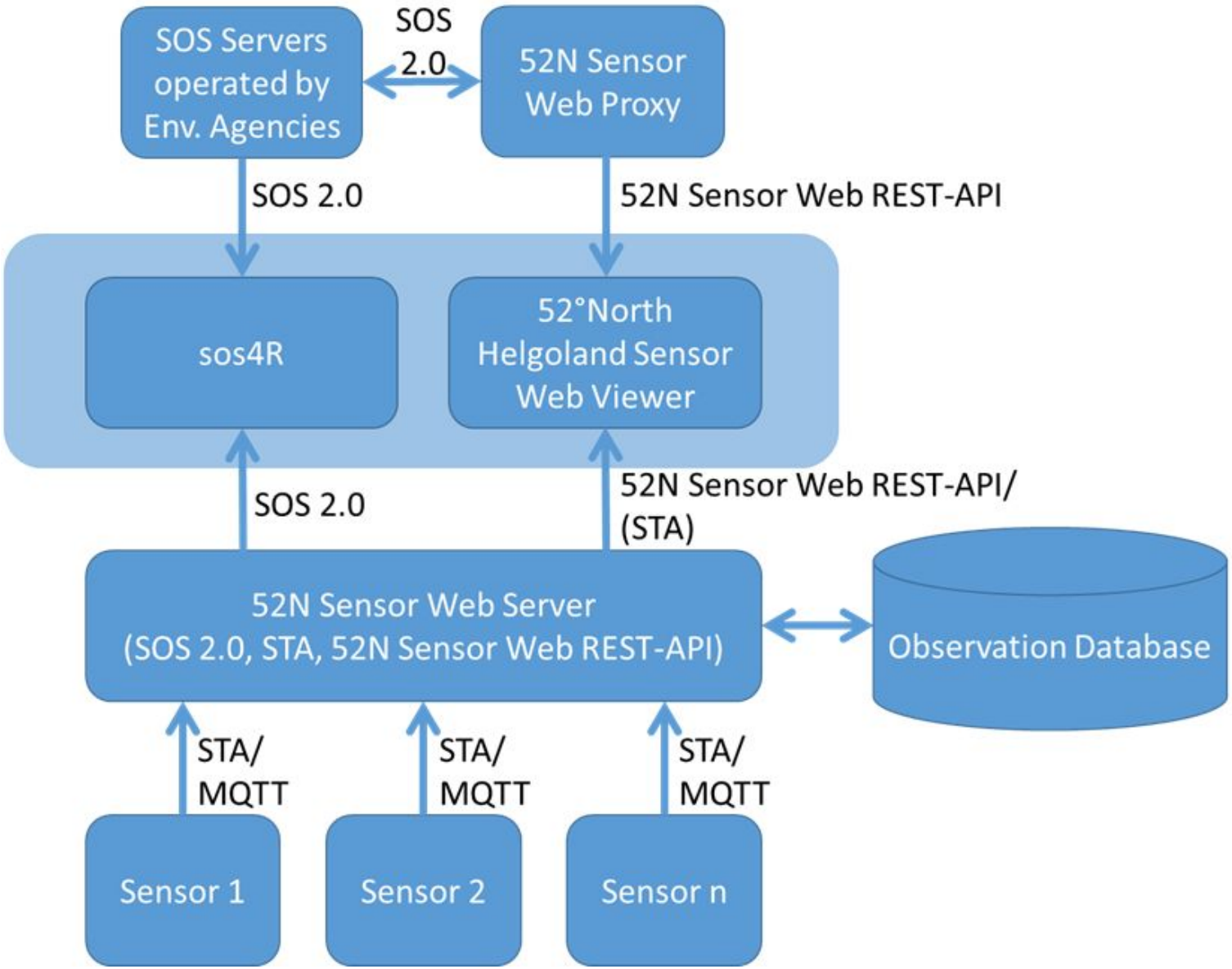
Planned activities

- **Task 1. Conceptual design:**
  - Standards to be considered - SOS, STA
  - Functionalities: receiving, maintaining, processing, visualising and distributing observation data.
- **Task 2. Deployment**
  - Handles data from 85 sensor systems with high temporal variability
  - Scalable cloud-based solution
  - Fully open source
- **Task 3. Training**
  - For data providers on deployment and maintenance
  - For users
- **Task 4. Support**
  - Dedicated helpdesk
- **Task 5. Maintenance and sustainability**

Schedule

- **Total duration: 24 months, start in August/September 2019**
- **Task 1. Conceptual design:**
  - End of October 2019
- **Task 2. Deployment**
  - End of March 2020
- **Task 3. Training**
  - April 2020
- **Task 4. Support**
  - End of July 2021
- **Task 5. Maintenance and sustainability**
  - End of July 2021

Approach



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Thank you for your attention!

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