

GEO WEEK & MINISTERIAL SUMMIT 2023

Flash Talk

#TheEarthTalks



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



GEO WEEK
2023 MINISTERIAL
SUMMIT

GEO GROUP ON
EARTH OBSERVATIONS



**GEO
WEEK
2023
MINISTERIAL
SUMMIT**

Adding Citizen Science data for addressing the triple planetary crisis to GEOSS

In-situ data integration made possible with the new OGC Standard STApplus

6-11-2023 11:00 Room Freesia

#TheEarthTalks

GEO WEEK & Ministerial Summit 2023



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CitiObs

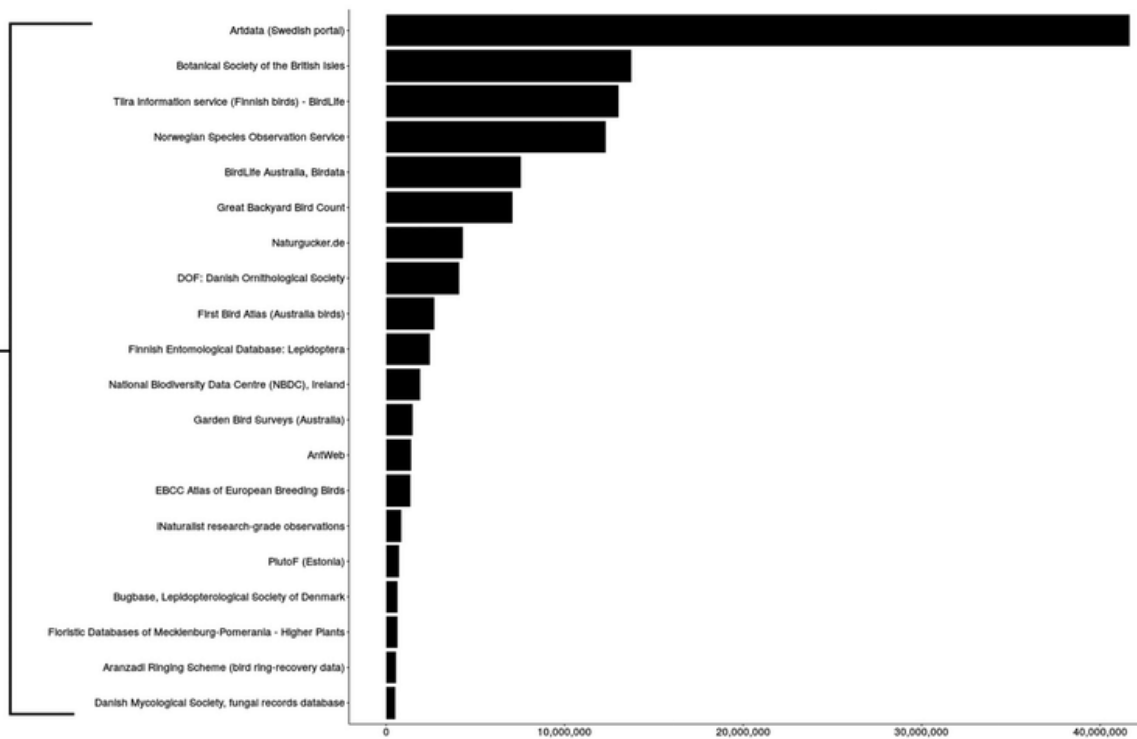


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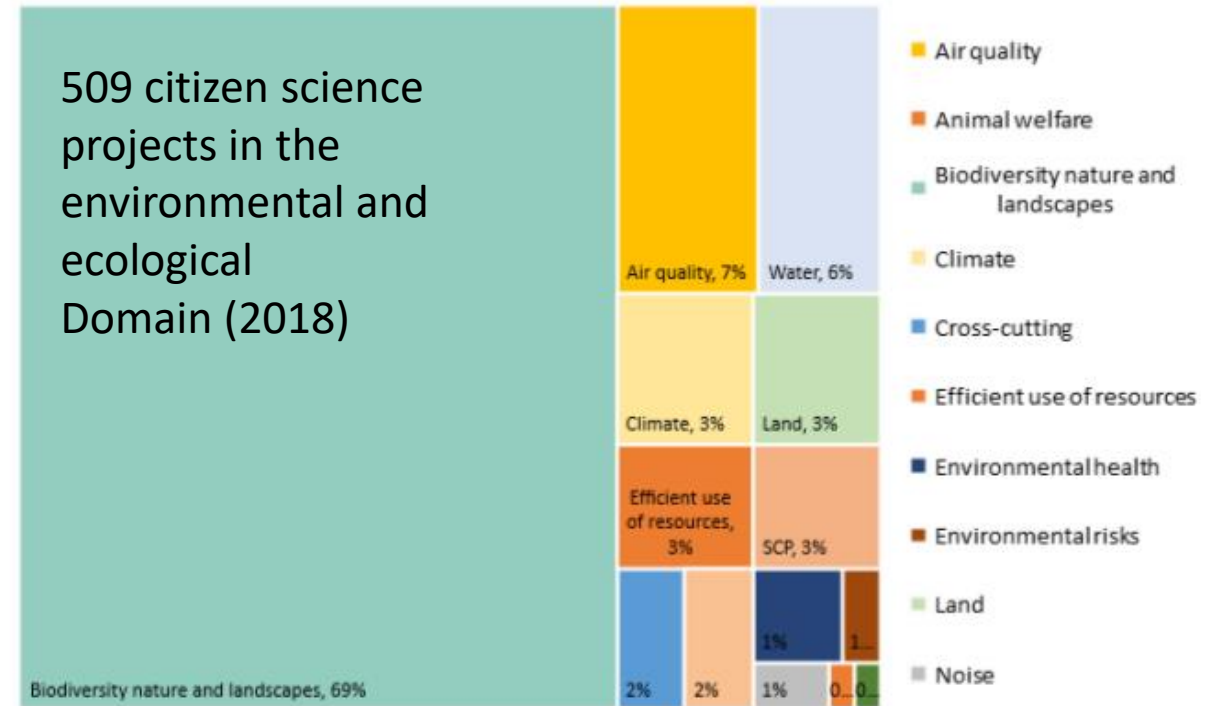
Number of observations



Number of observations

https://www.researchgate.net/figure/List-of-top-citizen-science-data-providers-to-GBIF-Single-data-providers-such-as_fig3_309633297

Primary environmental field



ISBN:978-92-79-98104-3- doi:10.2779/961304

Barriers and Needs

Data collection is limited in geographical coverage

Citizen Science Projects are known but data access is often limited

For tackling global problems

there is a need to aggregate Citizen Science data

into collections of comprehensive datasets



GBIF network aim to provide **standardized** and **open access** to biodiversity data from around the globe.

In terms of citizen science, the primary data type is **occurrence records**, which are standardized in the **Darwin Core standard**, and shared through instances of the GBIF Internet Publishing Toolkit

Licenses have been standardized to a subset of open **Creative Commons licenses**, making the data shared far more usable for the community..

Data can be queried and the extraction receives a **DOI that can be cited**

CitiObs and AirQuality

Using calibrated **low cost sensors**
Interoperability through Sensor Things API
Common data **quality validation** tools
Eliminating barriers through standardized
data services in a research infrastructure
Knowledge augmentation and visualization

Social dimensions

Inclusive stakeholder
engagement

Participation dynamics &
relational models

NEB & co-creation of local
actions for sustainability

Technical dimensions

Use of low cost sensors
and wearables

Data access and
interoperability tools

Data quality and
validation tools

Data services in EU
research infrastructure

Data knowledge
augmentation and
visualization tools

Based on observations

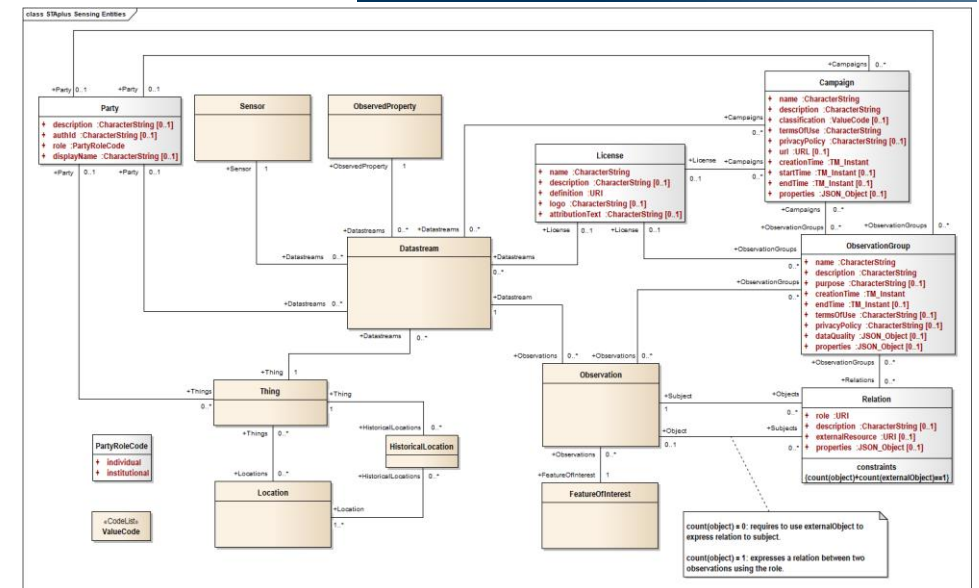
What: describes the variables and the units of measures linking to standardized concepts

Where: provides the position of the sensor and the observation

When: time of the observation and the processing and storage

How: defines licenses and campaigns

Who: acknowledge the citizens participating

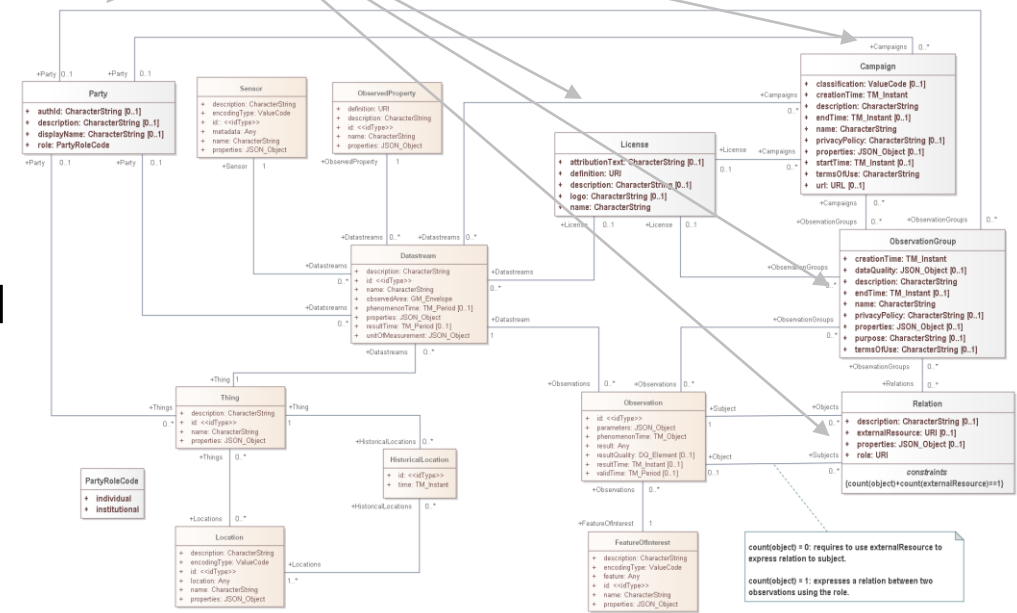


Sensor Things API plus. A standard for Citizen Science

STApplus: <https://docs.ogc.org/is/22-022r1/22-022r1.html>

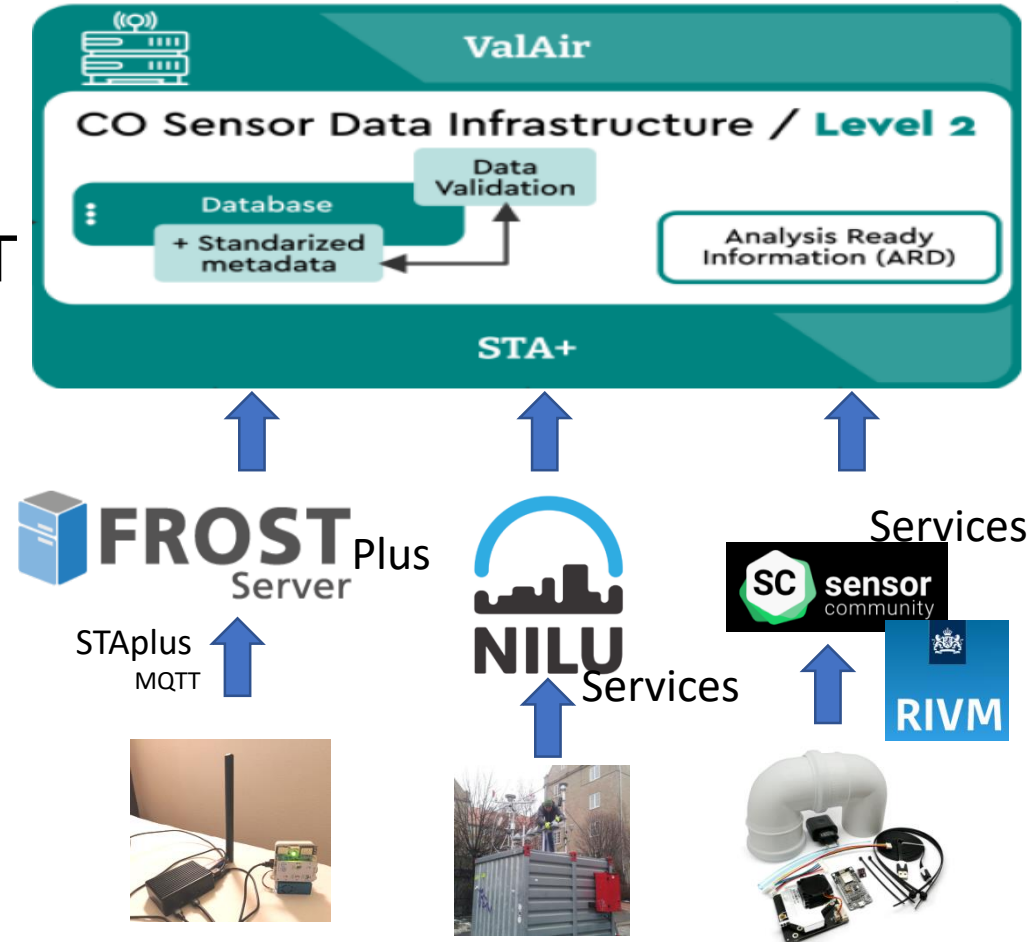


- What:** describes the variables and the units of measures linking to standardized concepts
- Where:** provides the position of the sensor and the observation
- When:** time of the observation and the processing and storage
- How (to reuse):** defines licenses and campaigns
- Who:** acknowledge the citizens participating



Integration of Air Quality data

- Smart sensors sending data via STApplus MQTT
- Standard deployment of repositories using STApplus enabled services
- Standard adaptation to STApplus
- Automatic integration of data
- Integrated modules for quality flagging and statistical aggregation



WP23_25: GEO Citizen Science

Objective: Demonstrate the value of citizen science data, facilitate the creation of a linked ecosystem of open citizen science data and increase the use of citizen science in GEO by supporting global coordination and collaboration.

Tasks:

Showcasing the use and value of Citizen Science

Improving discovery of and access to Citizen Science data

Advancing and implementing relevant standards

Outreach, networking and recommendations

Citizen Science should be integrated in the data working group and recognized as a contributor of in-situ data.

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6-10 NOVEMBER

CAPE TOWN, SOUTH AFRICA



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