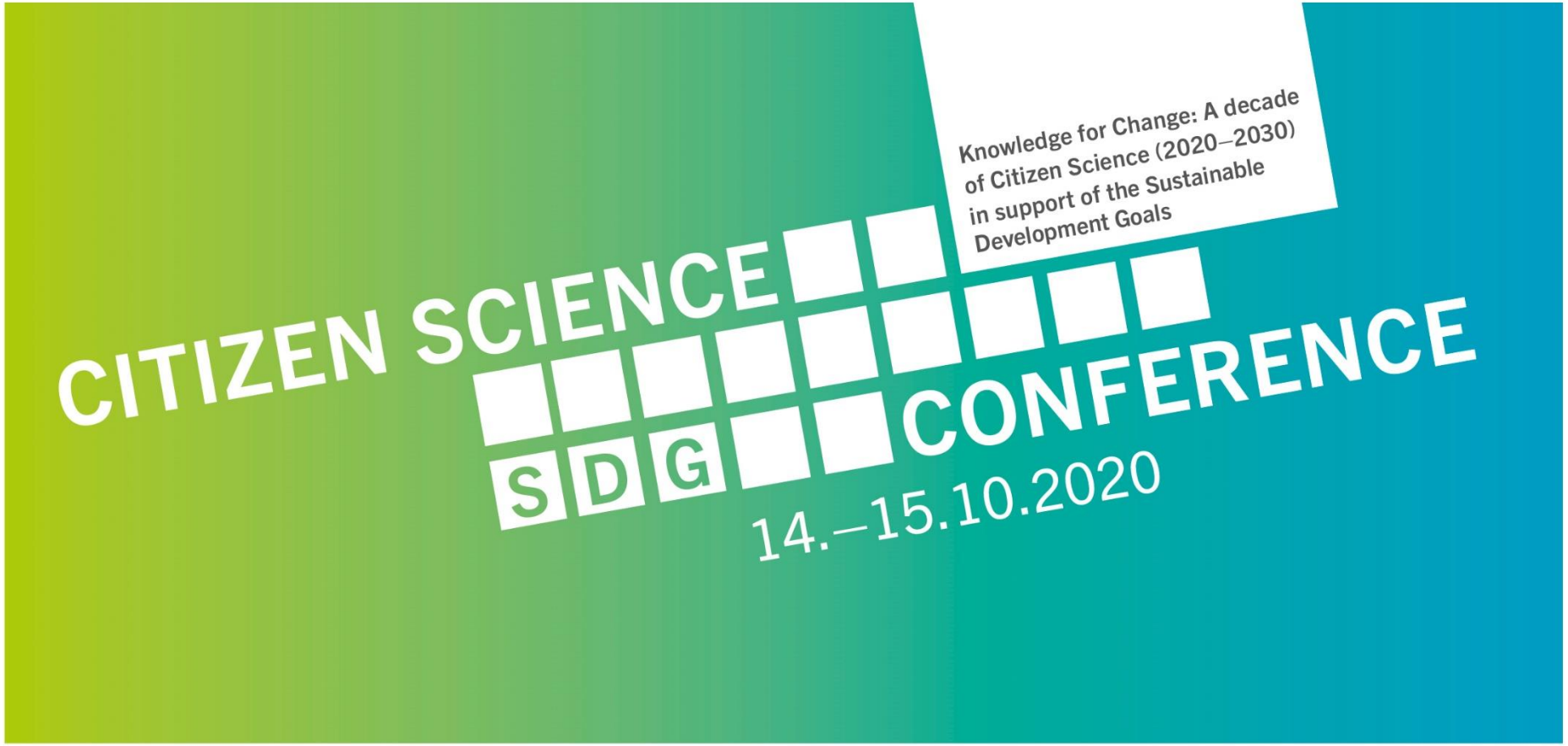

MUSEUM FÜR NATURKUNDE BERLIN

INSPIRE Hackathon – Results from the citizen science challenges

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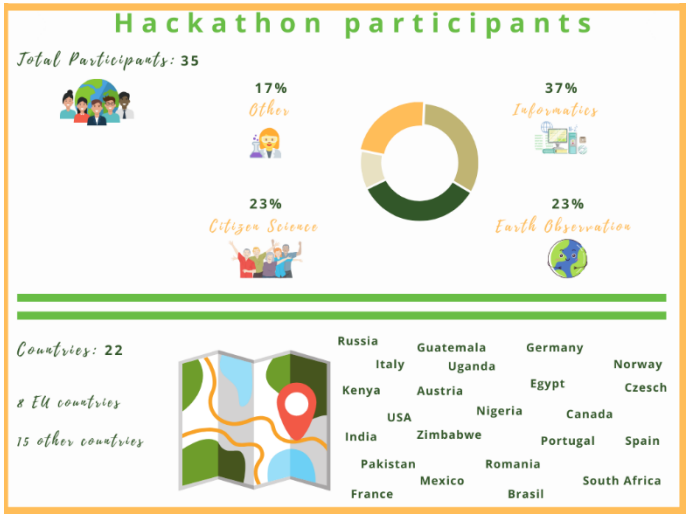
INSPIRE Hackathon – Citizen Science Challenges

- March – May 2020
- Dubrovnik INSPIRE Hackathon
- 3 Citizen Science challenges
- Improve interoperability, accessibility and discoverability of COs and CS data
- 35 participants | 22 different countries



Promote collaboration and sharing of experience in the domain of spatial data/services and citizen-science while showcasing their utilisation and uptake to different application domains and themes.

INSPIRE CONFERENCE 2020 DUBROVNIK - CROATIA

INSPIRE Hackathon – Citizen Science Challenges

"Cataloging citizens' observatories data and results"

Key topics:

- Management of citizen-generated data
- Data cataloguing and practical information for data providers
- Benefits of using CKAN and OpenSearch API

WHAT IS IT ABOUT?

WHY DOING IT NOW?

WHO IS THE WEBINAR FOR?

"Improve interoperability between methods for sharing in-situ and citizen-sourced data"

Key topics:

- Approaches for modelling citizen-science data through the OGC SensorThings API
- Representation and visualisation of resources in the context of existing applications
- SensLog solution for sensor data, integration of data from different sources

WHAT IS IT ABOUT?

WHY DOING IT NOW?

WHO IS THE WEBINAR FOR?

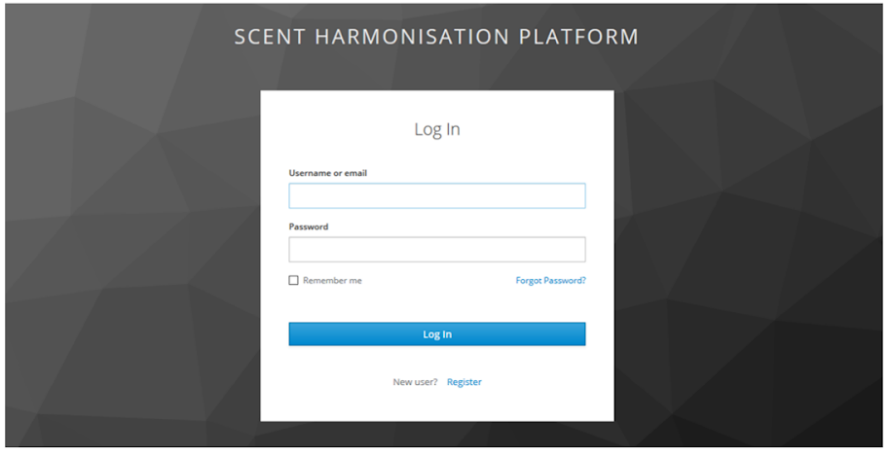
- Organisation of webinars
- Collaborative space for topic development
- Communication channels to support interactions between mentors and participants
- Online meetings & hands on sessions

Citizen Science and EO authentication systems

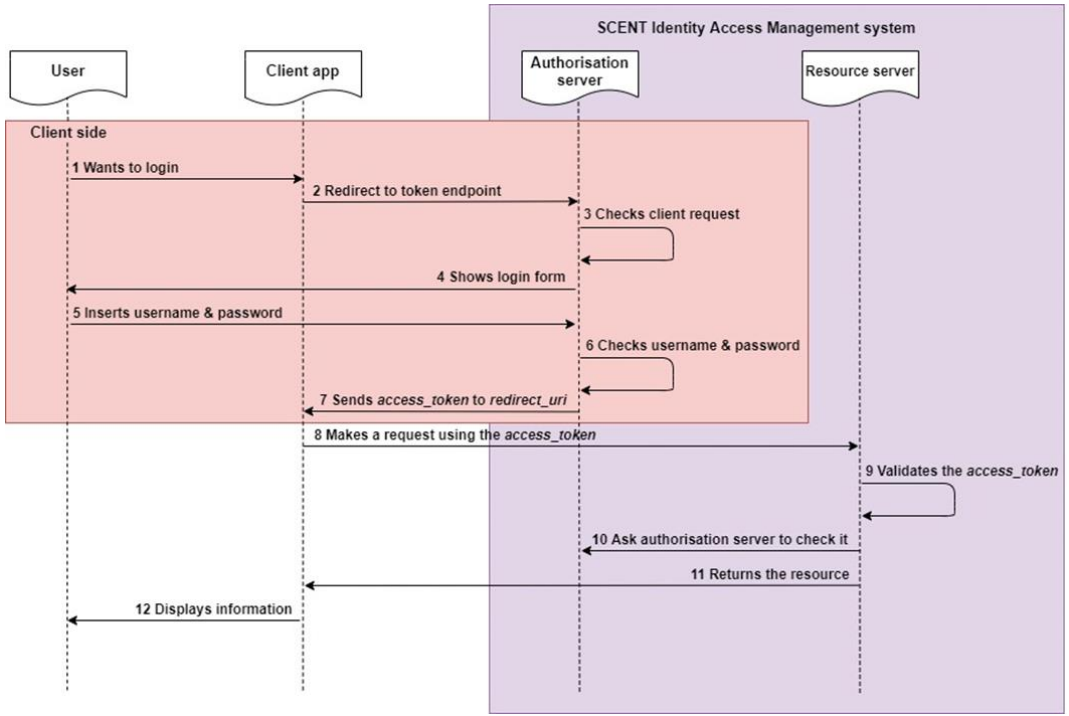
- Enhance geospatial and/or INSPIRE enabled web-based or mobile application so as to connect to either Citizen Science and/or Earth Observation data;
- Improve accessibility to protected resources while also enabling their direct consumption and utilisation by third party applications.

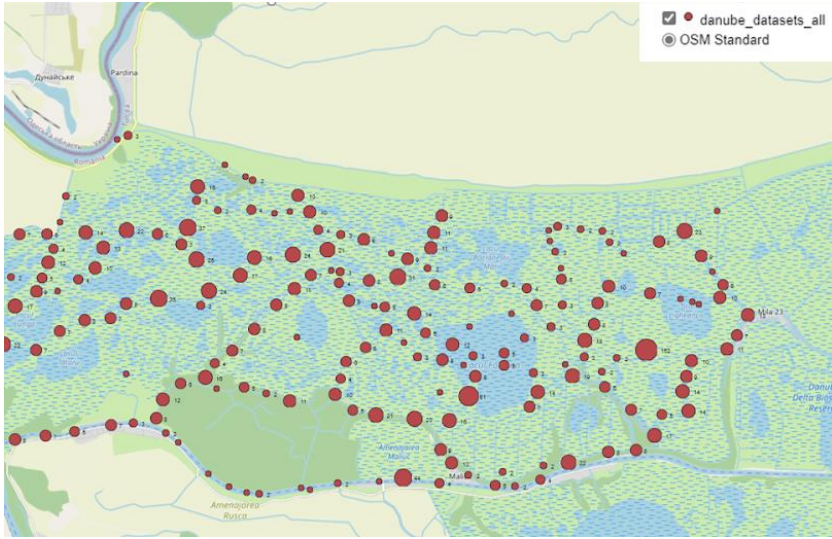
Citizen Science and EO authentication systems

- Existing infrastructure from Citizen Observatories (SCENT, LandSense) and EO projects (NextGEOSS)
- Front-end JavaScript applications were able to connect with the SCENT Harmonisation platform Identity Access Management system by applying Implicit Grant Type of authorisation.



Citizen Science and EO authentication systems



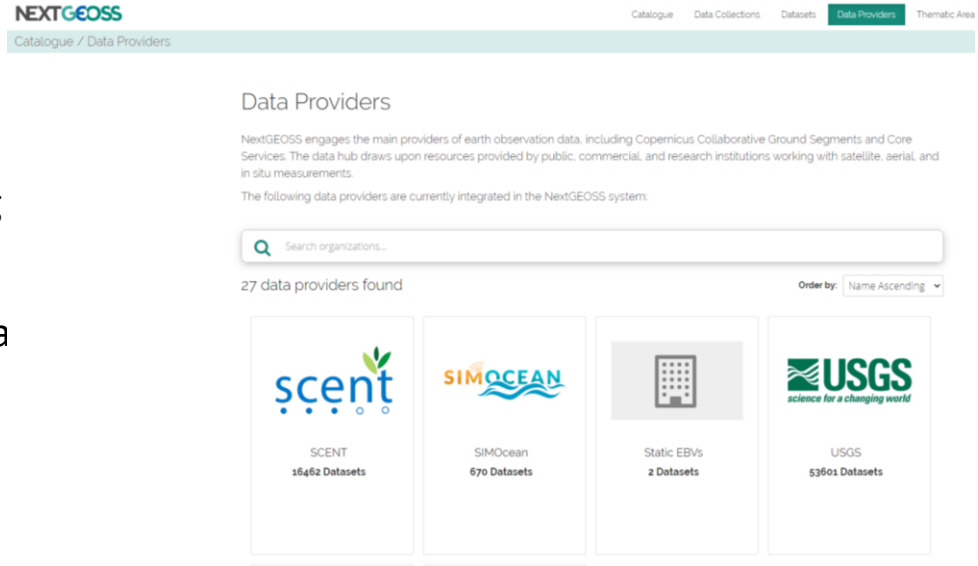


Connection of Citizen Observatories with central catalogue

- Enable the integration of the H2020 Citizen Observatories (i.e. LandSense, GroundTruth2.0, GROW, SCENT) datasets with the NextGEOSS catalogue as an approach to connect citizen science into GEOSS.

Connection of Citizen Observatories with central catalogue

- Analysis of existing infrastructure and endpoints that enable machine-to-machine access to resources.
- Documenting data and resources involving community-based environmental monitoring citizen science projects.
- Implementation, testing and deployment of a data harvester for a part of SCENT citizen-science data, aiming to constitute a prototype for the ingestion of citizen-science resources (metadata) into a centralised catalogue.



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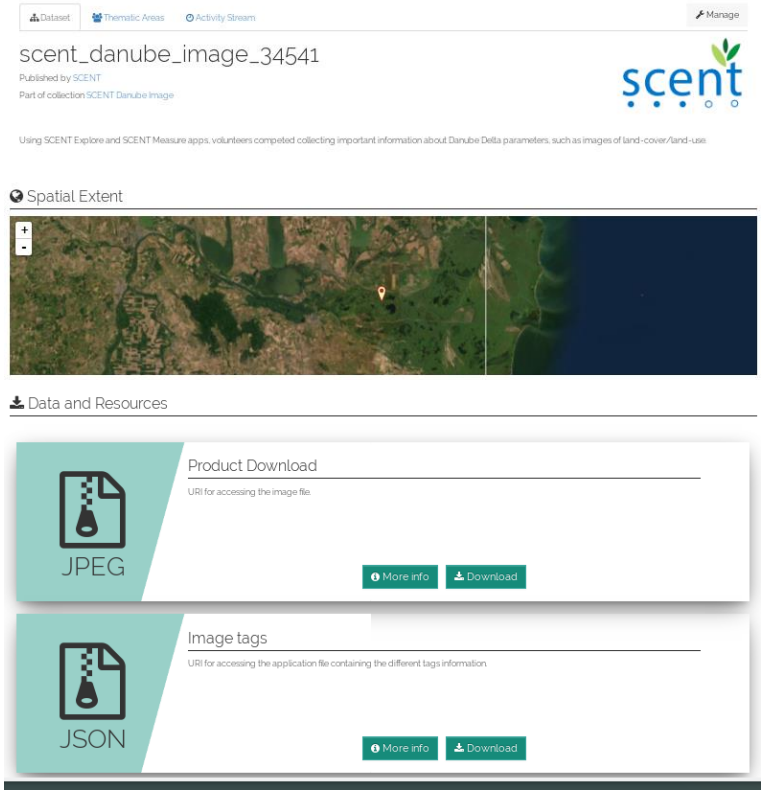
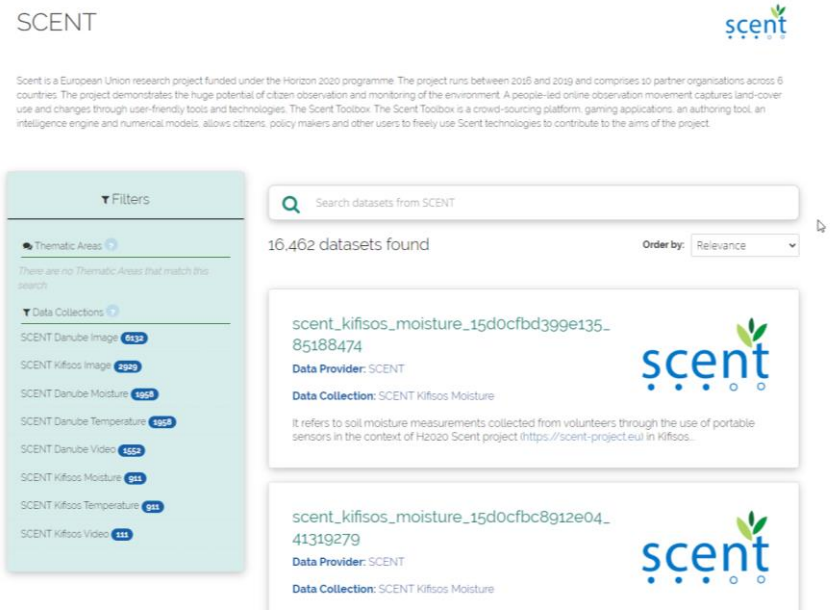
Connection of Citizen Observatories with central catalogue





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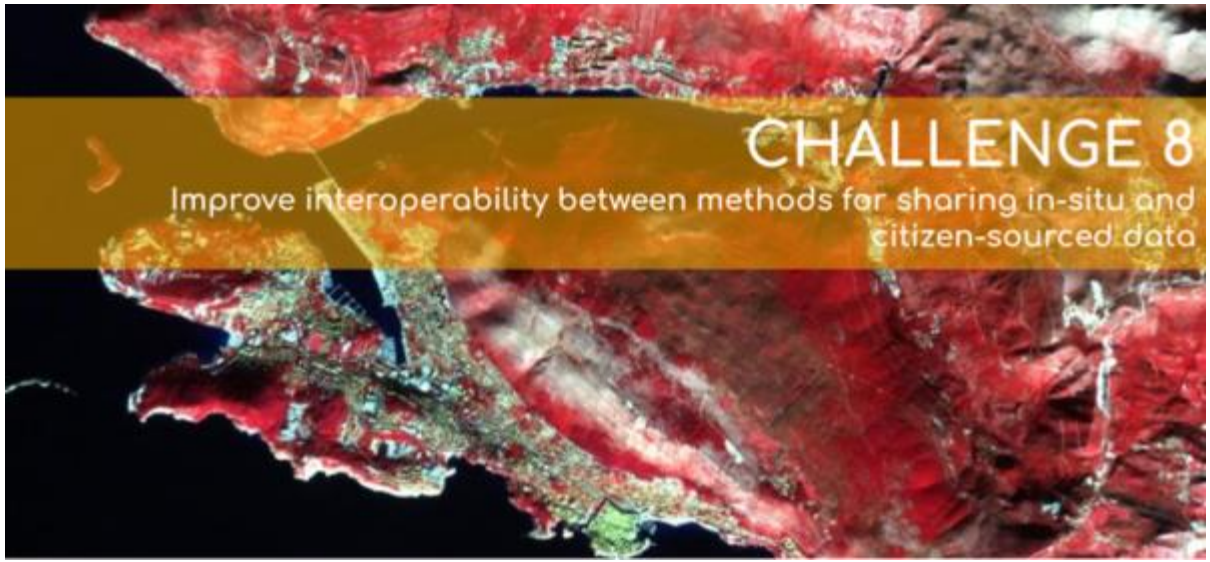
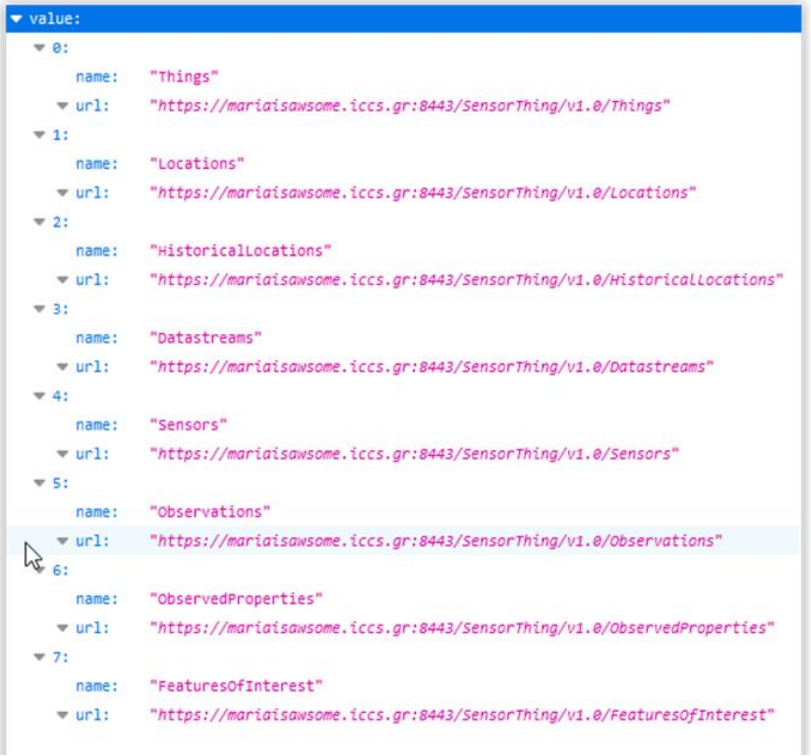
Interoperability for sharing in-situ and citizen-sourced data

- Improve interoperability and standardised access to citizen-science resources
- Design & implementation of “data translators” that will facilitate the conversion of resources exposed from various data models to OGC SensorThings API compatible schemas
- Integration of different environmental data by utilization of special “data translators”



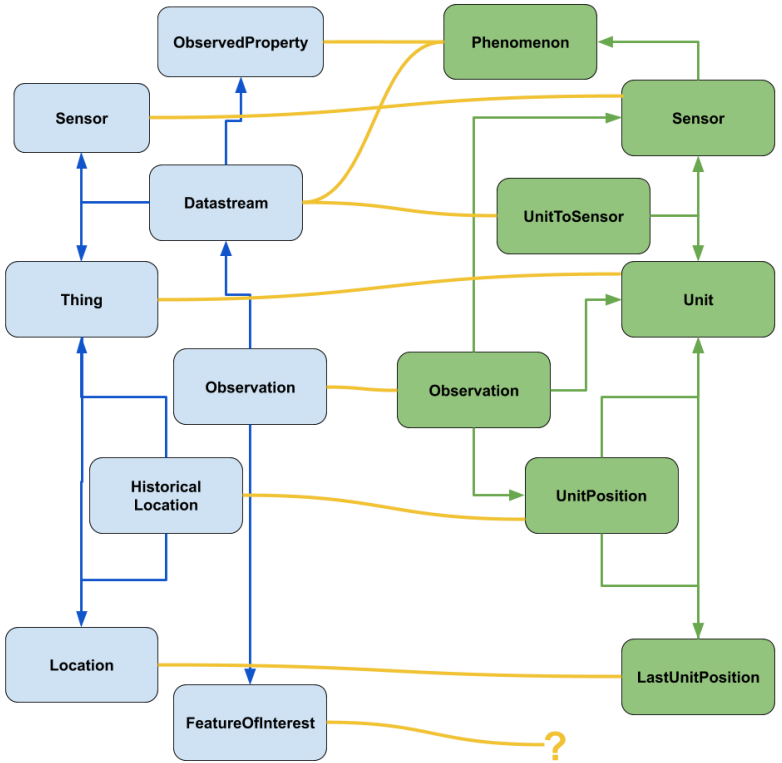
Interoperability for sharing in-situ and citizen-sourced data

- Ensuring interoperability
- Challenge: ‘Moving Sensors’’
- Modelling independently the sensor, from the volunteer and from the location that the measurement was collected
- Heterogeneous measurements collection
- HTTP POST, DELETE, PUT & PATCH requests enabling the creation, update & deletion of entities



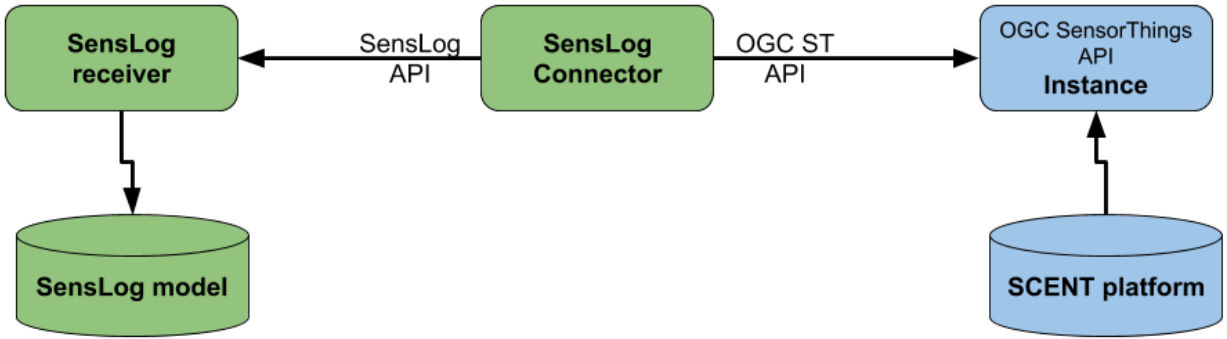
Interoperability for sharing in-situ and citizen-sourced data

- Mapping between data models OGC SensorThings API and SensLog
- Core part of SensLog data model – based on ISO O&M standard
- Different names of entities – similar meaning
- 70 % of attributes adopted 1:1,
- 20 % by calculations



Interoperability for sharing in-situ and citizen-sourced data

- Integration of an environmental dataset by utilization of an instance of SensLog Connector
- SensLog Connector translates API of external endpoint to SensLog API
- Design of SensLog Connector allows to implement external API by implementing interface template
- Design to push or pull data from/to external data storage



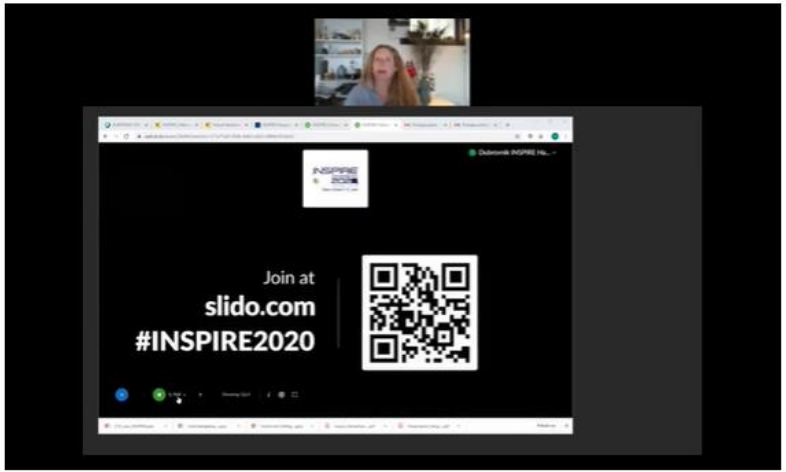
Impact

- Tackle fragmentation of citizen-science projects and resources;
- Maximise the value of citizen-science data by facilitating the discoverability and usability along with EO and other in-situ data;
- Efficient modelling of IoT enabled, crowd-sourced and in-situ measurements through the OGC SensorThings API;
- Contributing to the integration and utilisation of citizen-science data towards monitoring and implementing SDGs;
- Support and streamline the uptake and combination of citizen-science data with existing information systems and legacy data sources and subsequently lead to improved monitoring of relevant indicators

INSPIRE Hackathon – Citizen Science Challenges

- INSPIRE Conference
- Online workshop (June 11)
- Challenge 7 was awarded the second prize!

"Dubrovnik INSPIRE Hackathon 2020 – Final workshop"



Learn more:
https://www.weobserve.eu/marketplace/dubrovnik-inspire-hackathon-2020-citizen-science-and-earth-observation-challenges/