



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

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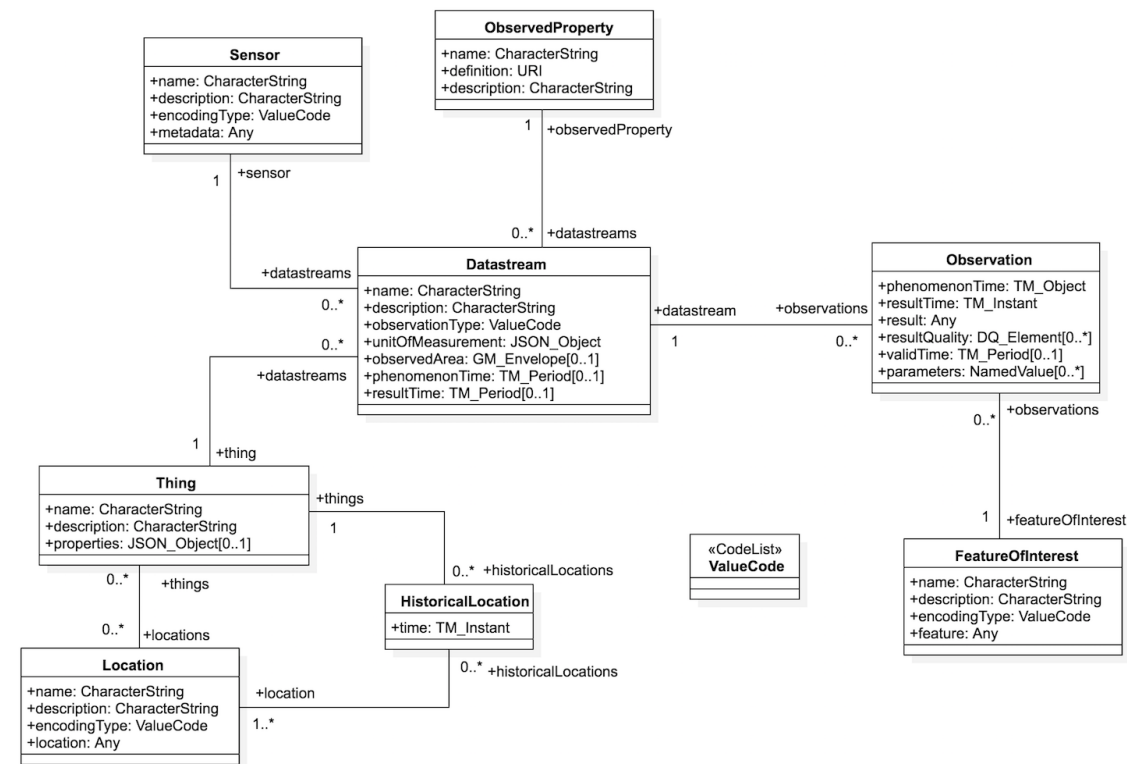
# Challenge Aim

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- 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 datasets of environmental monitoring by utilization of special “data translators”

# Background

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



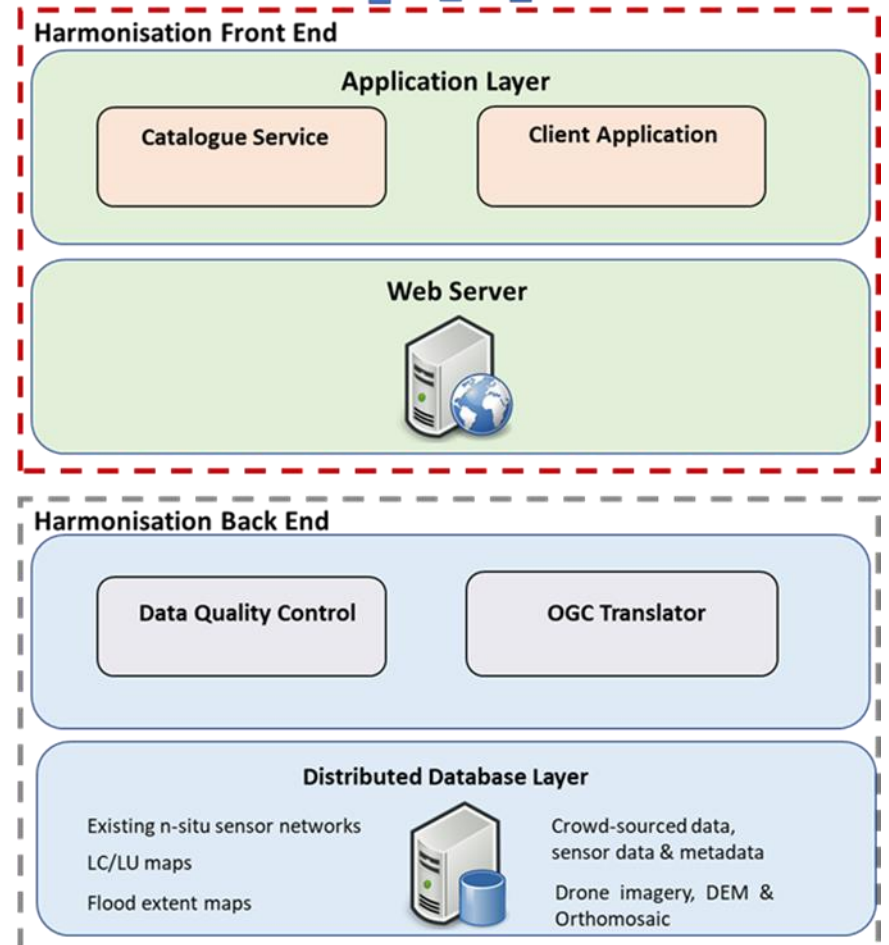
# Results

- ❖ Analysis of the OGC SensorThings API and exploitation of data provided from [SCENT Citizen Observatory](#)

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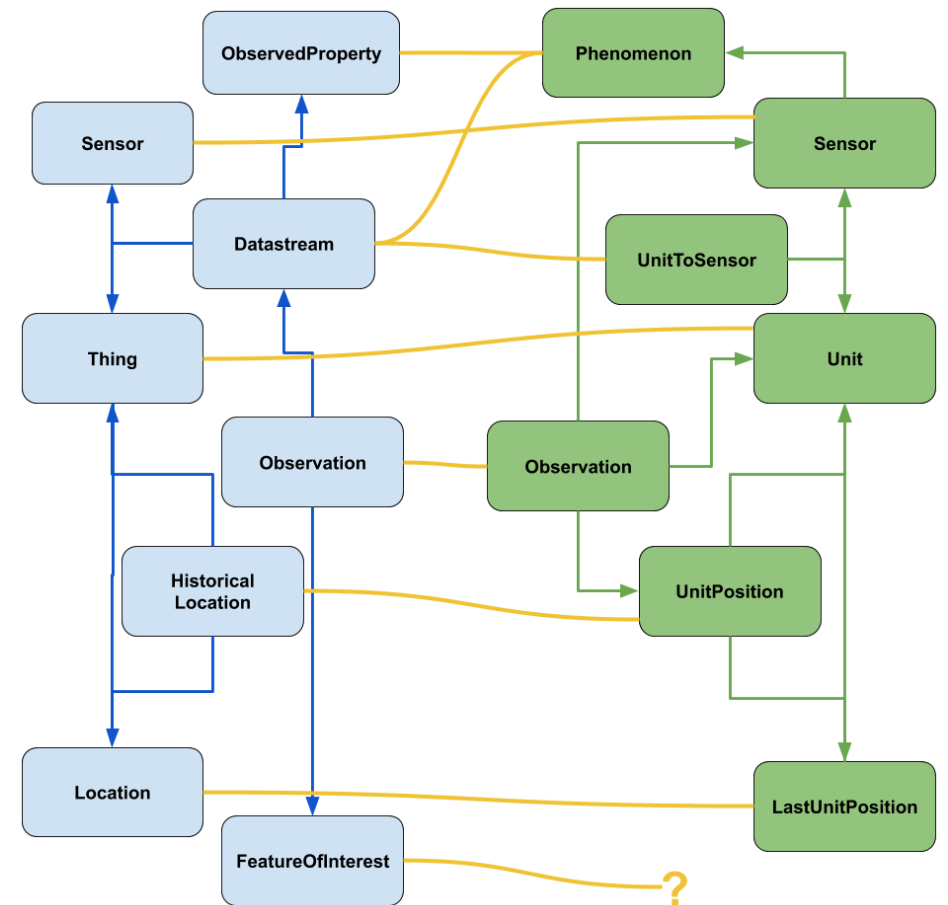
value:
  0:
    name: "Things"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/Things"
  1:
    name: "Locations"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/Locations"
  2:
    name: "HistoricalLocations"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/HistoricalLocations"
  3:
    name: "Datastreams"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/Datastreams"
  4:
    name: "Sensors"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/Sensors"
  5:
    name: "Observations"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/Observations"
  6:
    name: "ObservedProperties"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/ObservedProperties"
  7:
    name: "FeaturesOfInterest"
    url: "https://mariaisawsome.iccs.gr:8443/SensorThing/v1.0/FeaturesOfInterest"

```



# Results

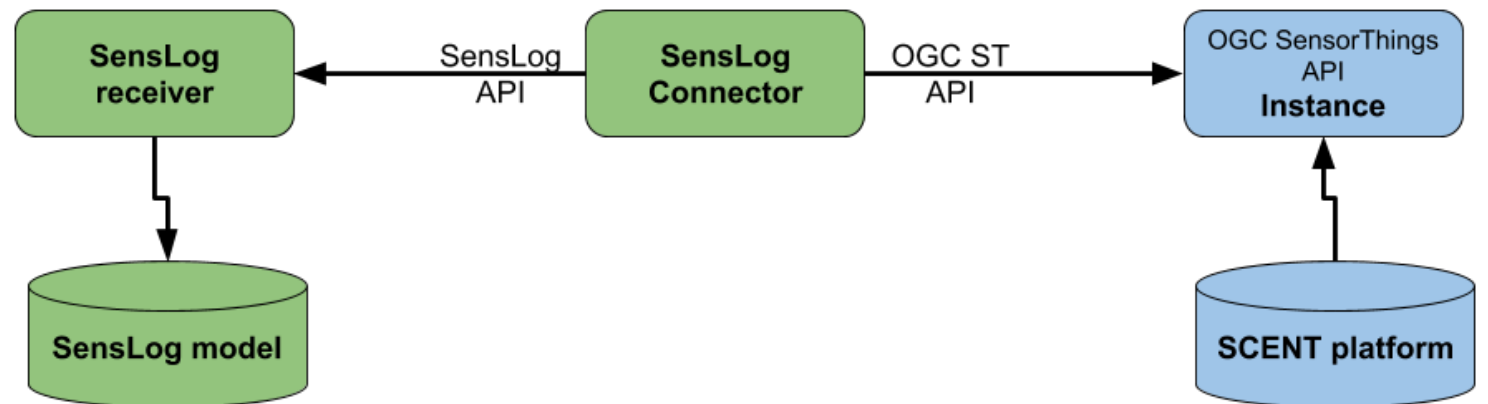
- ❖ Mapping between data models OGC SensorThings API and SensLog
- ❖ Core part of SensLog data model – based on ISO O&M standard
- ❖ Different names of entities – similar meaning
- ❖ 70 % of attributes adopted 1:1,
- ❖ 20 % by calculations



# Results

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- ❖ 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



# Future Improvements

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- ❖ Implementation of a fully-integrated interface module for SensLog based on the OGC SensorThings API specification
- ❖ Final design and implementation of VGI module for SensLog with multimedia observations

# Conclusion

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- ❖ Efficient modelling of IoT enabled, crowd-sourced and in-situ measurements through the OGC SensorThings API
- ❖ Mapping of data models between two sensor data models
- ❖ Integration of example dataset to the system based on standardized interface
- ❖ 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