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Embedding of I-ADOPT in W3C OGC standards

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Embedding of I-ADOPT in W3C/OGC standards

22/05/2024

RDA VP 22 - Embeddings of I-ADOPT in existing standards



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Hélène Bressan - BRGM

Big Picture : W3C / OGC cooperation

W3C / OGC MoU:

- That allows us to participate in joint activities and to some degree, in non-joint work.
- Organizations that are members of OGC can freely participate in the W3C Spatial Data on the Web effort or a future specific, joint group. Getting into other groups is a little more difficult, but possible.
- The MOU also allows to jointly publish Standards created by our joint group.

W3C Spatial Data on the Web charter: <https://www.w3.org/2021/10/sdw-charter.html>

Mirror groups between both

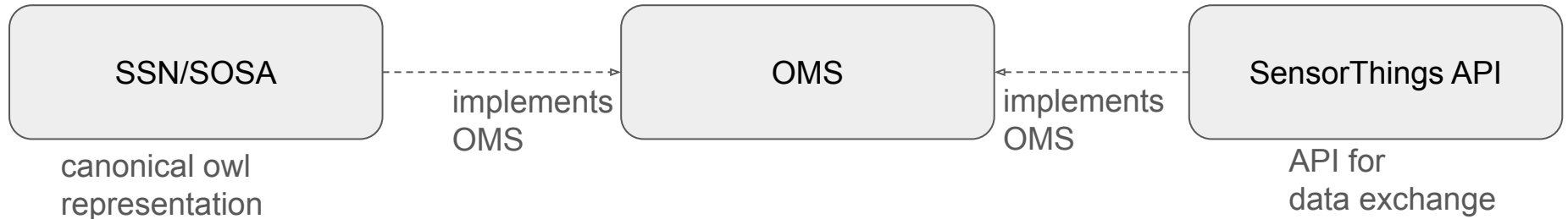
- W3C - SDW Spatial Data On The Web
 - <https://www.w3.org/2021/10/sdw-charter.html> (Charter currently being updated)
 - <https://www.w3.org/TR/sdw-bp/>
 - SSN/SOSA
 - GeoSPARQL
 - etc...
- OGC: Geosemantics, then other groups of interest (ex : Observations & Measurements, ...)

Big Picture : which W3C / OGC standards in this context ?

- OGC / ISO 19156:2023 Observations, Measurements and Samples (OMS)
- W3C SSN/SOSA
- OGC SensorThings API
- Etc... and some other initiatives (ex: OGC building blocks, ...)

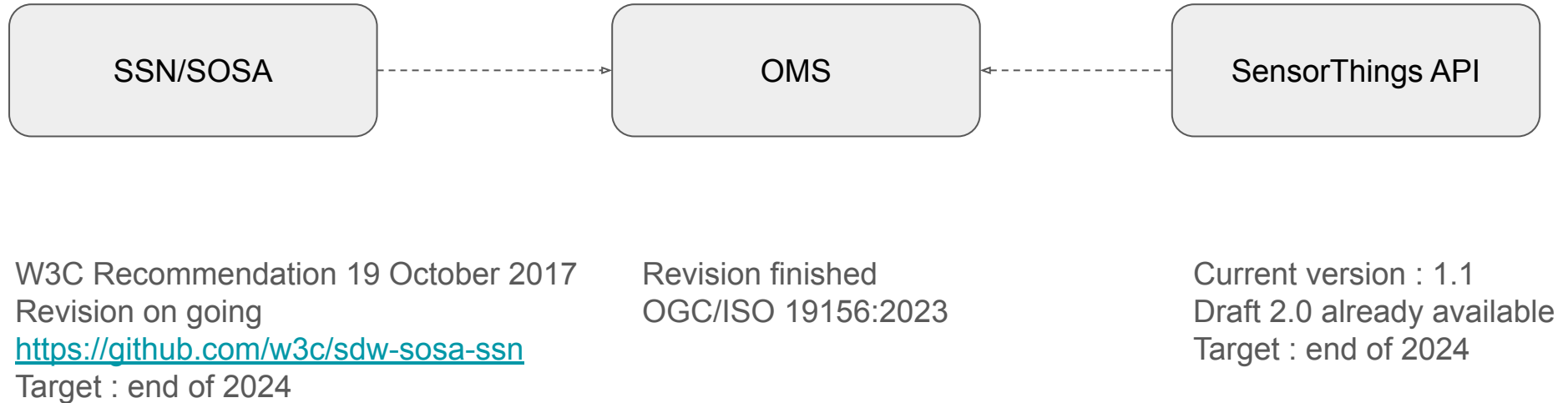
W3C / OGC observations & samples related standards

How are they linked



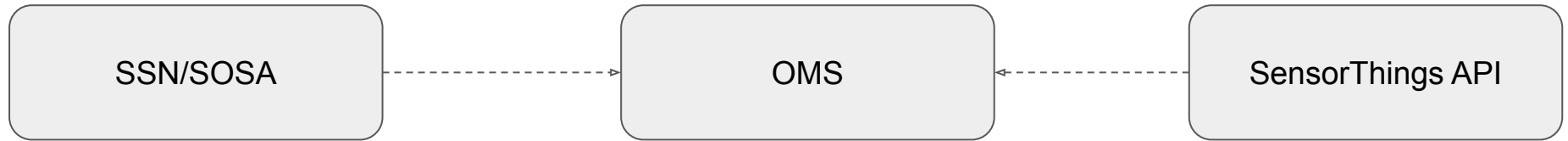
W3C / OGC observations & samples related standards

Versions status



W3C / OGC observations & samples related standards

Link with I-ADOPT



Discussed in the group

- Core VS extension
- Linked issue [#47](#),

ObservingProcedure

- link ObservableProperty

Already discussed in the group
Need formal testing with
OMS logical model

SensorThings API - with
I-Adopt already drafted

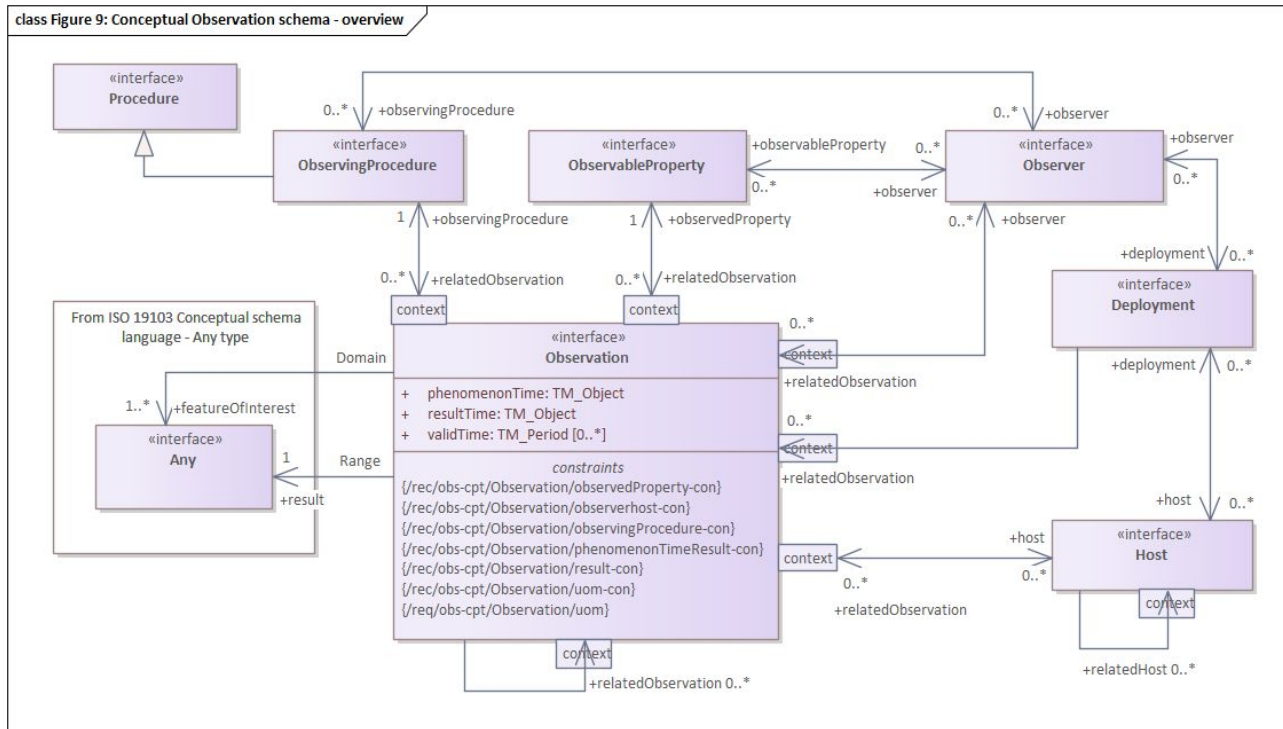
SSN/SOSA

OMS

SensorThings
API

Observations, measurements and samples (OMS)

An observation is an act carried out by an **Observer** to determine the value of an **ObservableProperty** of an object (**featureOfInterest**) by using a **Procedure**; the value is provided as the **result**.



SSN/SOSA

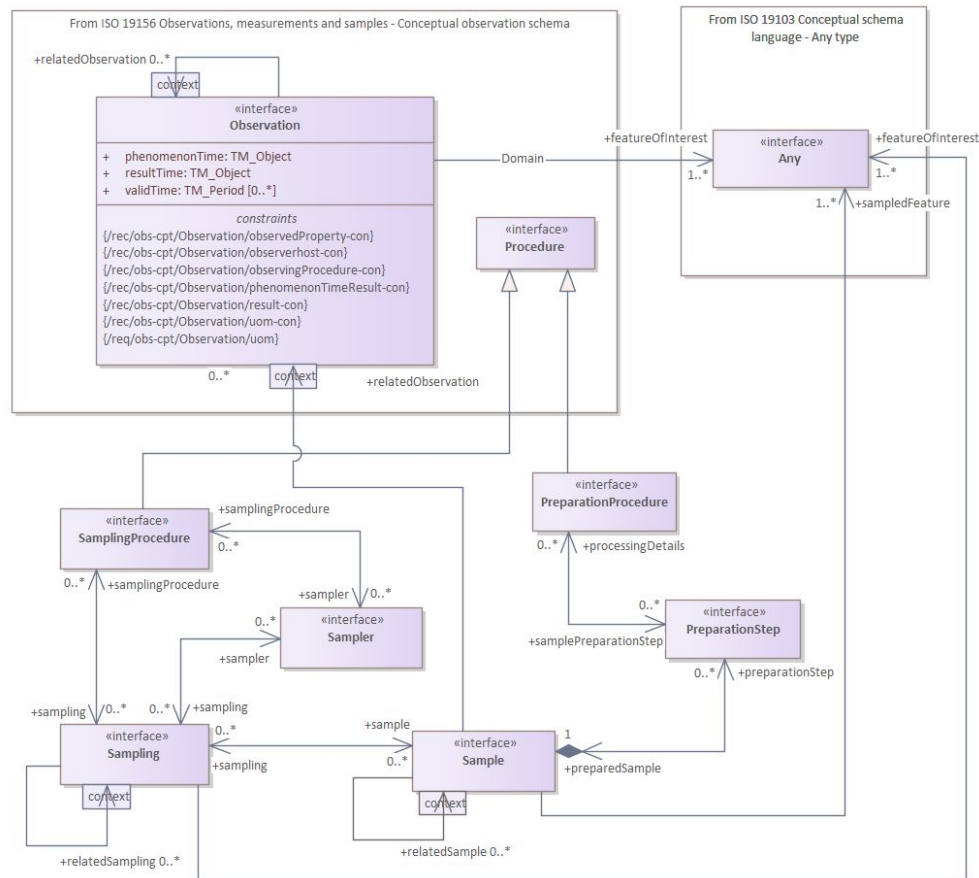
OMS

SensorThings
API

Observations, measurements and samples (OMS)

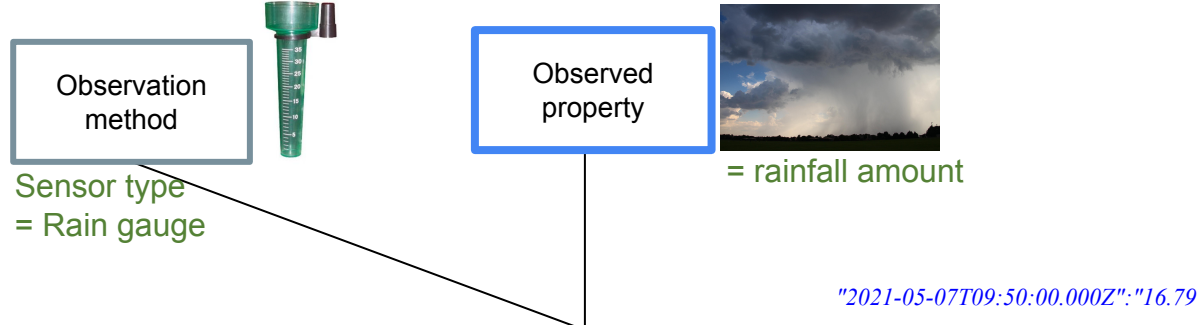
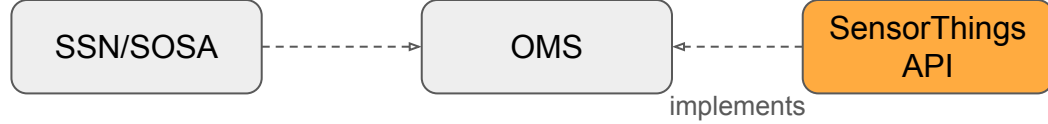
Observation can involve **Samples**, **Sampling**, **Sampler** and their related procedures/steps

class Figure 25: Conceptual Sample schema - overview



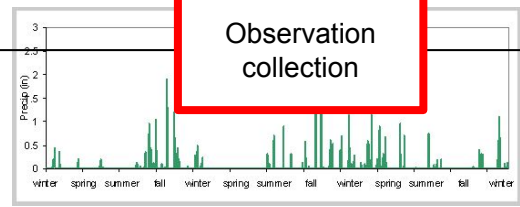
OGC SensorThings API

Layman's terms

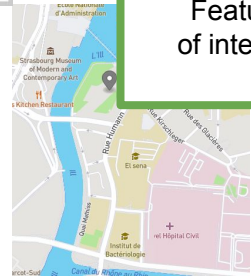


Observer / Sensor / Station

Sensor instance = The Strasbourg meteo station



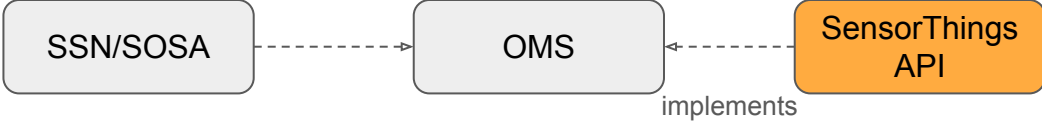
Observation



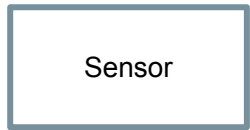
Feature of interest

= Representative zone around the station

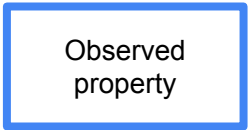
OGC SensorThings API



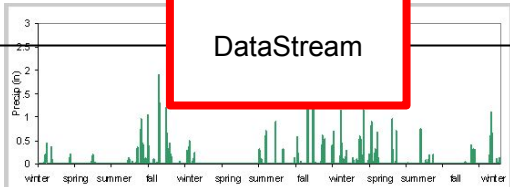
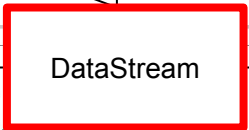
Terms from the standard (V1.1)



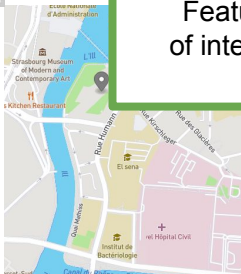
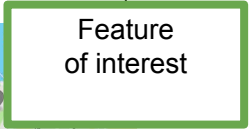
Sensor type
= Rain gauge



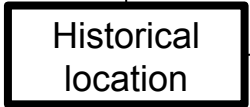
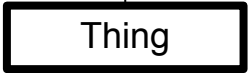
= rainfall amount



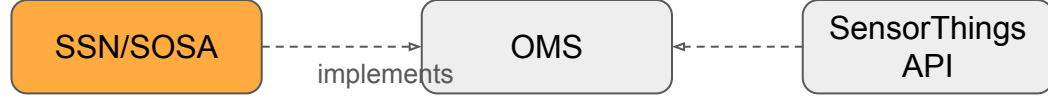
= rainfall time series



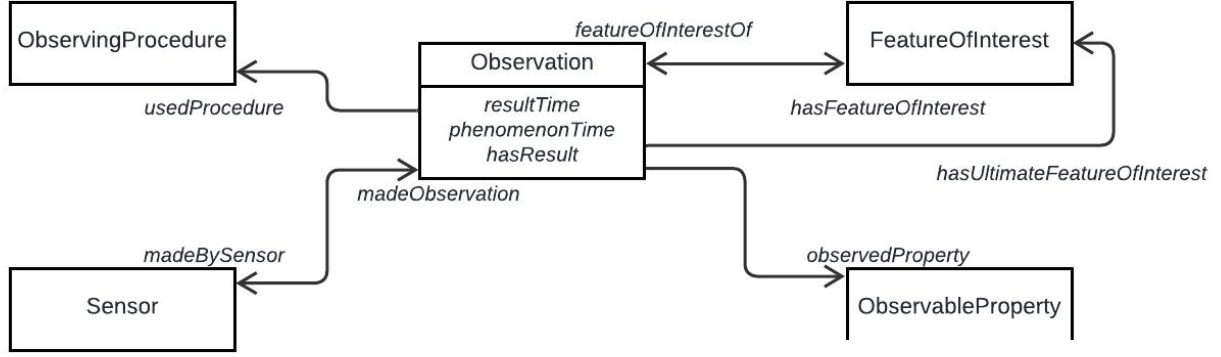
= Representative zone
around the station



Sensor instance = The
Strasbourg meteo
station

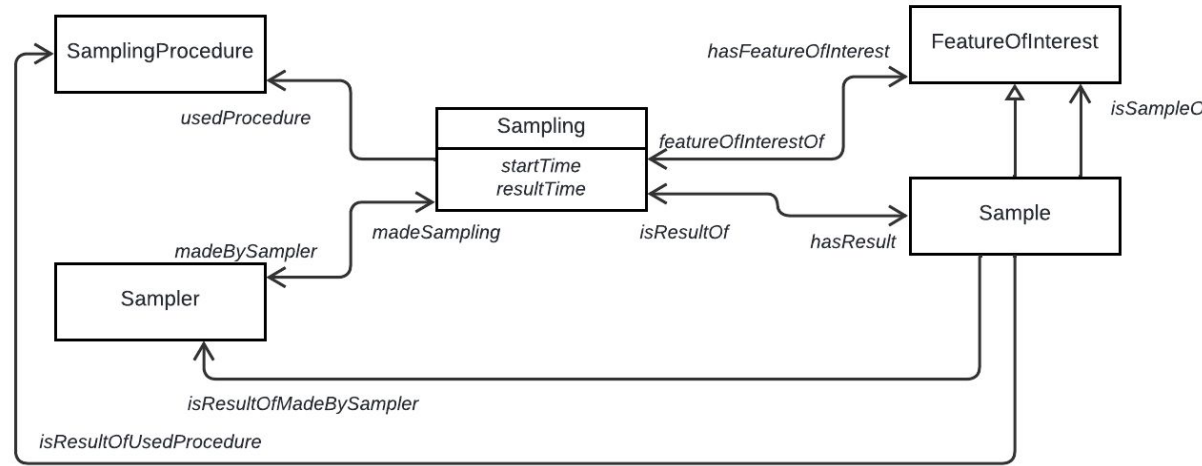


SSN/SOSA



*WIP : Snapshots from current work:
issue #47 and PR #213*

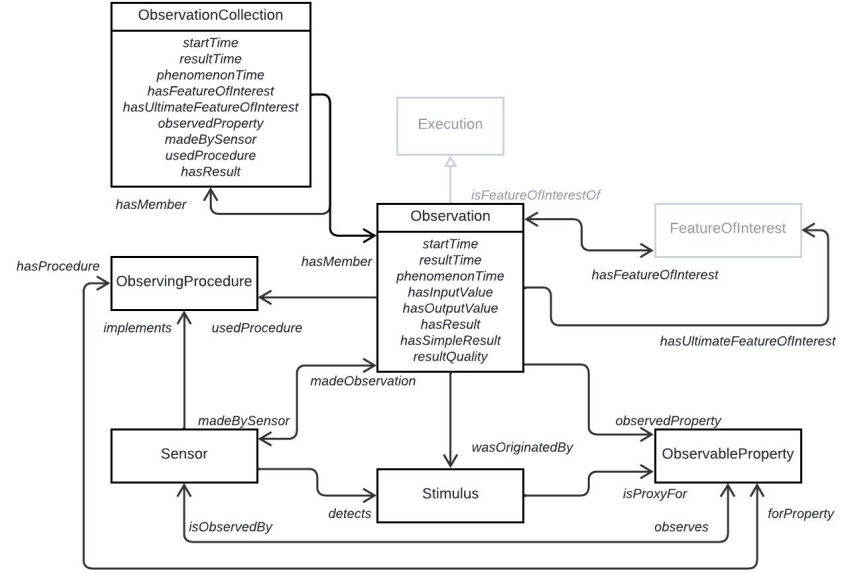
Overview of the key classes and properties (observation perspective)



Overview of the key classes and properties (sampling perspective)

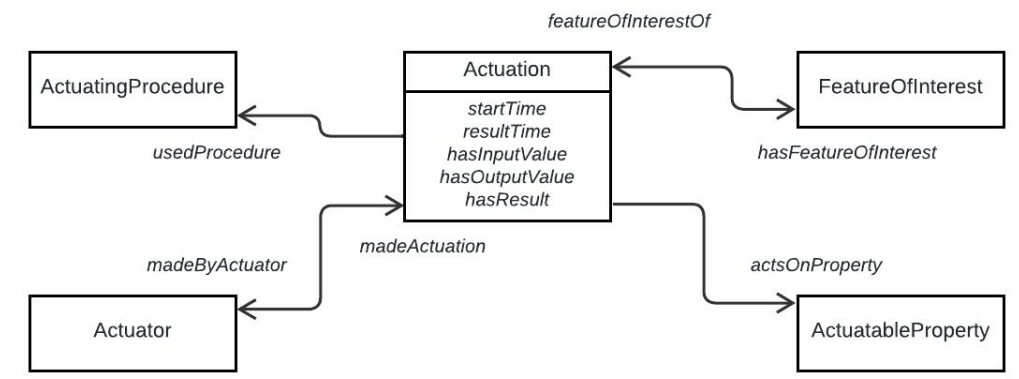


SSN/SOSA



On-going discussion on linking Observable Property and Observing Procedure (issue #47)

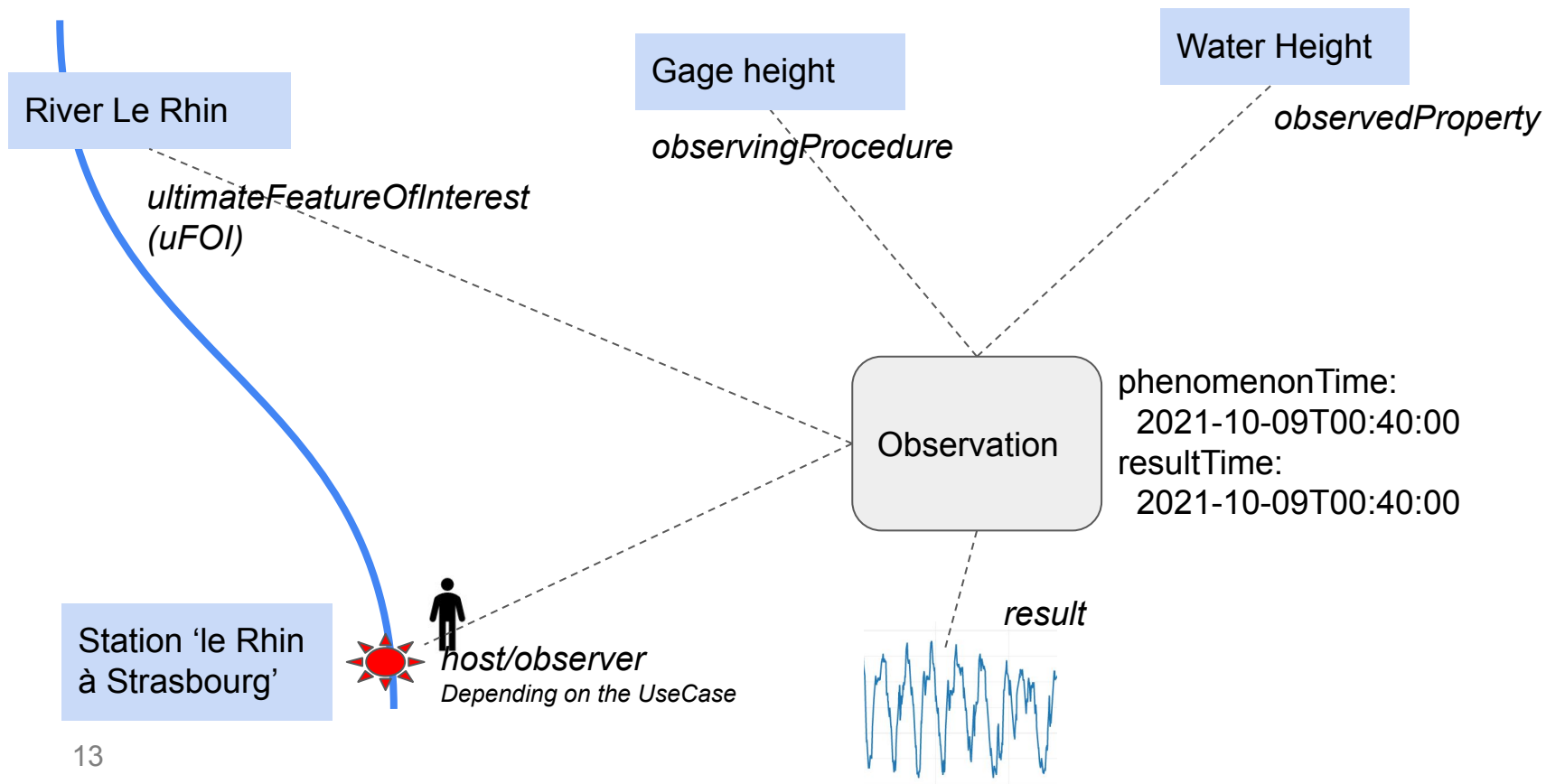
WIP : Snapshots from current work:
issue #47 and PR #213



Overview of the key classes and properties (actuation perspective)

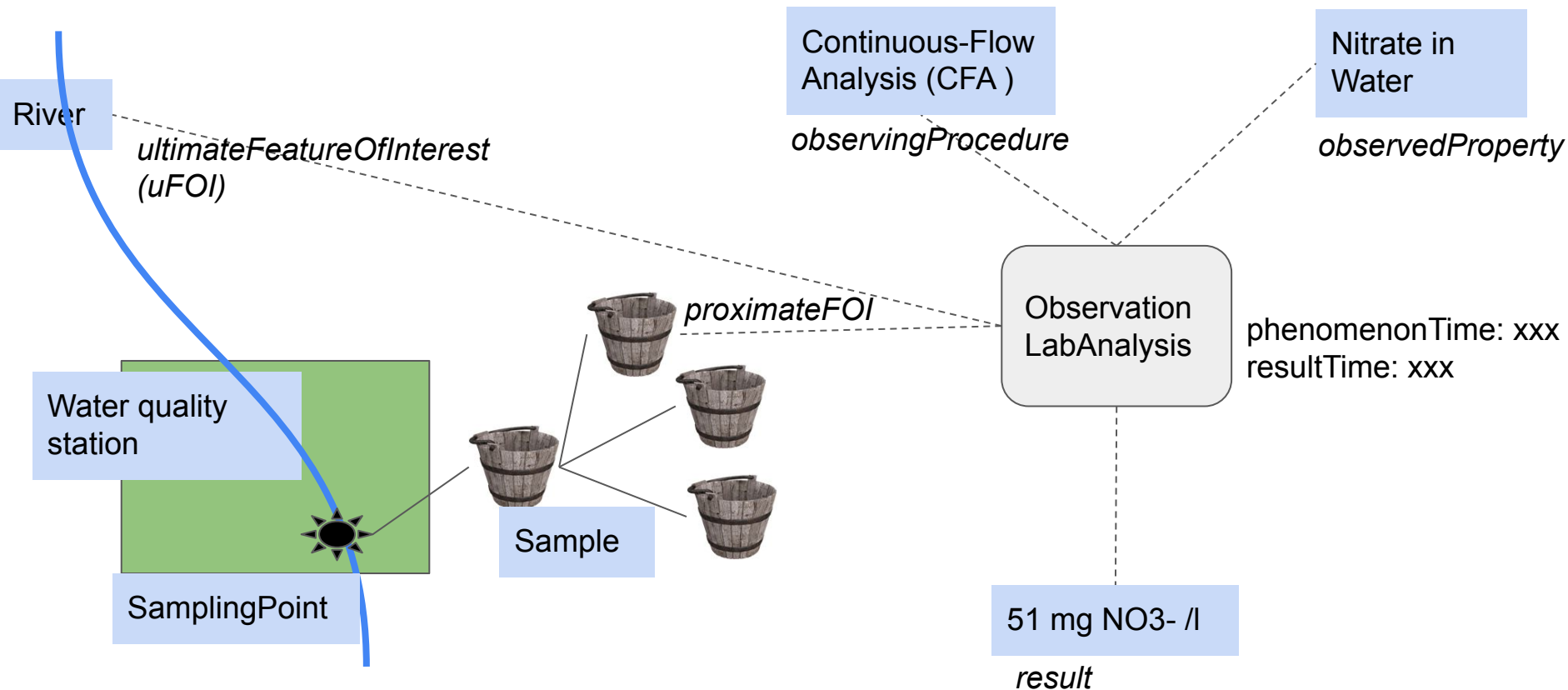
How do OMS & I-ADOPT work together ?

OMS level 1 example : surface water quantity (height gage)



How do OMS & I-ADOPT work together ?

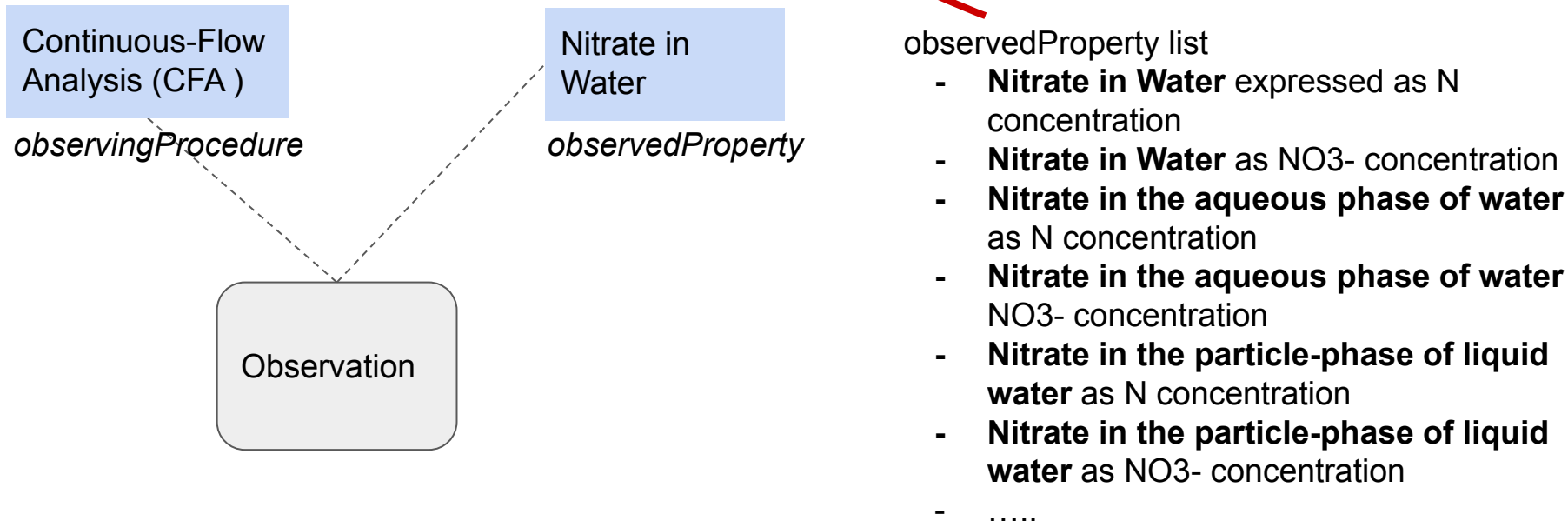
OMS level 2 example : surface water quality (samples)



How do OMS & I-ADOPT work together ?

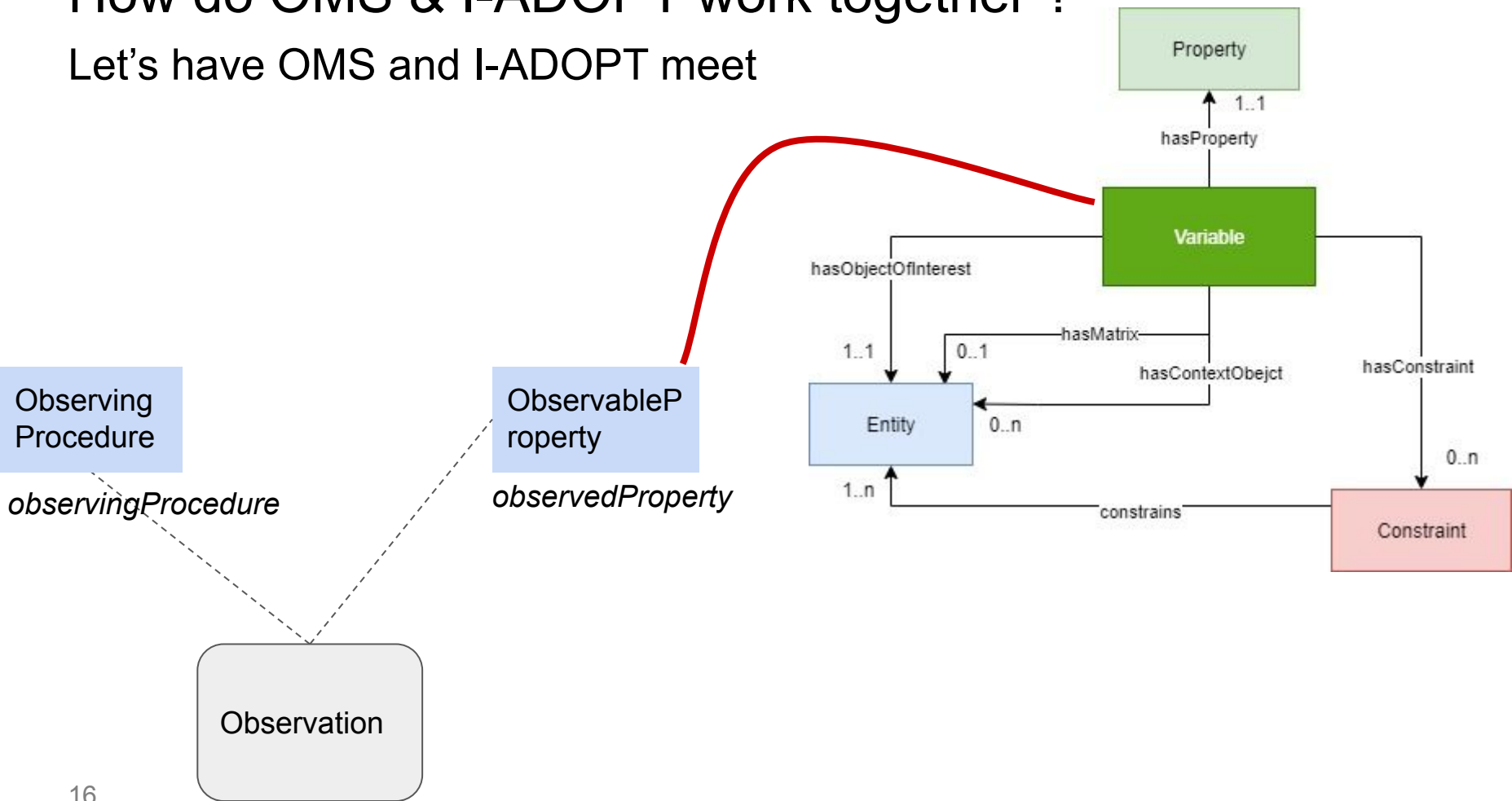
Limits of Observable properties in OMS

We are limited to a 'flat list'



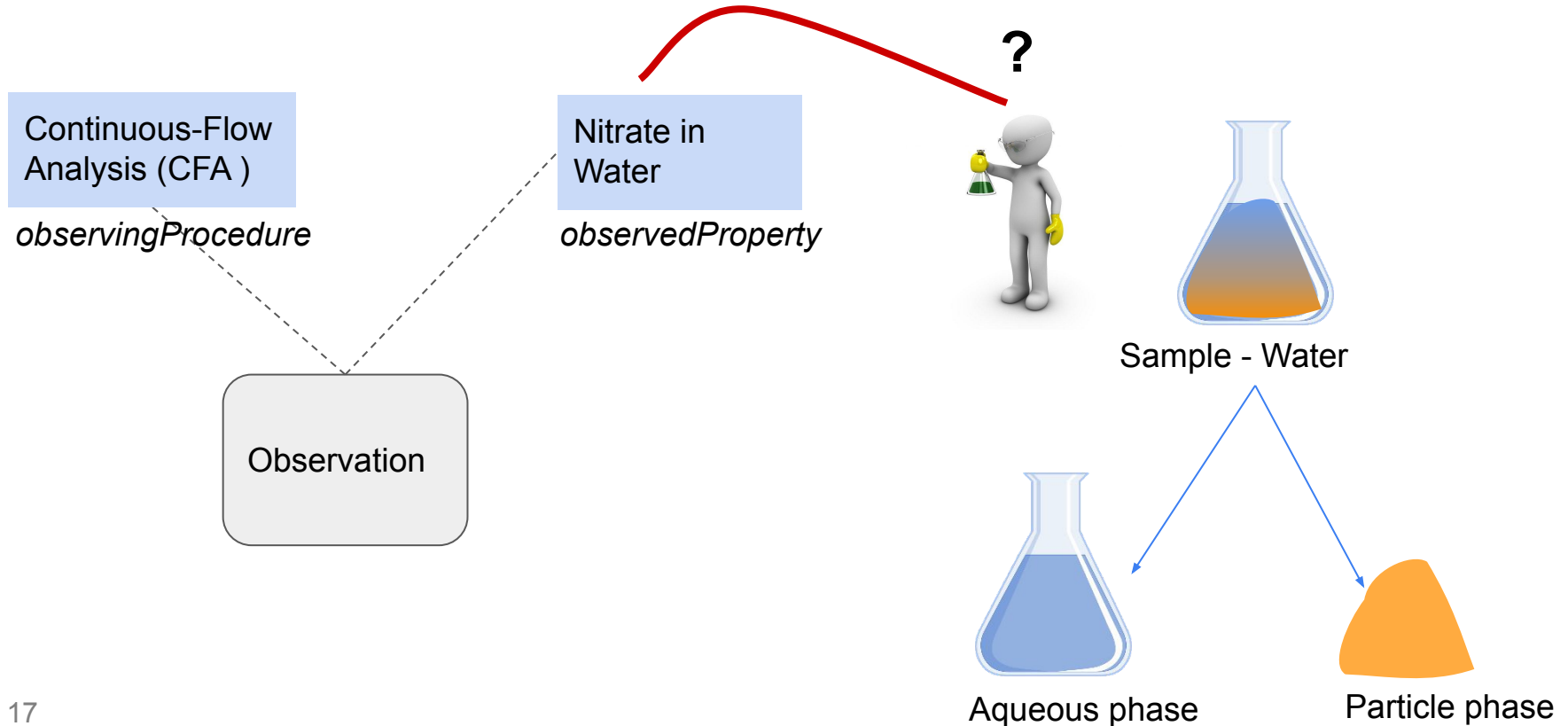
How do OMS & I-ADOPT work together ?

Let's have OMS and I-ADOPT meet



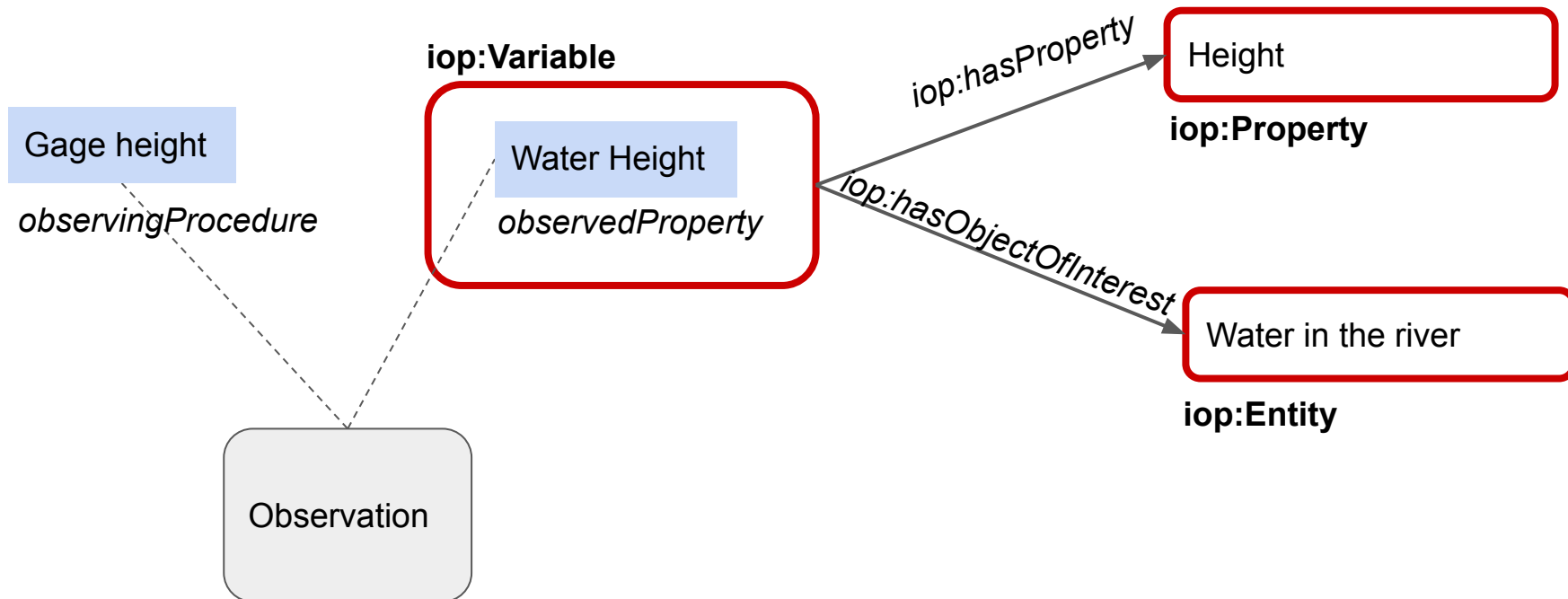
How do OMS & I-ADOPT work together ?

Limits of Observable properties in OMS



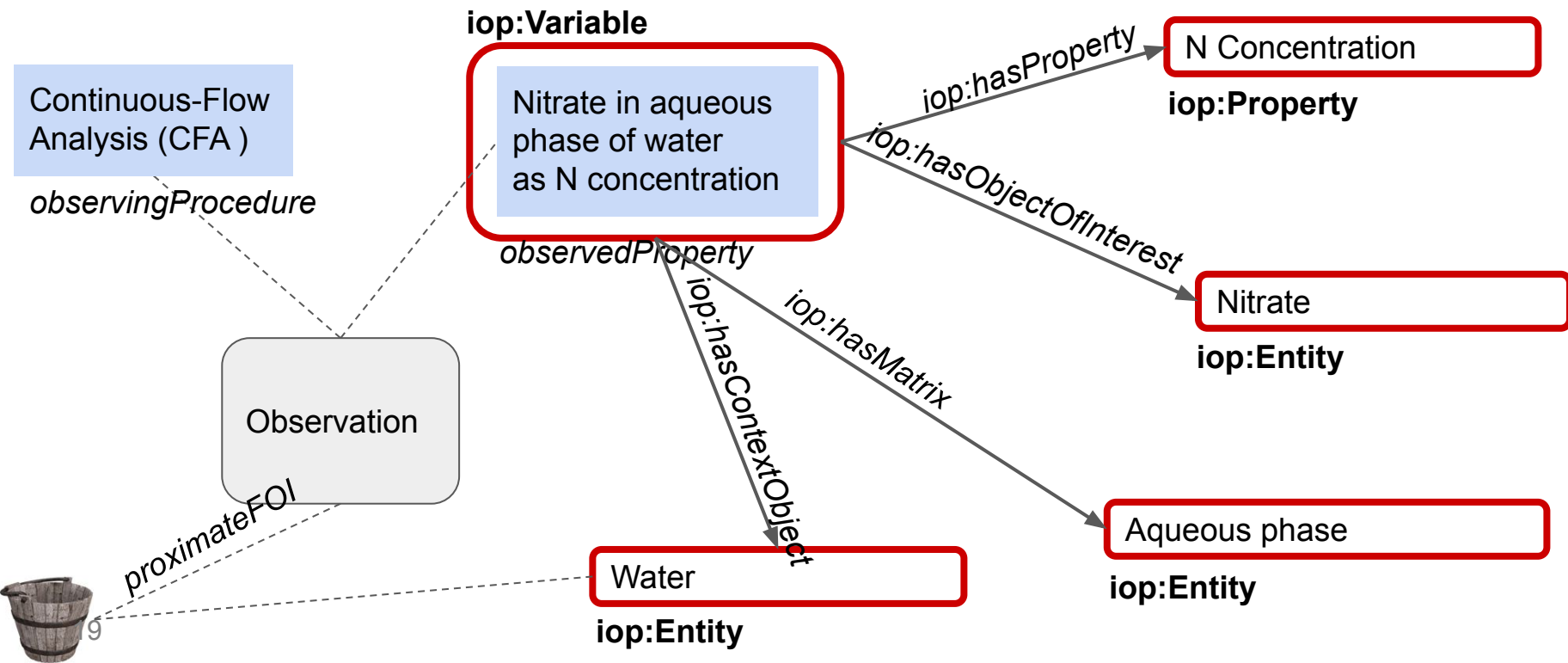
How do OMS & I-ADOPT work together ?

OMS + I-ADOPT level 1 example



How do OMS & I-ADOPT work together ?

OMS + I-ADOPT level 2 example



How do OMS & I-ADOPT work together ?

I-ADOPT covered what we had as an issue when starting OMS revision years ago (thanks).

<https://github.com/opengeospatial/om-swg/issues/21>

Observing Procedure

observingProcedure

Observation

Observable Property

observedProperty

Variable

iop:hasProperty

iop:hasMatrix

iop:hasObjectOfInterest

iop:hasContextObject

works well

Embedding of I-ADOPT in W3C/OGC standards

Approach proposal

2 parallel activities that will cross fertilize (several people are in both groups)

- A°/ OGC OM standard working group
 - 1°/ OMS ObservableProperty model
 - To be included with OMS Logical model
 - 2°/ Then ST API extension
- B°/ W3C SSN/SOSA
 - SSN/SOSA observableProperty extension
- Bottom line
 - Target : Not having different model in A1°/ and B°/
 - Note : through the process, the original I-ADOPT model may be adjusted (still respecting the vision)
 - Ex : OMS : Host/Deployment/Observer and SSN/SOSA : Platform/Deployment/Sensor

*To be discussed in further
details in separate
meetings*



Geosciences pour une terre durable

brgm

THANK YOU

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