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Water quality IE update

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Water quality IE update

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30 May 2023 - HDWG Spring 2023



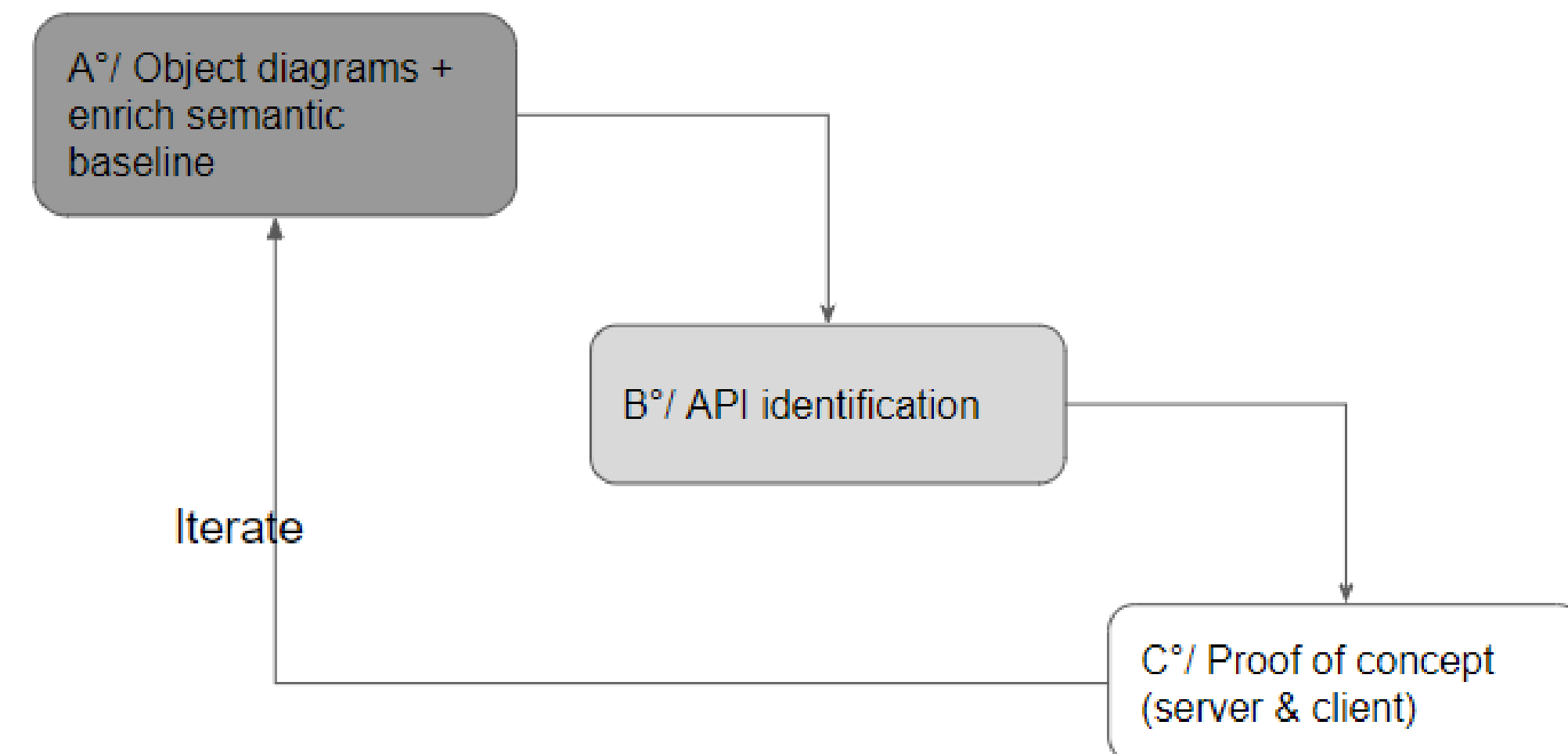
Context

- Water Quality workshop March 2022
- Kick-off : 13/09/2022
- Weekly webconf every Tuesday since then
- The reference point : <https://github.com/opengeospatial/WaterQualityIE/>
 - Link to living G.Doc for minutes then GoToMeeting webconf link etc....,
 - Issues,
 - Model : now available under OGC Sparx Cloud.

Use cases identifications and phasing

	Org	Fol Type: Water (Surface and Ground together at this stage)			
Method	<i>Observed Property group</i>	Quantity	Physical properties	Chemistry	Biology
	Samples	Here as a support to WQ	1	2	3
	Sensors				
	Hydro Models				
	Remote Sensing				

Rationale (per Use Case)



Progress overview

- Partners expectations regarding the IE
 - OMS crash courses
 - Use cases identifications and phasing
 - Conceptual/Logical model -> Object diagrams
 - From doodles to real ones
 - Mapping with partners systems
 - Vocabularies => starting
 - Physical
 - Serializations examples & mapping to OGC APIs
 - Test implementations from the various partners: server, client
 - Report
- ITERATE
- 80% done on Surface Water
- We are here
-

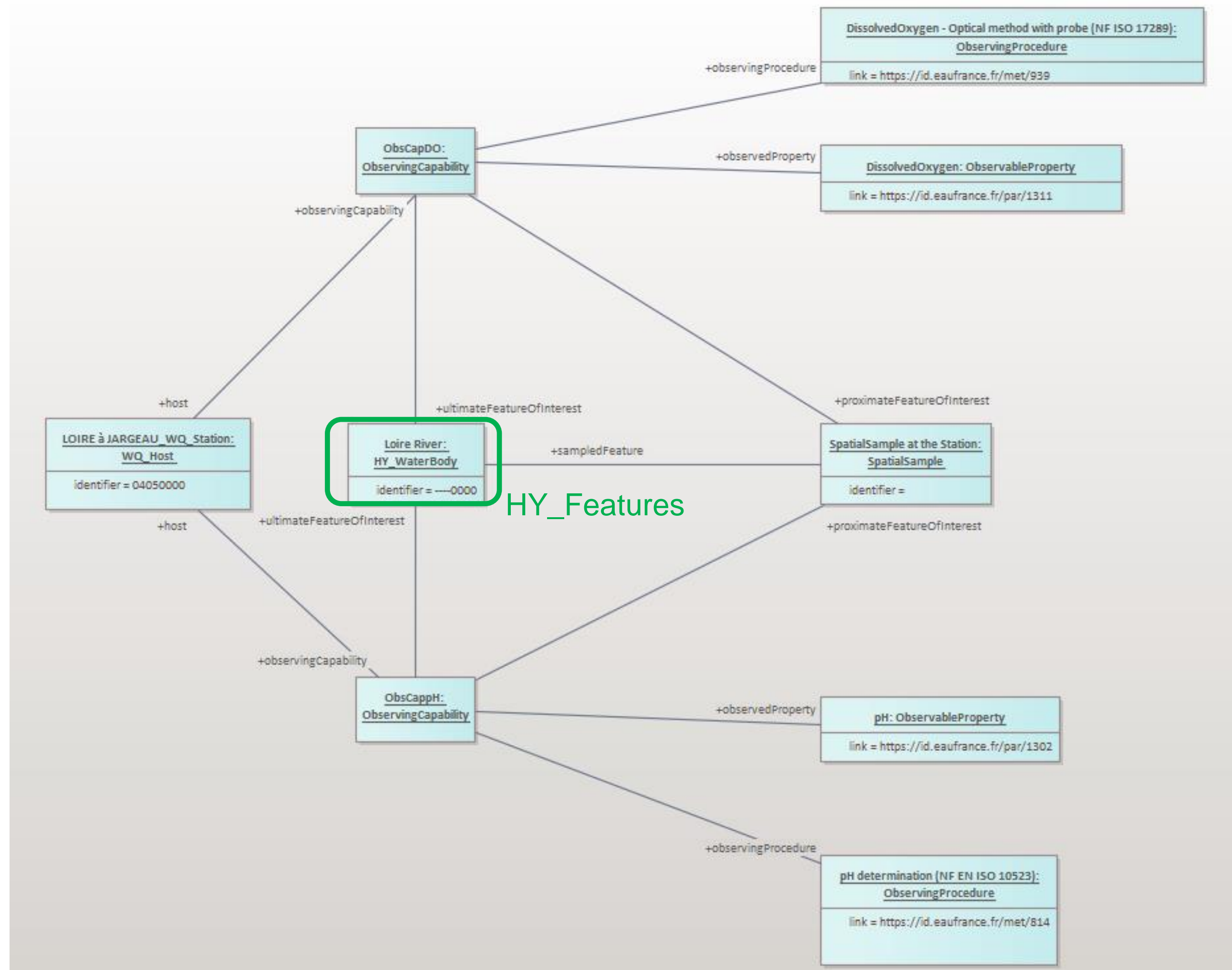
Object diagrams

- Now available under <https://umltool.ogc.org/index.php>
 - Also pushed HY_Features, GWML2 will join soon
- Use Cases considered
 - Dissolved Oxygen <-> Temperature
 - pH <-> Arsenic
 - Flow <-> Dissolved Oxygen & Temperature
- Joint pattern discussed and identified accross
 - “In-situ surface water quality observation” -> no Sample
 - And “Lab surface water quality observation”

⇒ Allows cross-walk between both

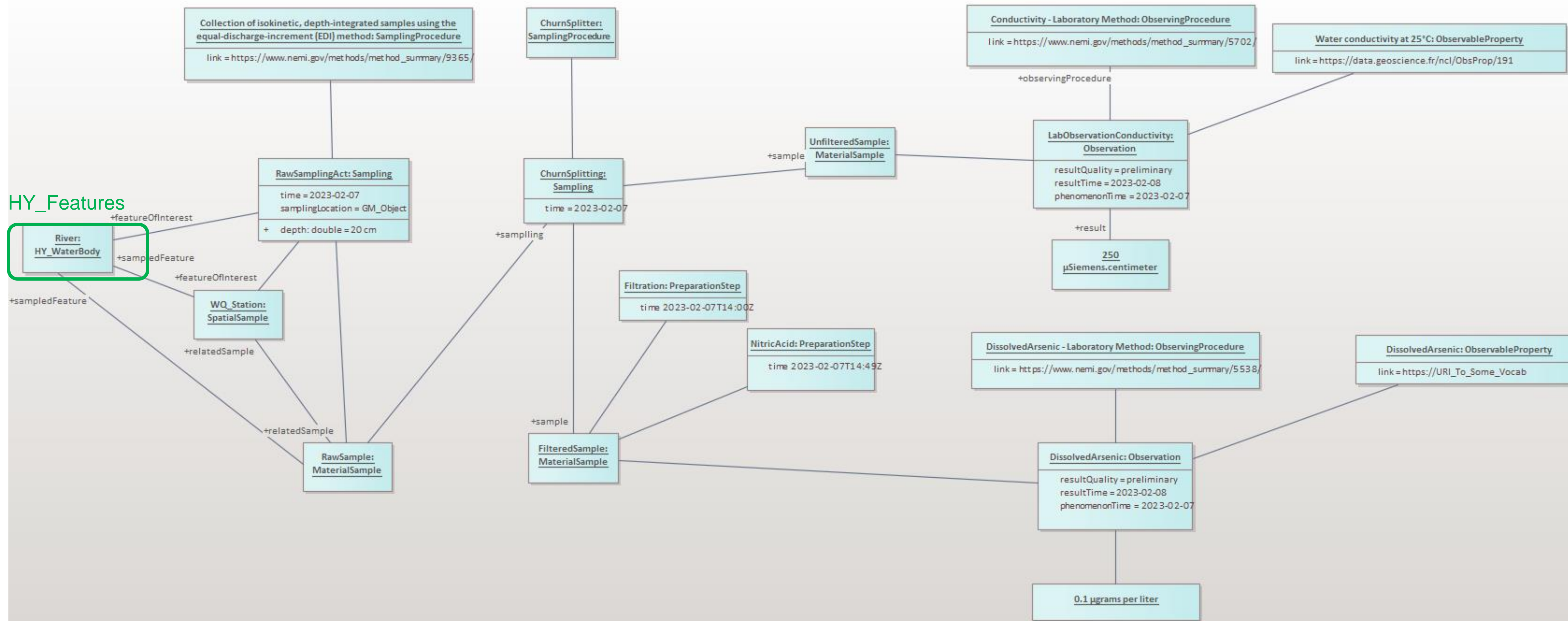
Object diagrams

- In-situ surface water quality observation: 90% OMS + some additions



Object diagrams

- Lab surface water quality observation: 90% OMS + some additions



Mapping with partners systems

- WQX
 - Now regular WQX - WQ IE mapping sessions
 - <https://docs.google.com/spreadsheets/d/1Fff2MAq7jciXRuMjogPCeuiv6CIT9gWf0-kku1VSUKQ/edit#gid=0>
- French Water information system : also on-going

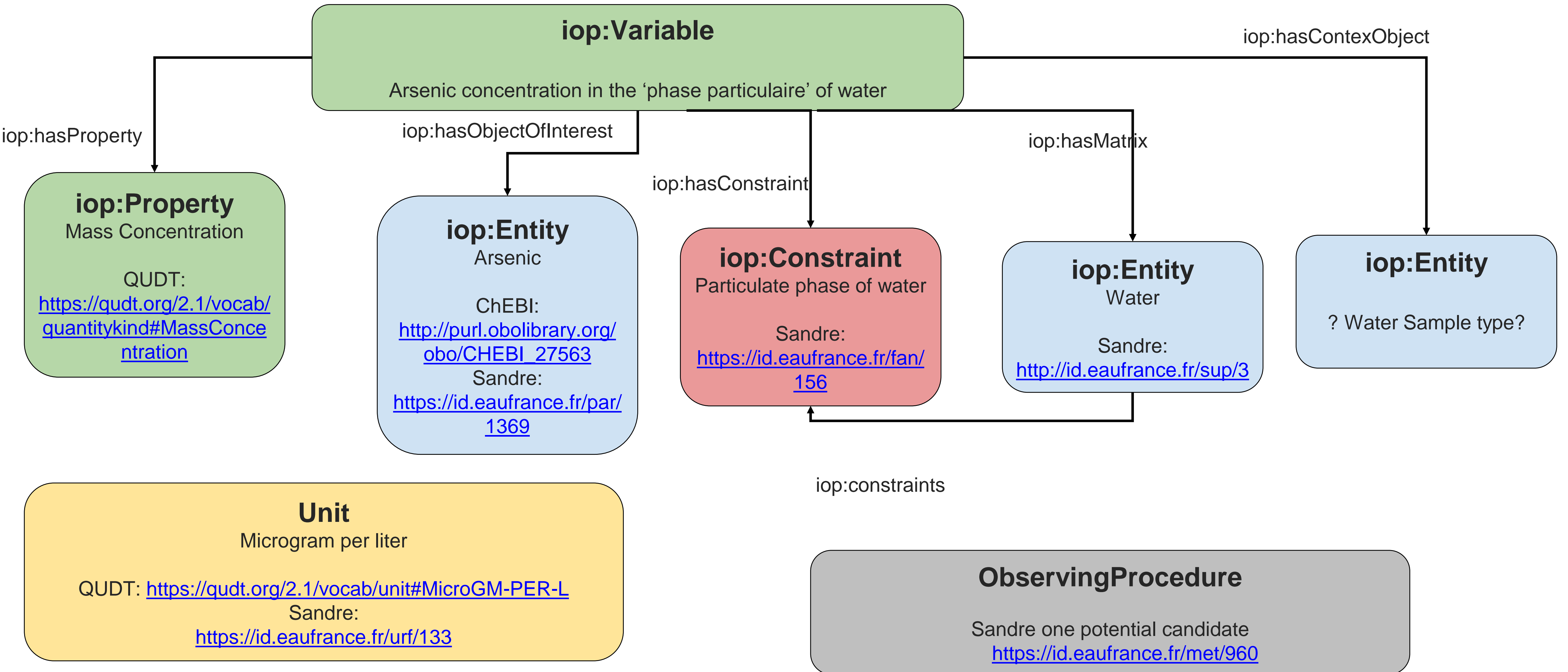
Vocabularies - rationale

- Method
 - Based on the Use Cases considered in the Object Diagrams
 - Identify
 - core vocabularies elements needed
 - those used in the current systems
 - Provide some guidance on generic ones
 - And check if I-ADOPT ontology helps

Vocabularies - example

- iop:Variable “Arsenic concentration in the ‘phase particulaire’ of water”
 - iop:hasProperty : mass concentration => <https://qudt.org/2.1/vocab/quantitykind#MassConcentration>
 - iop:hasObjectOfInterest :
 - Sandre:Par:Parametre (@en ‘parameter’) : ‘Arsenic’ <https://id.eaufrance.fr/par/1369>
 - WQX ?
 - ChEBI: http://purl.obolibrary.org/obo/CHEBI_27563
 - iop:hasMatrix -> ? Sandre:Par:Support? (<-> Matrix) : water (<http://id.eaufrance.fr/sup/3>)
 - iop:hasConstraint (applies to the Matrix) : <https://id.eaufrance.fr/fan/156> Sandre:Par:FractionAnalysee (@en ‘Analyzed Fraction’) : (l'ensemble des matières en suspension dans l'eau, récupérée généralement après centrifugation ou filtration)
 - iop:context object : ? is it assimilated to our ultimateFeatureOfInterest (thus ‘water sample’) ?
- observingProcedure
 - Sandre : -> one potential : <https://id.eaufrance.fr/met/960>
 - WQX ?
- Unit
 - Ex : mg/litre <https://qudt.org/2.1/vocab/unit#MicroGM-PER-L>

Vocabularies - example

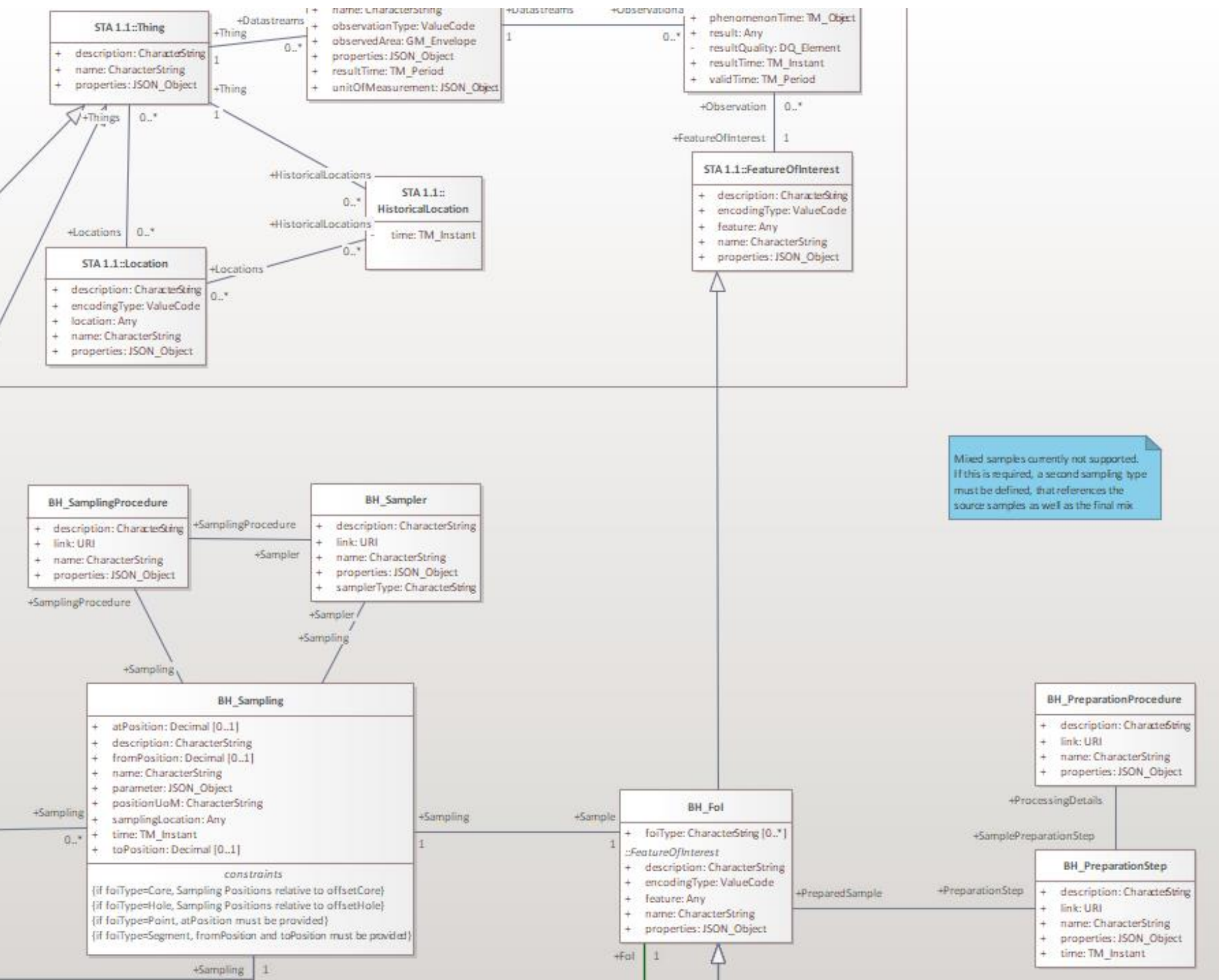


Serializations examples & mapping to OGC APIs

- Just starting
 - OMS serializations example
 - ? JSON only ?
- + « which API to serve what ? » discussion based on what GeoTech IE is doing
- ⇒ Then partners implementation

Serializations examples & mapping to OGC APIs

- Geotech IE example



Implementation level

Each subclass will then have its own 'access' URL :
<https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-GeoTech/v1.1/BhTrajectoryThings>

But for 'generic' ST API client, compatibility, an instance in the [BhTrajectoryThings](https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-GeoTech/v1.1/BhTrajectoryThings) will still be accessible under <https://ogc-demo.k8s.ilt-dmz.iosb.fraunhofer.de/FROST-GeoTech/v1.1/Things> (of course only with generic properties)

Elements identified in the Geotech IE conceptual model extending ST API 1.1 classes

Thank you and thanks to

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The WaterQuality IE team

