

Urban Water Systems: ontology overview

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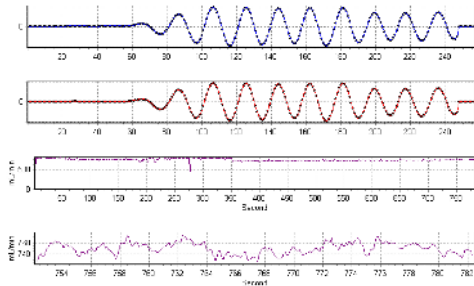
May 7, 2025

Collecting and sharing data on Urban Water

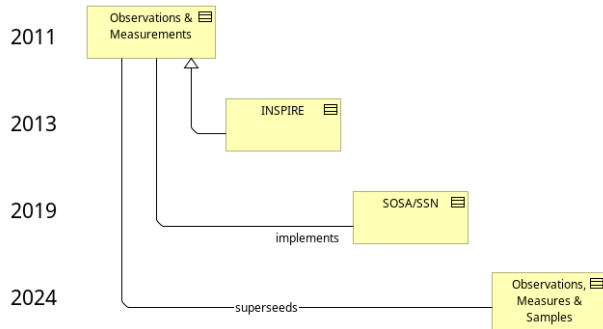
What



How



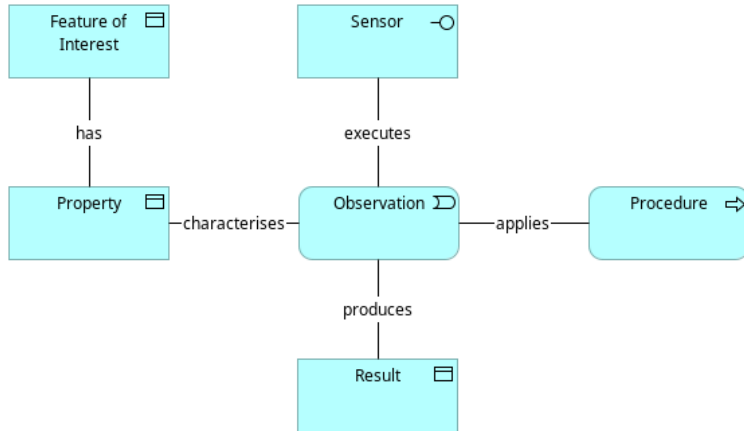
How: well known



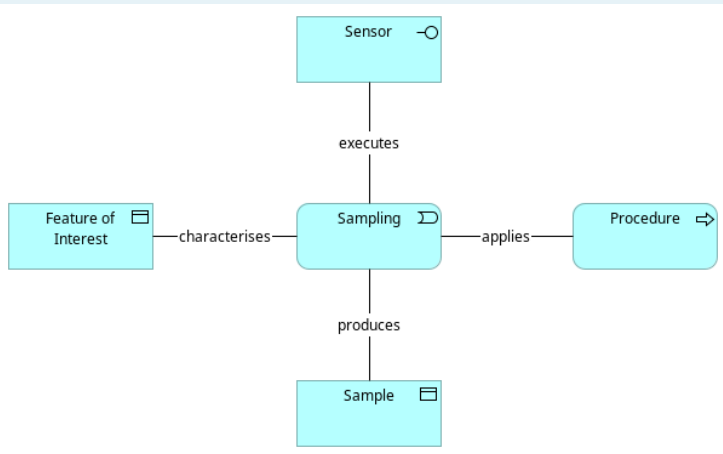
UML / XML

Semantic Web

Observation



Sampling

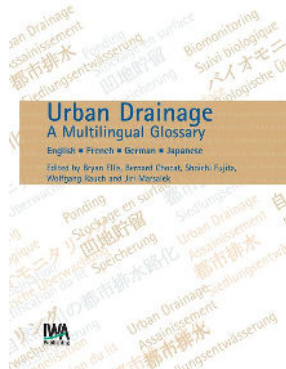


Water Quality Interchange Experiment

```
:pH_ObsA rdf:type sosa:Observation ;  
  sosa:observedProperty :pH ;  
  sosa:usedProcedure :pH_determination ;  
  sosa:memberOf :pH_ObsCollection ;  
  sosa:ultimateFeatureOfInterest :Loire_River ;  
  sosa:resultQuality "preliminary" ;  
  sosa:resultTime "2020-04-17"^^xsd:date ;  
  sosa:phenomenonTime "2020-04-17"^^xsd:date ;  
  sosa:hasSimpleResult "8.1"^^xsd:float .
```

https://github.com/opengeospatial/WaterQualityIE/tree/master/SSN_SOSA

What: getting there



Ellis, J. B., Chocat, B., Fujita, S., Marsalek, J., & Rauch, W. (Eds.). (2004). Urban Drainage. IWA publishing.

What: getting there



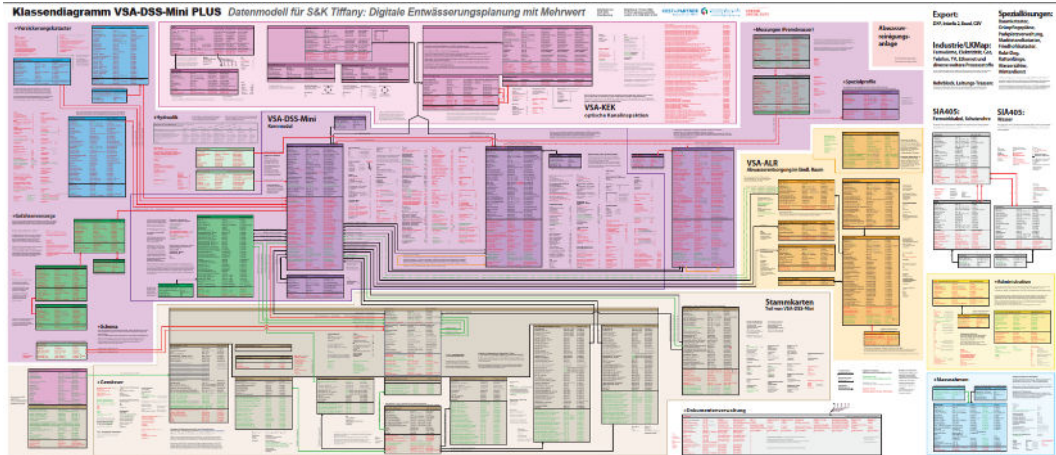
INSPIRE Infrastructure for Spatial Information in Europe

D2.8.III.6 Data Specification on *Utility and Government Services* – Technical Guidelines

Title	D2.8.III.6 Data Specification on Utility and Government Services – Technical Guidelines
Creator	Topicus MWP 2021-2024 sub-group 2.2.1
Date of publication	2024-01-31
Subject	INSPIRE Data specification for the spatial data theme Utility and Government Services
Publisher	INSPIRE Maintenance and Transformation Group (MIG)
Type	Text
Description	This document describes the INSPIRE Data Specification on the spatial data theme Utility and Government Services
Format	HTML
Access	Free access (Creative Commons Attribution (CC BY) 4.0)
Rights	Public
Identifier	D2.8.III.6 v1.0.0
Changing	https://github.com/INSPIRE-MIG/technical-guidelines/tree/main/data/us
Language	en
Relative	Derives D2.7.5.2 of the European Parliament and of the Council of 14 March 2019 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)






<https://github.com/INSPIRE-MIF/technical-guidelines/tree/main/data/us>

What: getting there



<https://vsa.ch/glossar/vsa-dss/>

What: getting there

Waterpeil t.o.v. bodem	
Naam	Waterpeil t.o.v. bodem 
	Water level above invert 
URI	BDD
Codering	BDD <small>(context: inspectie en reinigen algemeen)</small>
Zie ook	[EN13508-2+A1] Het peil van het afvalwater boven de bodem van de afvoerleiding of het riool.  [EN13508-2+A1] The level of wastewater above the invert of the drain or sewer 
Opmerking	[is aspect]
Datum start/wijz	2012-08-15 / 2019-03-19
Heeft kenmerk	+Continuous defect code <small>[max=1]</small> +Fotoreferentie <small>[max=1]</small> Kenmerk rioolwater <small>[exact=1]</small> +Longitudinale of verticale plaats <small>[exact=1]</small> +Opmerking <small>[max=0]</small> +Verbinding ter plaatse <small>[A] [max=1]</small> +Videoreferentie <small>[max=1]</small> Waterpeil - Peil <small>[exact=1]</small>
Is uitvoer van	Visueel inspecteren vrijvalleiding <small>[inverse]</small>
Heeft supertype	Afstand Waarneming divers leiding
Model details	
Heeft scope	Cof_EN
Auteur start	Martius Vorhof
Auteur aanpassing	Martius Vorhof
GWSW ontologie - Een ontwikkeling van Stichting RIONED	
	

<https://data.gwswnl>

- **Network monitoring**

- Well established concepts and standards:
 - OMS
 - SOSA/SSN
 - OGC SensorThings API
- Yet to be applied to Urban Water.

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- **Infrastructure**

- Domain well understood.
- Various initiatives and resources systematising knowledge.
- Modern data sharing/provision mechanism yet to be explored.
- Yet another standard?



Thank you!

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