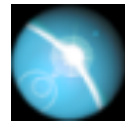




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# WaterML2 O&M profile usage and issues with GML

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# Goal



- Define a profile of Observations & Measurements 2.0 to support exchange of hydrological observations
- Initial focus is in-situ monitoring producing timeseries:
  - Use cases: hydrological monitoring programs, operations (dams, supply), disaster management, national reporting, public dissemination etc.
  - This is WaterML2 part 1
    - Generic timeseries classes
    - Specific implementations using hydrologic requirements
  - Ex-situ out of scope. Will be a future document
- Participating organisations: CSIRO, SDSC (CUAHSI), USGS, Australian Bureau of Meteorology, KISTERS, NOAA, Deltares, German Institute of Hydrology plus others..

# What are we utilizing

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- Defined a conceptual model based on
  - Observations & Measurements 2.0
  - ISO19123 – Coverages
- An XML encoding using
  - OMXML 2.0
  - GML 3.2
  - SWE Common 2.0

# Issues

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1. When to use GML vs. SWE common base types
2. What type of encoding: SWE common style or 'traditional XML'
3. Harmonising model and encoding with coverages (ISO19123 and GML coverage)
4. Issues with GML types
5. Vocabularies and techniques for referencing them

# WaterML2 & GML

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- WaterML2 uses
  - GML geometry elements
  - GML time elements
- GML Plumbing
  - GML id
  - GML referencing using xlink

# GML Geometry

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- No problems
- Relative displacement??

# GML time

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- Implied Precision
  - Would like simple precision mechanism
  - Simple precision might not be enough?

# GML ids

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- Problems
  - Lots of mandatory ids to be managed
  - Would like to inline abbreviated representations of features and possibly other entities
  - Inline the first and reference the rest doesn't fit the needs (and is difficult to implement)



# GML Referencing

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- GML uses Xlink (simple)
- Xlink paradigms come from human-browser interaction model
- WaterML2 would like a machine-machine interaction
- Not enough link context for machine
- Fitting enough link context using Xlink leads to extremely complex best practice rules.

# Some referencing requirements

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- Maintain original source ontology as well as community ontology
- Concise referencing
- Abbreviated referencing
- Decrease use of link resolution