Monitoring South African ocean’s water quality: An OGC SensorThings Application

Geospatial Sensing | Virtual 2020

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Water Quality Monitoring: User Interface

Ammonia at Seavuna Fishing pipeline outlet in milligram per litre

https://www.ocims.gov.za
Water Quality Monitoring: Concept
Water Quality Monitoring: Data & Flow

Data Elements: Metadata for each of: datastreams, properties, sensors, units & things

Example Datastream:

```json
{  
  "name": "WESSA:Blueflag:uMtoti:Escherichia_coli",
  "description": "Escherichia coli at uMtoti Beach",
  "unitOfMeasurement": "cfu per 100mL",
  "observationType": "OM_Measurement",
  "ObservedProperty": "Escherichia coli",
  "Sensor": "WESSA:Blueflag:uMtoti:WaterSample",
  "Thing": "WESSA:Blueflag:uMtoti:Survey"
}
```

Example Thing (partial):

```json
{  
  "name": "WESSA:Blueflag:uMtoti:Survey",
  "description": "uMtoti Beach Blueflag Survey",
  "properties": {
    "category": "Pilot",
    "reference": "Blue Flag",
    "organisation": "WESSA",
    "status": "Inactive",
    "client": "Ethekwini",
    "location_type": "Beach",
    "type": "Survey"
  }
}
```

Data Flow:

- Processor runs a "pipeline" that calls "loaders" - one per monitoring programme - each inheriting from a common generic class.
- Each loader is configured so that monitored data (Excel) & JSON metadata can be parsed.
- A generic "sensorthings_client" handles all requests to/from the actual SensorThingsAPI.
Thank you!