

EDR Analysis

Version: 2021-02-16

Naming

The name makes it seem the API covers the entire environmental domain, but the use-cases supported by the API and the terminology used in the API specification only fit a very narrow subset of the environmental domain. The API only specifies spatiotemporal data retrieval, devolving all information on the environmental characteristic being provided to an informative annex. At the same time, there are many usage areas outside of the environmental domain that have use-cases that would be well supported by this API.

Therefore, we recommend changing the name to either focus on the narrow subset of the environmental domain that is actually covered, or broaden the name to “Spatial Data Retrieval”, “Simple Data Retrieval” or “Spatio-Temporal Data Retrieval”

The argumentation brought for maintaining the term “Environmental” led to reflection on common usages of the term, think we’re rotating around the following meanings of the term “Environmental”:

- a) One’s surroundings, implicit in the Geospatial nature of OGC.
- b) The physical, chemical, and biotic factors one associates with environmental protection and sciences (e.g. Environment Agencies (EPA, EEA)).

The first one is mostly redundant with the geospatial domain, the second is what can be described with the O&M standard.

To our worries on the “Environmental” label - if EDR goes out as "Environmental Data Retrieval", this will most likely seriously set back environmental data provision due to the following:

- Most environmental data requires provision of measurement metadata for correct interpretation, e.g. air quality, water quality, soil data, biodiversity. This is the reason the O&M standard was initially developed. To our experience, the two domains that can do without are meteorology and marine, which has mostly to do with organizational background.
- If OGC propagates an "Environmental Data Retrieval" API, many administrators in environmental agencies will insist on using it, while not understanding its lack of suitability.

To our view, this would be a sad legacy for a well meant standard

Overloading of the word “parameter”

The word “parameter” is used in different contexts, making it difficult to scan and search for:

1. The OpenAPI definition
2. The EDR definition “the values that go into parameter-name”, that is never actually defined, but still used. Other commonly used terms for this are:
 - Characteristic
 - Variable
 - Observed property (or just property)
 - Measurand
 - Analyte.

It seems the second use is core to the standard, but very much overshadowed by the many cases where the first use occurs.

→ overall OGC Observation context : O&M V3 has created ObservationCharacteristics for the express purpose of describing types of observations by their characteristics, would be valuable for users if this were utilized in collection landing page in the informative annex

→ proposed solution:

- provide example utilizing ObservationCharacteristics
- rename parameter-name into something without “parameter” contained, e.g observation-characteristics or something neutral like data-field-name

The parameter “parameter-name”

The spec never defines the semantics of the content of this parameter. The specification does not seem to define what the meaning is of the values that go in there, nor how a client is supposed to find this information.?

It only refers to OpenAPI Specification which specifies what informatic content is to be expected: a list of strings. But not what communities are supposed to do with it. The only hint on this is given in the informative Annex

<http://docs.opengeospatial.org/DRAFTS/19-086.html#collections-metadata-examples>

Potential reuse of ObservationCharacteristics as feature type

E.g. ObservationCharacteristics for mean wind direction could be hosted once by WMO as a featureType, all EDR endpoints could reference. This would be standardized and reusable. We could provide an example of ObservationCharacteristics in an OGC API - Feature endpoint.

Non-standard use of ISO 8601 periods / intervals

We can't find a definition for negative durations, nor for intervals consisting of two durations, as used in the example:

```
"measurementType": {  
    "method": "mean",  
    "period": "-PT10M/PT0M"  
}
```

No Mention of the OGC SensorThings API

While in the intro there is a reflection on how EDR supports the same data as SOS and WCS, it then continues to explain how EDR finally provides an API for this data. There is no mention of the OGC SensorThings API, a long established and well deployed OGC standard that already does much of what EDR does.