

Month 18 meeting – Edimburgh

WP6 Results

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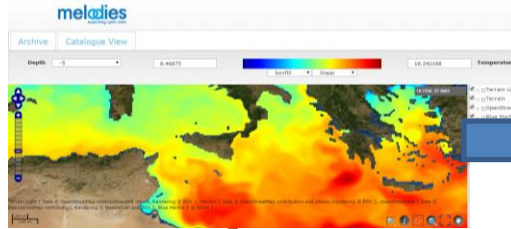
Nino Pace (ACS)

Service delivery: from end user portal to linked data

End user portal catalogue



End user portal



Institutional end users



Data feed



ncWMS
Data Server

Search engines



Linked data user



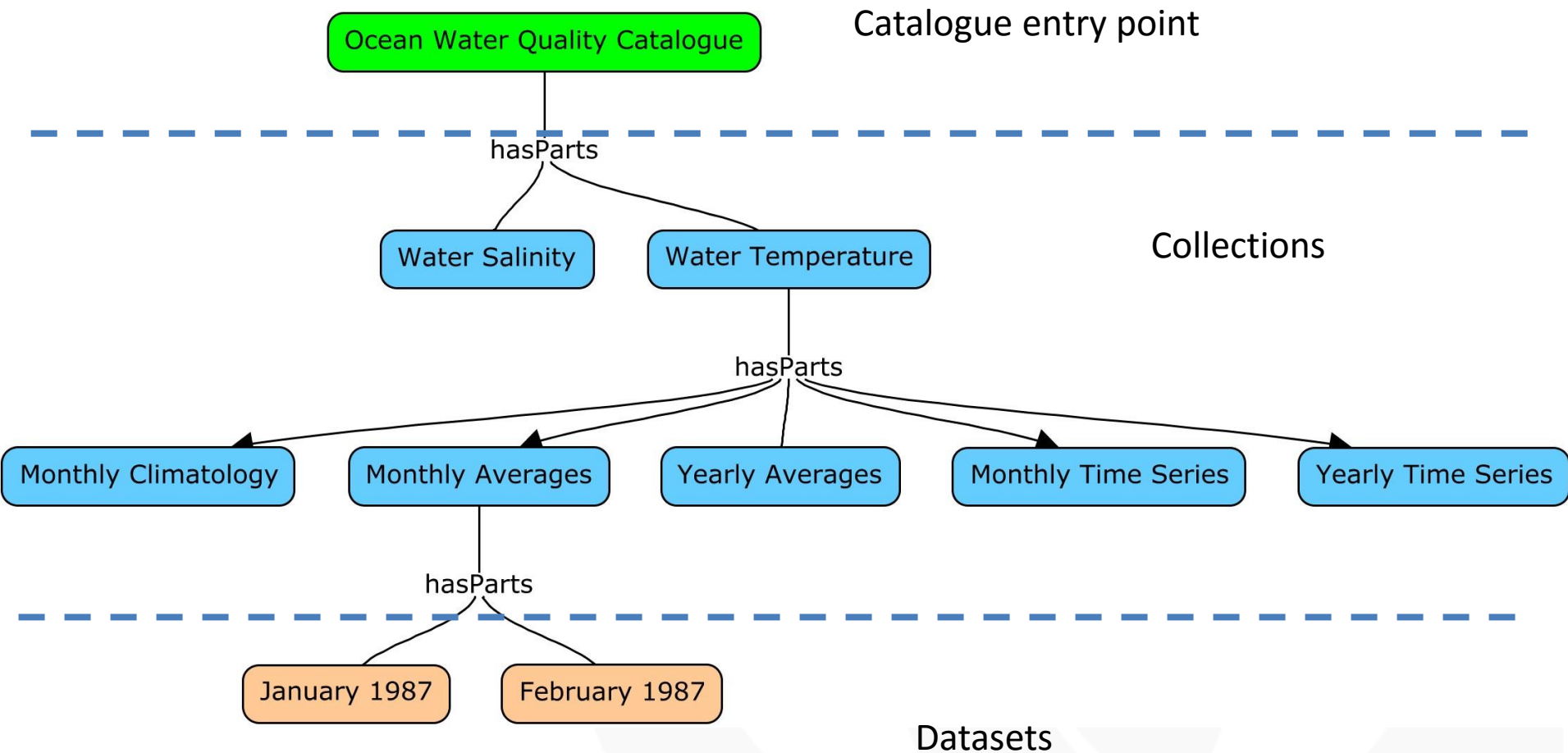
Geo-DCAT / schema.org



Linked Data !

- Guidelines:
 - WP6 raster data are suitable for indexing metadata
 - Adopt DCAT / Geo-DCAT AP
 - Possibility to easily access the actual data via standard accesses, e.g.:
 - Direct download
 - WMS/WCS
 - Hierarchical structure: catalogue->collections->datasets
 - A dataset is the smallest granule that may be accessed (a monthly average map for a given year/month)

Geo-DCAT Structure



Examples: collection part A

```
"@id": "http://melodiesproject.eu/datasets/collections/temperature/1",
"@type": "Dataset",
"title": "Monthly mean temperature map",
"description": "Monthly mean map - temperature produced using Copernicus med mfc toolbox",
"issued": "2015-10-13",
"spatial": {
  "@type": "Location",
  "geometry": "POLYGON((-180 -90, 180 -90, 180 90, -180 90, -180 -90))"
},
"temporal": {
  "@type": "PeriodOfTime",
  "startDate": "1987-01-01",
  "endDate": "2012-12-31"
},
"observedProperties": [{
  "@id": "http://vocab.nerc.ac.uk/collection/P07/current/CFSN0335/",
  "label": "Sea Water Temperature"
}],
```

Examples: collection part B

```
{
  "@type": "Distribution",
  "title": "Web Mapping Server API",
  "dct:type": "dct:Service",
  "title": "WMS preview endpoint",
  "accessURL": "http://melodies-wp6.terradue.com/ncWMS-
1.2/wms?item=layerDetails&layerName=mediterranean_monthly_temperature/votemper&request=GetMetadata",
  "mediaType": "application/xml"
},
"parts": [
http://melodiesproject.eu/datasets/temperature\_1
http://melodiesproject.eu/datasets/temperature\_2
]
```

How to search LOD data

The rationale of this model is to try and start from the links that a user would find useful in a "discovery scenario", trying to answer to questions such as:

1. what data are around that relate to this specific Marine Strategy Directive Chapter ?
2. what data are around about sea surface temperature (etc.) ?
3. what data are around intersecting this AOI / TOI ?
4. what processing was done using this data source (e.g. MyOcean data) as input ?

First Delivery

- Developing environment :
 - Python + NumPy
- Algorithm :
 - Based on the Map/Reduce programming model (papers available on Internet)
- Input Data :
 - From Med MFC, temperature field, Mediterranean Sea, daily mean from years 1987 to 2012 – today about 450 GB, 9490 uncompressed data files
- Output Data :
 - monthly mean map of temperature : 1872 maps, one for each month, each depth layer – total 110 MB in 312 compressed data file
 - average annual mean timeseries of temperature : 6 timeseries, one for each depth layer – some KB...
- Test On Public Cloud : scheduled for 16/oct/2015

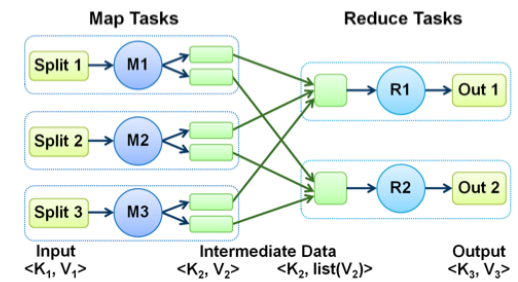
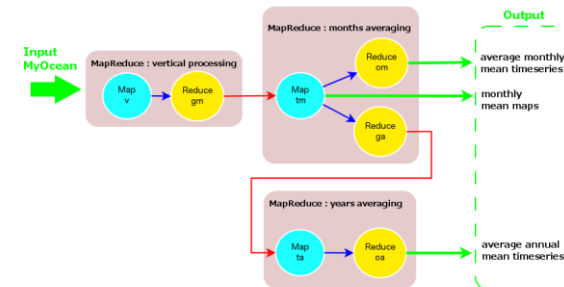


Figure 1: Execution of a MapReduce job.



Ongoing Dev for 2° Delivery

Input Data – now in storage in Cloud :

- From Med MFC :
 - temperature field, Mediterranean Sea, daily mean from years 1987 to 2012 – today about 450 GB, 9490 uncompressed data files
 - salinity field, Mediterranean Sea, daily mean from years 1987 to 1988

Derived Fields (by G. Graffino) :

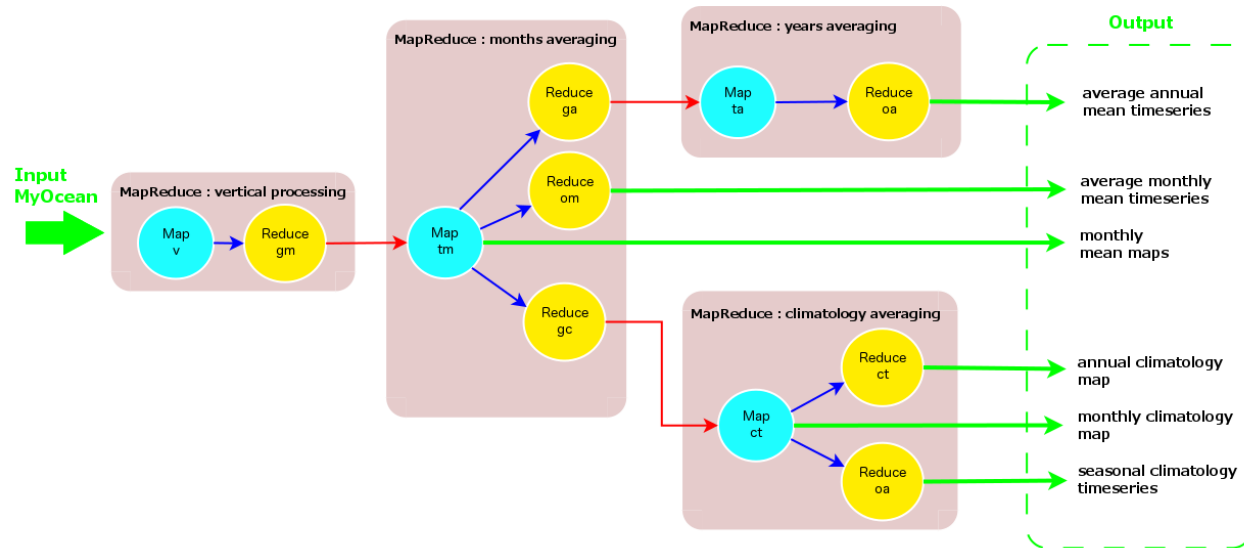
- Density
- Kinetic Energy
- Upwelling

Class of Output Data :

- monthly mean map
- monthly climatology map
- seasonal climatology timeseries
- annual climatology map
- average annual mean timeseries

Metadata :

- title : A succinct description of what is in the dataset
- institution : Specifies where the original data was produced
- source : The method of production of the original data
- comment : Miscellaneous information about the data or methods used to produce it
- references : Published or web-based references that describe the data or methods used to produce it





Thank you!

**<http://melodiesproject.eu>
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