Syntool webservices

coverage

This webservice accepts GET HTTP requests. It queries the Syntool MySQL database to retrieve the time coverage of the registered granules that match a set of constraints. It is used by the Syntool portal web application to show users the years, months and days where data is available for display and finding temporal collocations in the data.

Input parameters

Parameter	Required	Format	Example
products	No	string,string,...	3857_GlobCurrent_L4_geostrophic_streamline, 900913_ARGO_profilers,3857_SMOS_L3_LOCEAN_SSS_raster
extent	No	float,float,float,float	18706892.551797,-21231148.973535,18706892.551797,21231148.973535
patterns	No	string,string,...	,6901687_43,
endianess	No	string	big

products

Only consider granules from the listed products. The supplied parameter is a comma-separated list of product identifiers.

extent

Limit availability computation to granules that intersect the supplied area. The supplied parameter is a comma-separated list of four float values. These values are the coordinates of the area bounding box expressed in the same projection as the Syntool portal (EPSG:3857 for the PiMEP portal). The order of the coordinates is West,South,East,North.

patterns

Ignore granules whose identifier does not match the supplied pattern. The supplied parameter is a comma-separated list of patterns. There must be as many patterns as there are identifiers in the products parameter, listed in the same order. For example with an "A,B,C,D" products value, if only C and D must be filtered using patterns, then the patterns parameter must be ",,patternC,patternD".

endianess

If endianess=big the output will be encoded in big-endian byte order, otherwise little-endian byte order will be used.

Output

The webservice returns a binary blob.

Format of the blob

```
+-----------------+
| Product coverage |
+-----------------+
| 0xFFFFFFFF      |
+-----------------+
| Product coverage |
+-----------------+
|      ...        |
+-----------------+
| 0xFFFFFFFF      |
+-----------------+
| Product coverage |
+-----------------+
```

Product coverage format

```
+----------------------+
| Product index (int32) |
+----------------------+
| Year coverage        |
+----------------------+
|      ...             |
+----------------------+
```

Year coverage format

```
+--------------------+
| year (int32)       |
+--------------------+
| Month coverage x 12 |
+--------------------+
```

Month coverage format

Month coverage is a 32-bit bit field with each bit representing a day of that month (0 means no data available and 1 means at least one granule available). The LSB corresponds to the first day of the month, and the MSB the 32nd day of the month (which should always be 0 since no month has 32 days).

datasets

This webservice accepts GET HTTP requests. It queries the Syntool MySQL database to retrieve information about granules that match a set of constraints. It is used by the Syntool portal web application to fill the detailed timeline and draw data boundaries on the map.

Input parameters

Parameter	Required	Format	Example
callback	No	string	processGranules

minDate	Yes	timestamp	1512141988
maxDate	Yes	timestamp	1512141990
products	No	string,string,...	3857_GlobCurrent_L4_geostrophic_streamline, 900913_ARGO_profilers,3857_SMOS_L3_LOCEAN_SSS_raster
extent	No	float,float,float,float	18706892.551797,-21231148.973535,18706892.551797,21231148.973535
patterns	No	string,string,...	,6901687_43,
dates_only	No		

callback

Callback will be used as a wrapper for the result. For example if callback = "myCallback", the webservice will return "myCallback("+str(result)+")"

minDate

Unix timestamp for the start of the time frame constraint.

maxDate

Unix timestamp for the end of the time frame constraint.

products

Only consider granules from the listed products. The supplied parameter is a comma-separated list of product identifiers.

extent

Limit availability computation to granules that intersect the supplied area. The supplied parameter is a comma-separated list of four float values. These values are the coordinates of the area bounding box expressed in the same projection as the Syntool portal (EPSG:3857 for the PiMEP portal). The order of the coordinates is West,South,East,North.

patterns

Ignore granules whose identifier does not match the supplied pattern. The supplied parameter is a comma-separated list of patterns. There must be as many patterns as there are identifiers in the products parameter, listed in the same order. For example with an "A,B,C,D" products value, if only C and D must be filtered using patterns, then the patterns parameter must be ",,patternC,patternD".

dates_only

If present in the request, the output will contain only the start and end dates of the granules.

Output

The webservice returns a serialized list of dictionaries describing the granules that match the search criteria. The list is wrapped in a callback if one is provided.

The dictionaries describing granules contain a set of entries:

- **features: array of additional features to display when the granule is**

  selected. These features are described using dictionaries with a mandatory "global" key. The "global" value is specific to Syntool and provides information about how the feature must be displayed. Extra keys may be added to provide more details about the granule or the feature (see ARGO example below).

- **polygon: shape of the granule as WKT polygon. Coordinates must be expressed**

  in the same projection as the Syntool portal (EPSG:3857 for PiMEP). For granules with global coverage, POINT(0 0) is used instead.

- **mapMaxZoom: zoom level above which the data representation is not available**

  anymore.

- **uri: path of the data representation files (root of the tiles pyramid,**

  geojson file or full resolution image) relative to the URI of the data server.

- **productId: identifier of the product the granule belongs to (should be one**

  of the identifiers passed in the products input parameter).

- datasetId: identifier of the granule.

- title: label describing the granule.

- **mapBounds: dictionary describing the bounding box of the granule, with**

  coordinates expressed in the same projection as the Syntool portal (EPSG:3857 for PiMEP) using th e following format: {"west": WEST, "east": EAST, "north": NORTH, "south": SOUTH}.

- **resolutions: when appliable, array of the resolutions for which there is a**

  data representation. May also contain some additional information for specific data representations (mask for tiled rasterized altimeter data, not included in PiMEP).

- **start: start of the time coverage of the granule, expressed as a string with**

  the "YYYY-MM-DDThh:mm:ssZ" format.

- **"end": end of the time coverage of the granule, expressed as a string with**

  the "YYYY-MM-DDThh:mm:ssZ" format.

- type: deprecated

- mapMinZoom: deprecated

- point: deprecated

ARGO profiler granule example

```
{ "point": {
    "lat": 4298259.52221,
    "lon": 1925938.13915
},
"mapMinZoom": "0",
"resolutions":[],
"datasetId": "900913_ARGO_profilers-6901846_80",
"end": "2015-05-15T00:03:40",
"title": "6901846_80",
"mapMaxZoom": "0",
"uri": "data/ingested/900913_ARGO_profilers/6901846_80/",
"start": "2015-05-15T00:03:40",
"type": "TRAJECTORY",
"productId": "900913_ARGO_profilers",
"polygon":"POLYGON((1925938.13915 4298259.52221,1925938.13915 4298259.52221,1925938.13915 4298259.52221,1925938.13915 4298259.52221,1925938.13915 4298259.52221))",
"mapBounds": {
    "west":"1925938.13915",
    "east":"1925938.13915",
    "north" :"4298259.52221",
    "south" :"4298259.52221"
}
}
```

Aquarius L3 SSS granule example

```
{ "point": {"lat":0,"lon":0},
 "mapMinZoom":"0",
 "resolutions": "",
 "datasetId": "3857_AQUARIUS_L3_SSS_raster-sss20150512.v4.0cap",
 "end": "2015-05-16T00:00:00",
 "polygon": "POINT(0 0)",
 "title": "sss20150512.v4.0cap",
 "mapMaxZoom": "0",
 "uri": "data/ingested/3857_AQUARIUS_L3_SSS_raster/sss20150512.v4.0cap/imageLayer.png",
 "start":"2015-05-15T00:00:00",
 "type":"IMAGE",
 "productId":"3857_AQUARIUS_L3_SSS_raster",
 "mapBounds": {
   "west": "-20037508.34",
   "east": "20037508.34",
   "north": "20037508.34",
   "south": "-20037508.34"
 }
}
```

Output (dates_only)

The webservice returns a serialized list of start and end unix timestamp pair for each granule that match the search criteria. The list is wrapped in a callback if one is provided.

Example

```
[
  [1429785720, 1429786079],
  [1429791840, 1429792198],
  [1429801840, 1429802198]
]
```

nearest

This webservice accepts GET HTTP requests. It queries the Syntool MySQL database to retrieve information about granules that match a set of constraints. It is used by the Syntool portal web application to fill the detailed timeline and draw data boundaries on the map.

This webservice accepts GET HTTP requests. It queries the Syntool MySQL database to find the datetime of a granule matching a set of constraints while staying as close as possible to a reference time. It is used by the Syntool portal web application to automatically center the timeline on a datetime where data is available.

Input parameters

Parameter	Required	Format	Example
date	Yes	timestamp	1512141988
products	No	string,string,...	3857_GlobCurrent_L4_geostrophic_streamline, 900913_ARGO_profilers,3857_SMOS_L3_LOCEAN_SSS_raster
extent	No	float,float,float,float	18706892.551797,-21231148.973535,18706892.551797,21231148.973535

pattern s	No	string,string,...	,6901687_43,
past	No		
present	No		
future	No		

date

Unix timestamp of the reference datetime.

products

Only consider granules from the listed products. The supplied parameter is a comma-separated list of product identifiers.

extent

Limit availability computation to granules that intersect the supplied area. The supplied parameter is a comma-separated list of four float values. These values are the coordinates of the area bounding box expressed in the same projection as the Syntool portal (EPSG:3857 for the PiMEP portal). The order of the coordinates is West,South,East,North.

patterns

Ignore granules whose identifier does not match the supplied pattern. The supplied parameter is a comma-separated list of patterns. There must be as many patterns as there are identifiers in the products parameter, listed in the same order. For example with an "A,B,C,D" products value, if only C and D must be filtered using patterns, then the patterns parameter must be ",,patternC,patternD".

past

If present in the request, tells the webservice that it must look for the nearest granule in the past.

present

If present in the request, tells the webservice that granule in the present (ie. with timestamps equal to the reference datetime) are also acceptable, they are ignored by default.

future

If present in the request, tells the webservice that it must look for the nearest granule in the future.

Output

The webservice returns a serialized dictionary which contains:

> • past entry when past parameter is given

> • future entry when future parameter is given

Each entry's value is a list of optional timestamps, one for each product in the products parameter. Each element of the list is the timestamp of the granule matching the constraints which is the closest to the reference time, or "null" if none were found.