# Region VI Capacity Building
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# Pilot registration of Stations in OSCAR

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World Meteorological Organization

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- Aim: why using OSCAR Platform API?

- WHOS DAB Service interfaces

- Use-cases using the OSCAR Platform API

- Live and interactive OSCAR Platform API demonstration

The OSCAR API allows to interact with OSCAR Platform using a computer program and it can be useful to:

- Speed up the working process (e.g. if you have to register or update a large number of stations)
- Use the retrieved information in different programs or tools (e.g. to programmatically get and access a set of stations)
- Work with JSON and/or WIGOS Metadata XML formats

WHOS DAB exposes the following main service interfaces:

- OGC - Catalogue Service for the Web (CSW)
- OpenSearch
- OAI-PMH
- CUAHSI Water One Flow (WOF)
- API based on Observations & Measurements
- etc.

WIGOS Metadata are available through the OAI-PMH interface at:

http://whos.geodab.eu/gs-service/services/essi/token/test/view/whos-plata/oaipmh?verb=ListRecords&metadataPrefix=WIGOS-1.0

# USE CASE #1: Use the OSCAR API to search and find information

- Example 1: Get all the sations coming from Antarctic region

  Endpoint available:

  - */search/station*: allows to get stations using search constraints (e.g. country of a station, observed variables, geographic information). The returned information is encoded in **JSON format**.

  - Parameter used: ***wmoRegion***

  - Operation: **HTTP GET**

  https://oscardepl.wmo.int/surface/rest/api/search/station?wmoRegion=antarctica

- Example 2: Get all the stations located in Italy

  Endpoint available:

  - */search/station*: allows to get stations using search constraints (e.g. country of a station, observed variables, geographic information). The returned information is encoded in **JSON format**.
  - Parameter used: *territoryName*
  - Operation: **HTTP GET**

https://oscardepl.wmo.int/surface/rest/api/search/station?territoryName=ITA

- Example 3: Get all the stations belonging to World Hydrological Cycle Observing System «WHYCOS» programme affiliation

  Endpoint available:

  - */search/station*: allows to get stations using search constraints (e.g. country of a station, observed variables, geographic information). The returned information is encoded in **JSON format**.
  - Parameter used: ***programAffiliation***
  - Operation: **HTTP GET**

  https://oscardepl.wmo.int/surface/rest/api/search/station?programAffiliation=WHYCOS

- Example 4: Get all the stations/platforms at lake/river surface, at fixed position

    Endpoint available:

    - */search/station*: allows to get stations using search constraints (e.g. country of a station, observed variables, geographic information). The returned information is encoded in **JSON format**.
    - Parameter used: *facilityType*
    - Operation: **HTTP GET**

https://oscardepl.wmo.int/surface/rest/api/search/station?facilityType=lakeRiverFixed

- Example 5: Get all the stations/platforms at lake/river surface, at fixed position in Europe

  Endpoint available:

  - */search/station*: allows to get stations using search constraints (e.g. country of a station, observed variables, geographic information). The returned information is encoded in **JSON format**.
  - Parameter used: **wmoRegion, facilityType**
  - Operation: **HTTP GET**

https://oscardepl.wmo.int/surface/rest/api/search/station?wmoRegion=europe&facilityType=lakeRiverFixed

- Example 6: Get a single station/platform using a WIGOS identifier (WSI)

    Endpoint available:

    - *wmd/download/*: allows to get stations the WIGOS id. The returned information is encoded in **WIGOS XML format**.

    - Parameter used: {WSI}

    - Operation: **HTTP GET**

    https://oscardepl.wmo.int/surface/rest/api/wmd/download/0-21016-4203-123456

- Example 1: Upload a new station (without the token)
  Endpoint available:
  - *wmd/upload*: allows to upload a new station encoded in WIGOS XML format.
  - Operation: **HTTP POST**

**N.B. To upload a station you need a token in order to be authorized by the OSCAR Platform otherwise...**

*HTML Error page Response*

- Example 2: Upload a new station (with missing Header metadata element information)

  Endpoint available:
  - */wmd/upload*: allows to upload a new station encoded in WIGOS XML format.
  - Operation: **HTTP POST**

**JSON Response:**

{

   "id": 805293,

   "xmlStatus": "INVALID_SCHEMA",

   "logs": "The XML has been parsed with the following exceptions/issues:.\nREF_1: Received XML file has invalid format. Validation against the XSD file failed. This error includes JAXB exception message, which caused due to invalid format of the XML according to the XSD file.\n\n javax.xml.bind.UnmarshalException\n - with linked exception:\n[org.xml.sax.SAXParseException; lineNumber: 15; columnNumber: 20; cvc-complex-type.2.4.a: Invalid content was found starting with element 'wmdr:facility'. One of '{\"http://def.wmo.int/wmdr/2017\":headerInformation}' is expected.]\n"

}

- Example 3: Upload a new station (wigos id:*0-21016-4203-cnrheader*)
  Endpoint available:
  - */wmd/upload*: allows to upload a new station encoded in WIGOS XML format.
  - Operation: **HTTP POST**

**JSON Response:**

{

   "id": 805294,

   "xmlStatus": "SUCCESS",

   "logs": ""

}

Check succesfully upload:
https://oscardepl.wmo.int/surface/rest/api/wmd/download/0-21016-4203-cnrheader

# USE CASE #3: Use the API to edit a station already available in OSCAR Platform

- Example 1: Edit the station (geolocation or others) with WIGOS id: *0-21016-4203-cnrheader*
  Endpoint available:
  - */wmd/upload*: allows to edit an available station encoded in WIGOS XML format.
  - Operation: **HTTP POST**

**JSON Response:**

```
{
    "id": 805295,
    "xmlStatus": "SUCCESS",
    "logs": ""
}
```

Check succesfully edited the station:
https://oscardepl.wmo.int/surface/rest/api/wmd/download/0-21016-4203-cnrheader

Thank You
Merci

Contact Us: **whos@wmo.int**