

# SAAS DEV DOC

## A process Life cycle

---

### Creation

- A process is created under a project which itself is created from a solution.
- For a process, the user submit his area of interest and the name of the process for creation

### Picking the Dataset

- A process dataset options are inherited from the solution that the project ha been created from.
- Dataset options include at least one or more of the following types:
  - Geo-data
    - Draw on the map
    - Upload a file that contain geo-data
      - In this case we are looking for the first occurrence of a polygon in the file.
  - Image with a bounding box
    - Either thro Link or Upload
  - Geotiff
    - Either thro Link or Upload
  - Previous Dataset
    - Select from the user previous Dataset.

### Storing the data

- Based on the type of dataset the data stored can include
  - Link ( Link to a Geotiff/image ...)
  - File Field (can handle Geotiff/image ...)
  - Additional coordinates (to geo tag the image)
  - polygon

### Process Preparing

Once the process is submitted with the AOI and the process name, the process enter the phase of preparation

#### Stage One:

- Updating the current situation of the process to be: 'p' → preparing
- Sending a post request to the mlops\_server including:
  - the dataset type
  - dataset file URL
  - polygon
  - additional coordinates
  - solution code
  - tiles provider name
- Receiving the post request on the mlops\_server
  - processing the data
    - if the dataset type is a utiff/uimgc (upload a tiff or upload an image with coordinates) → the link field will be updated to be the url of the dataset on the SAAS-UX part, and the datatype choice will be updated to ltiff/limgc

*You may wonder why in the first place there is a utiff/uimgc choices, well for the mlops\_server in the current situation the routes between the SAAS-UX and mlops\_server are thro http routes.*

*In another environment (like having a shared storage) a utiff/uimgc will be a valid unique options to be set, and have their own processing mechanism*
  - A clone version at mlops\_server part of the process will be created based on the received data.
  - the id of cloned version of the process will be send as a response of the post request by the SAAS-UX
- Dealing with the response at the SAAS-UX part
  - in case of failing, the current situation of the process will be updated to be: 'pf' → preparation failed.
  - else the id of the cloned version of the process will be stored for rout securing.

#### Stage two:

At the mlops\_server part a celery task will be scheduled to prepare the process, here is the preparations steps :

- Dataset preparation based on the dataset choice :
  - Geo-data
    - Download the tiles of the bbox contouring the AOI as tiff
    - Save the tiles in the dataset field
    - Store the bbox in the polygon field based on the dataset
    - preparation complete
  - Link to a tiff or an image
    - Download the content & store it in the dataset field
    - Convert to geotiff WGS
      - if its a geotiff link just project to WGS
    - Store the bbox in the polygon field based on the dataset
    - preparation complete
  - we won't cover now the umigc and the utiff
- Calculating the area
  - based on the geotiff file we calculate the number of the non-null pixels and multiply by the pixel scale
  - results in km2

### **Stage three:**

After the stage one (on submission), a status fetcher method is called upon the project page refreshing.

once the method return True the stage three is triggered

- Dataset file will be fetched and stored
- All the modified fields from the cloned process will be taken into account and saved in the original process
- Fees calculation based on the area provided by the cloned process and the pricing of 1km2 inherited from the solution.
- the process situation is updated to: 'r' → ready to infer

### **Process Run**

The user can trigger the inference of his process once he have the sufficient amount in his balance to runt it.

once triggered a bill will be created and the amount will be taken from the user balance.