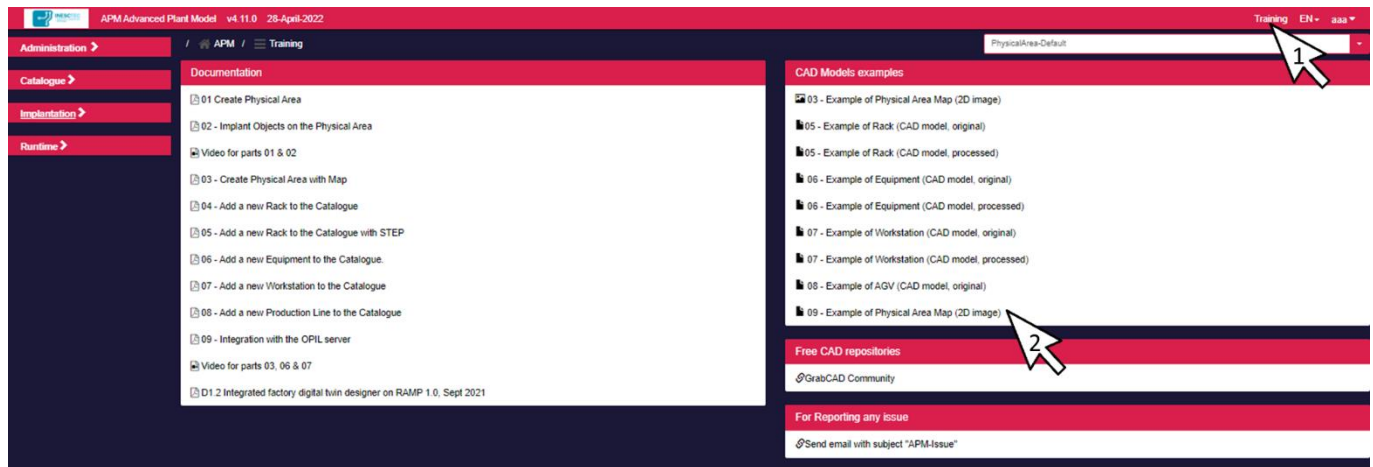The APM lets you model a given manufacturing area and export the data in a compatible format with the OPIL server. The first thing you should do is to create a "Physical Area" in the APM. You should supply a 2D image of the target area.

1. Go to "**Training**" section and download the image with the name *09 - Example of Physical Area Map (2D image).*

2. Go to "**Implantation / Physical Areas**". Press "**New Physical Area**" button (top right in the above screen)
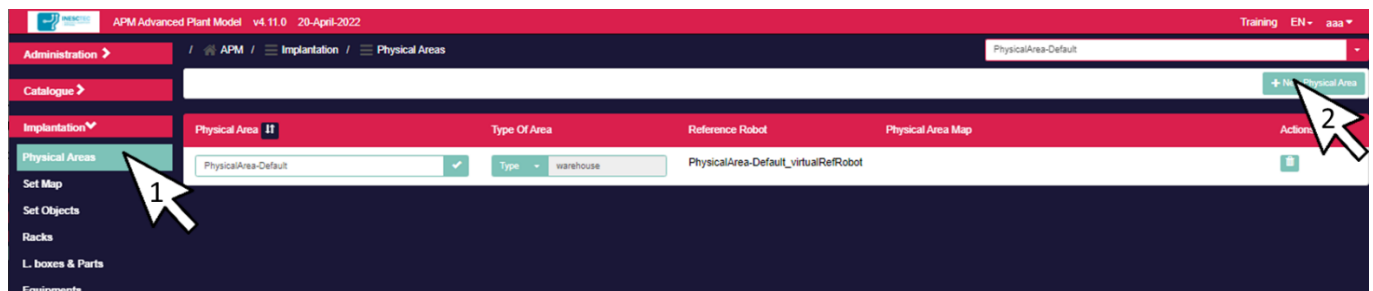

- Supply an **identifier** (e.g. IILAB)
- Specify the **type** (warehouse or assembly line)
- Press "**Map / Select file**" button
- Supply a .png file containing the map for the physical area. For this example, was used the image downloaded in step 1, that is available in the training section with the name *09 - Example of Physical Area Map (2D image).*
- Identify the scale of the map: how many meters correspond to a pixel. The scale of the map in this example is 0.05.
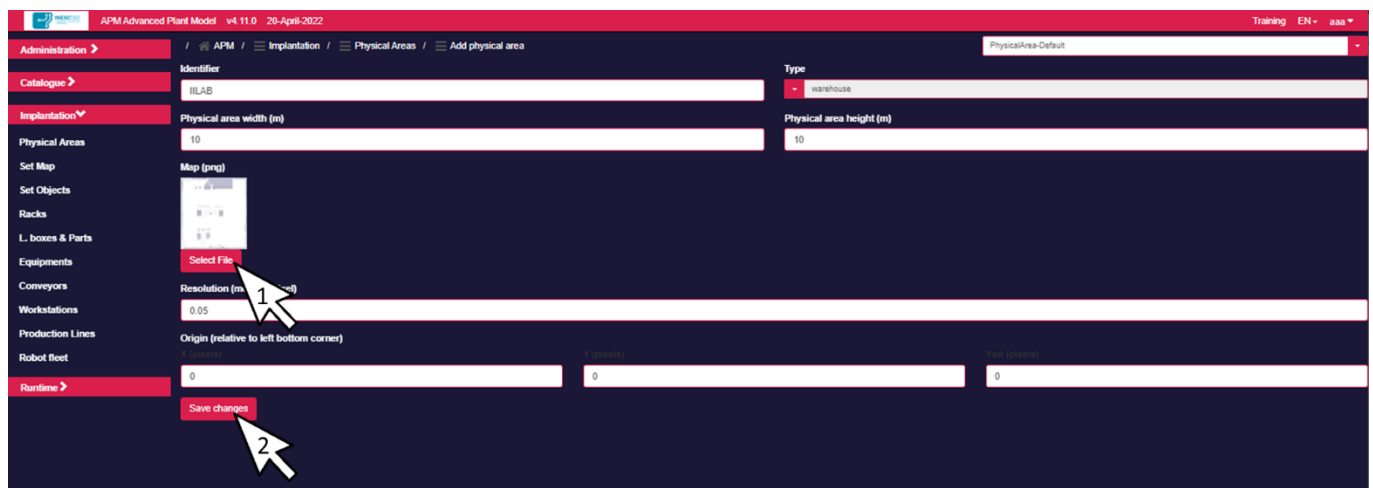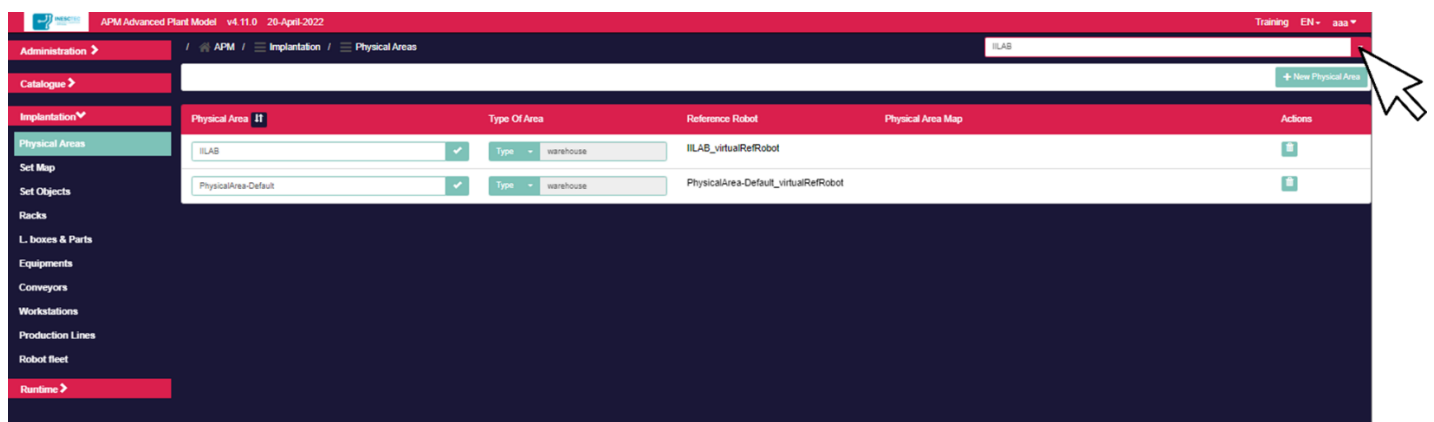

- Press "**Save changes**"

3. Confirm the creation of the physical area.
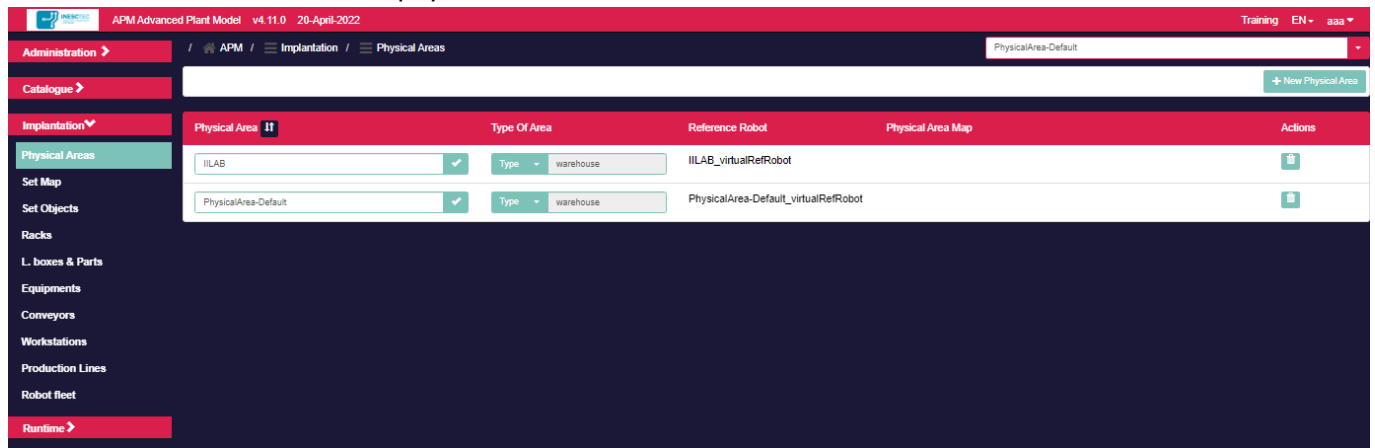
4. Select it so that you start modelling this new physical area (press the combo box on the top right).


5. Go to **"Implantation / Set Objects"**. This is the place where you will implant objects on the Physical Area.

- The grid is configured to show 1 x 1 meters of area.
- You can zoom in or zoom out by pressing the Zoom button.
- You can move in the area by pressing the fours Pan buttons.

The Model of a given Physical Area is built by selecting objects defined on the Catalogue and adding them to the Physical Area.

6. Press the right button in the mouse, you'll get options that let you select an object from the Catalogue
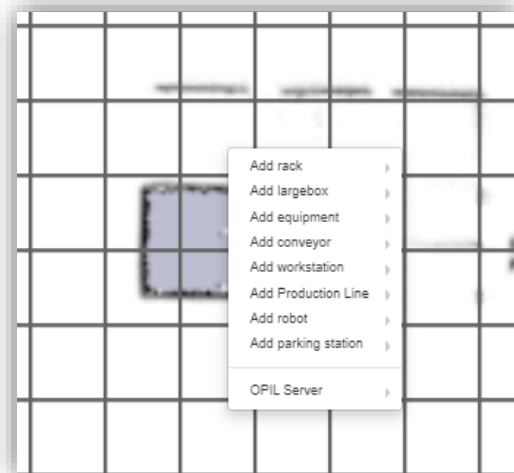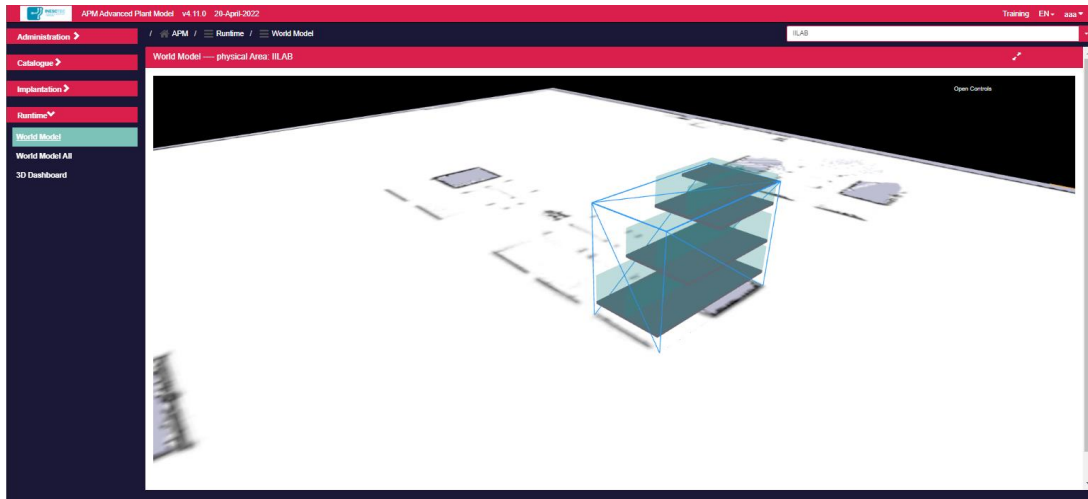

7. Select one of the objects (e.g. rack / TestSprint3 1410 x 2800), a red rectangle will appear in the working space

- You can now select the object and move it in the working area

8. You can clone, rename, rotate and delete the object by selecting it and press the right button in the mouse
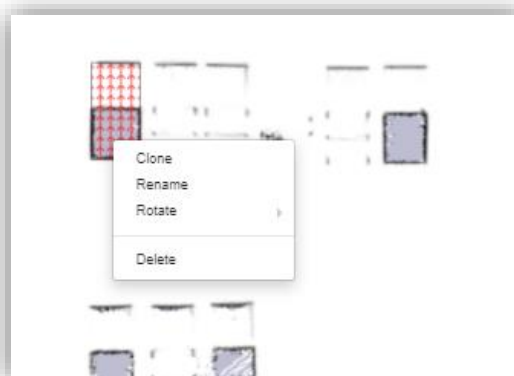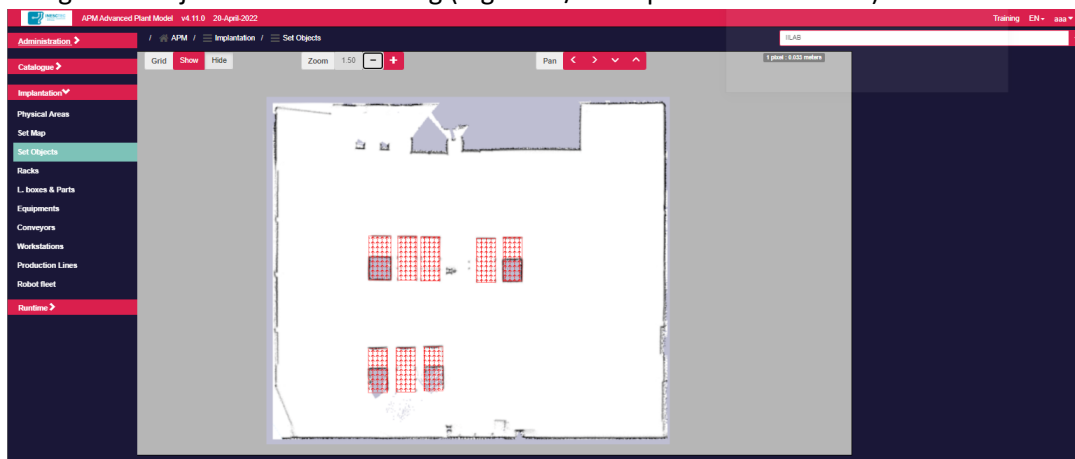
9. Go to "**Runtime / World Model**", a 3D visualization of the Model created so far is shown


- You can zoom in and out by using the mouse wheel
- You can change the viewing perspective by selecting the left button in the mouse and moving the mouse around
- You can also press the right button in the mouse and move the mouse

10. Go to **"Implantation / Set Objects"** and complete the digital representation of the Physical Area by instantiating more objects from the Catalog (e.g. rack / TestSprint3 1210 x 2800).

11. Go to **"Runtime / World Model"**, a 3D visualization of the Model created so far is shown
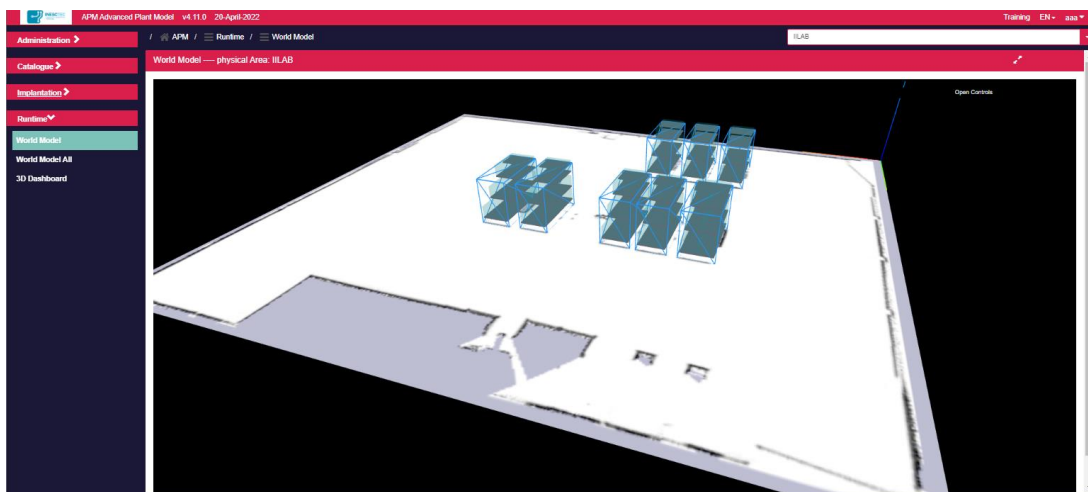
12. Go to **"Implantation / Set Objects"**. Generate the files that allows the integration with the OPIL server.

- Press the right mouse button, under the menu item "OPIL server" and you will get options that allow you to download the files *layout_map_annotations.ini*, *layout_map_image.png* and *layout_map.yaml*.
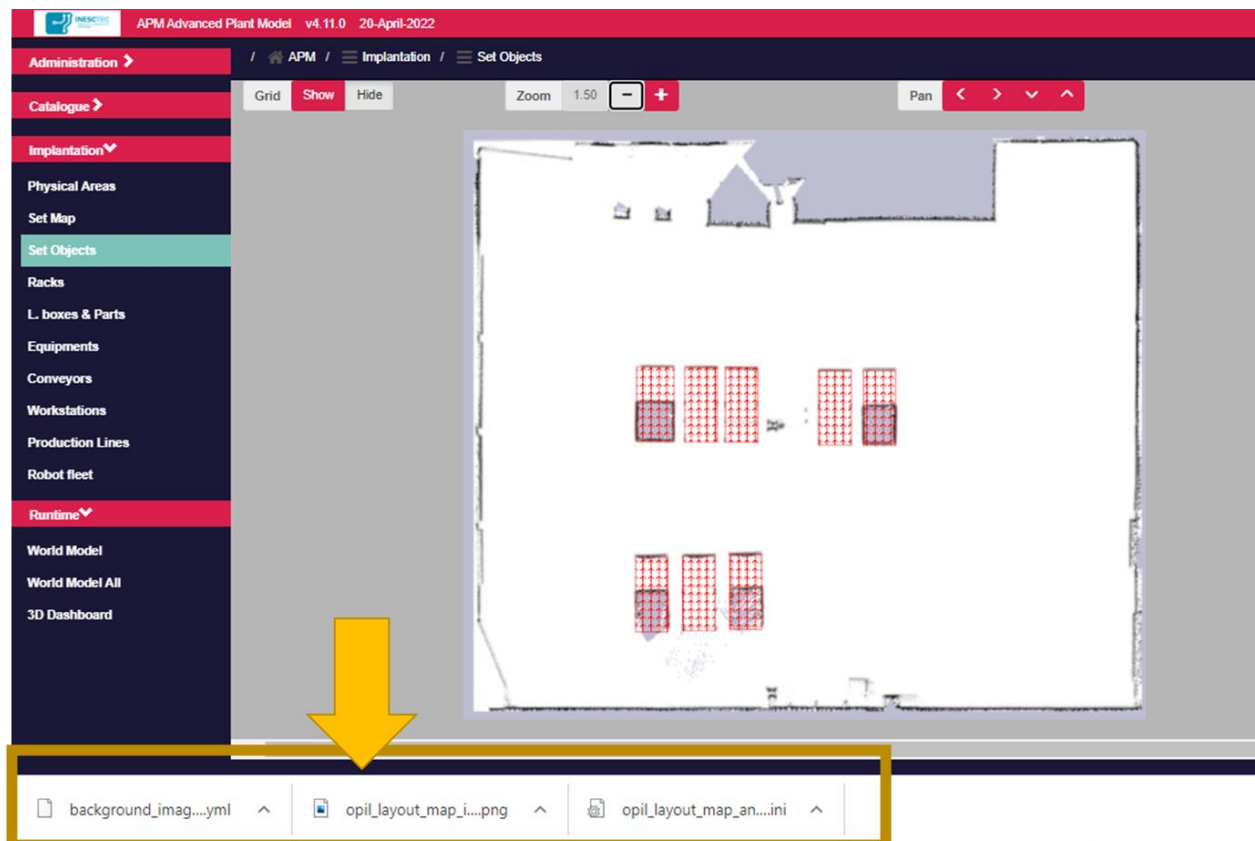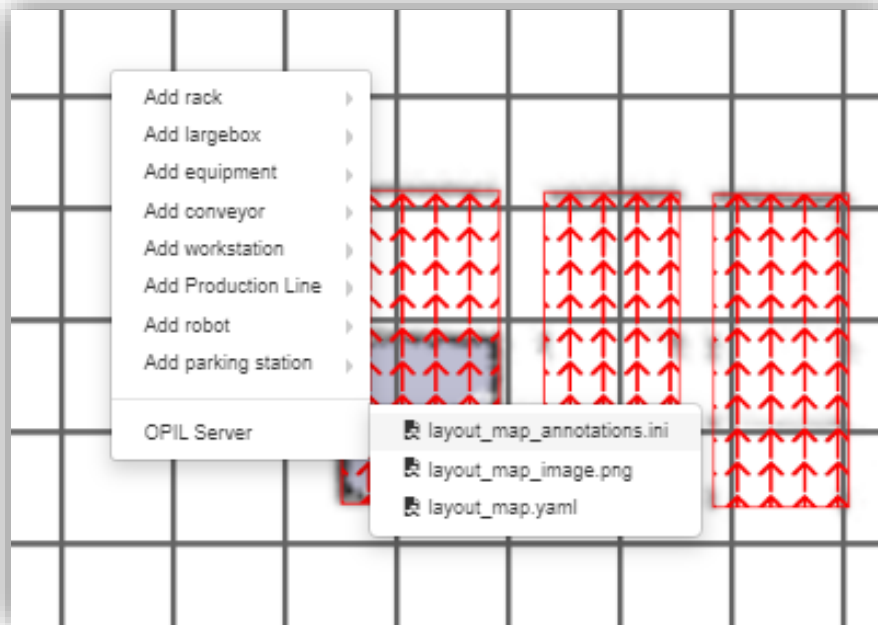
13. In this training example, the result will be as follows:

- opil_layout_map_annotations.ini

```
opil_layout_map_annotations (4).ini
1
2      # annotations.ini file authomatically generated by the APM on 2022-04-29T11:53:30.580672200
3    [Rack.TestSprint3 1210 x 2800]
4      point_x = 10.59826086956521
5      point_y = 4.77673913043478
6      theta = 270.0
7      distance = 0.4
8
9    [Rack.TestSprint3 1210 x 2800]
10     point_x = 10.43999999999992
11     point_y = 11.777941176470584
12     theta = 270.0
13     distance = 0.4
14
15   [Rack.TestSprint3 1210 x 2800]
16     point_x = 15.61999999999999
17     point_y = 11.654999999999996
18     theta = 270.0
19     distance = 0.4
20
21   [Rack.TestSprint3 1210 x 2800]
22     point_x = 7.07652173913043
23     point_y = 4.668043478260868
24     theta = 270.0
25     distance = 0.4
26
27   [Rack.TestSprint3 1210 x 2800]
28     point_x = 8.83739130434782
29     point_y = 4.711521739130432
30     theta = 270.0
31     distance = 0.4
32
33   [Rack.TestSprint3 1410 x 2800]
34     point_x = 7.211764705882346
35     point_y = 11.810294117647057
36     theta = 270.0
37     distance = 0.4
38
39   [Rack.TestSprint3 1210 x 2800]
40     point_x = 13.93999999999999
41     point_y = 11.674999999999997
42     theta = 270.0
43     distance = 0.4
44
45   [Rack.TestSprint3 1210 x 2800]
46     point_x = 8.925294117647052
47     point_y = 11.792647058823526
48     theta = 270.0
49     distance = 0.4
50
51
```

- files layout_map_annotations.ini

```
background_image.yml
1    # Authomatically generated by the APM on 2022-04-28T17:22:41.490940100
2    image: background_image.png
3    resolution: 0.05
4    origin: [0.0, 0.0, 0.0]
5    negate: 0
6    occupied_thresh: 0.65
7    free_thresh: 0.196
8
```

- opil_layout_map_image.png