**Flight plan**

**Step #1: Create a polygona on a map and get the coordinate.**

Done:

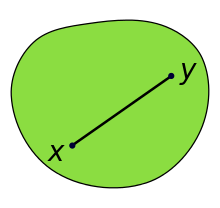
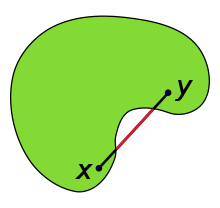
* Create a new page on Vue to do flight plans.
* Could add point.

#TODO: Prevent points from being sent if less than 3

**Step #2: Send the GPS coordinates to the server with the python code.**

#TODO: No idea yet

**Step #3: On python, with the coordinates and the distance between to line create a path.**

**Divide the problem in two:**

* Convex figures (convex in the mathematical sense, [Convex set - Wikipedia](https://en.wikipedia.org/wiki/Convex_set))
* Non-convex figures

**Convex forms:**

Hypothesis: The 2 minimums distance between 3 points are the edges of our surface. (#TODO: Verify in theory if it’s correct)

So now, we will take the ***longest side*** and its ***perpendicular***. And create a grid pattern of the aera perpendicular to our grid pattern.

#QUESTION: longest side or longest distance between 2 points? Which one will make the flight plan the smaller possible?

We’ll choose the **distance** between 2 lines in the program in meters.

To calculate the distance between two gps points we’ll use the client geopi ([geopy · PyPI](https://pypi.org/project/geopy/)) with the function distance.distance(pt1, pt2).

The points of our flight plan will be the crossing of each line or the centre of each cell.

How to find the point on the edge of the polygon?

* We can use a function like shapely.geometry but it’s very costly in time (seem like not working with as much precision)

Question:

* How to do a grid pattern?
* Take the longer distance of the polygona and the perpendicular.

Some sources:

* Study a bit of topology (mathematic) [Convex set - Wikipedia](https://en.wikipedia.org/wiki/Convex_set) // [Connexité (mathématiques) — Wikipédia (wikipedia.org)](https://fr.wikipedia.org/wiki/Connexit%C3%A9_(math%C3%A9matiques))