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## Tracking vessels with Python

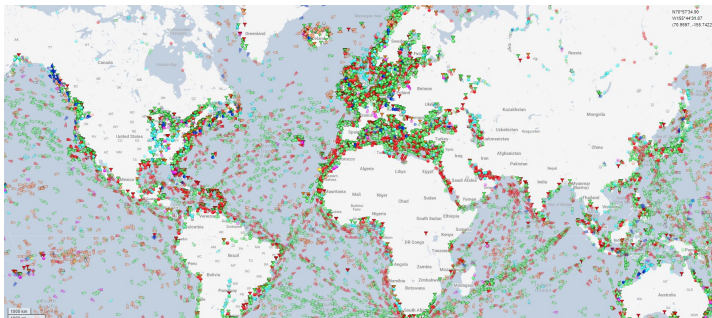


# Tracking vessels is crucial

Drug trafficking, poaching, arms deliveries,  
violations of embargos....

Vessels and cargos an ideal way of transporting  
large quantities of goods.

They have AIS transponders and are supposed to  
send their position.



OpenFacto<sup>9</sup>

## Libya: Turkey's shadow arms deliveries



## An example of impact

OpenFacto released in june its [first long form investigative report](#) on detecting arms embargo violations using open sources techniques :

### Turkey's Shadow Arms Deliveries

One of the group mentioned in our report was placed under sanctions in september 2020



# 1. Problems

**But for some reasons, it can be time and money consuming....**

- **Long period**  
Vessels are...slow
- **Expensive**  
Websites are often free but have paid options to log historical data.
- **Lack of features**  
Alarm on specific events could be a good idea...

# Python to the rescue!

- A webpage can be scraped...
- even a beginner can achieve simple  
scraping tasks in python
- Code doesn't have to be cutting-edge to  
work

# Let's try together!

in three steps...

- A simple script to scrape one vessel
- A function based on this script to scrape several vessels at one time
- A gift from OpenFacto : a more complex tools with alarms.



## Hint

We'll use Jupyter Notebook with Python3

Some extra libraries will be needed : Pandas, Requests, beautifulsoup...



## 2. Code 1

We want to scrape the position of a vessel called **Motivation D** on vesselfinder.

- **What**  
Timestamp, gps position, draught, heading, speed....
- **What for**  
Create a csv file to be plotted on a map.
- **When**  
The script should be played every hour....



## What we did

- A simple yet functional script
- One boat
- We can trigger it using the scheduler of our computer
- We can export this file to openstreetmap!





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## What we could do...

- Use it for several vessels...
- Allow our user to easily add/remove ships....



## 2. Code 2

We want to scrape the position of several vessels on vesselfinder, using a spreadsheet.

- **What**  
Timestamp, gps position, draught, heading, speed....
- **What for**  
Create a csv file to be plotted on a map.
- **When**  
The script should be played every hour....
- **How**  
Upcycling what we already created



## What we did

- A more complex script
- We re-used our 1st script
- For as many ships as we want
- Taking care of APIs
- Taking care of our users....



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## What could be cool?

- Alarms (mail....)
- Triggers (Dest and ETA changes, Draught changes)....
- Because we are lazy and pragmatical!



## 2. Code 3

A gift for you....

- **What**  
Timestamp, gps position, draught, heading, speed....
- **What for**  
Create a csv file to be plotted on a map.
- **When**  
The script should be played every hour....
- **With...**  
Alarms and triggers!!!

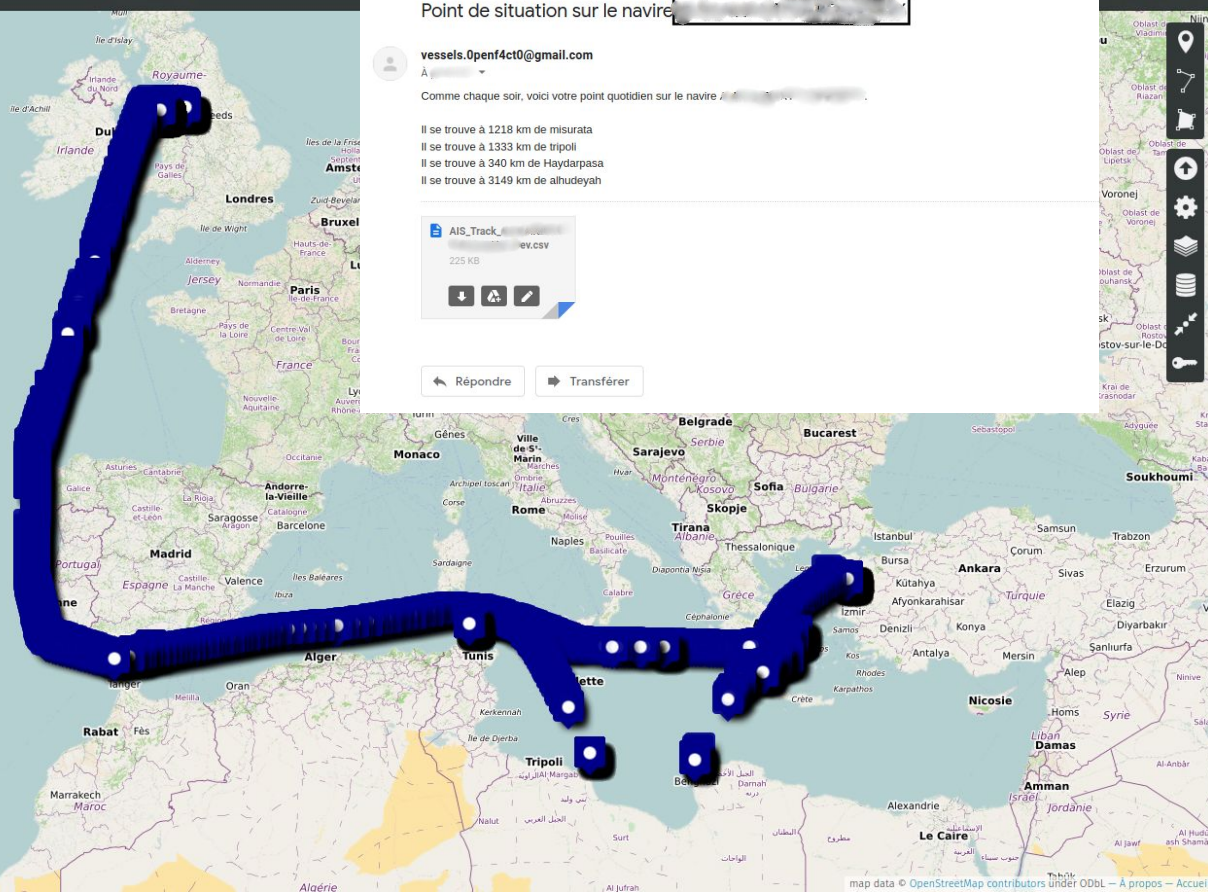


## Where to deploy?

- A [Nabaztag!](#)
- Or a simple [raspberry Pi Zero](#)
- [PythonAnywhere](#)
- Whatever server you like....



300 km  
200 mi



## Point de situation sur le navire



vessels.Openf4ct0@gmail.com

À [redacted]

Comme chaque soir, voici votre point quotidien sur le navire [redacted]

Il se trouve à 1218 km de misurata  
Il se trouve à 1333 km de tripoli  
Il se trouve à 340 km de Haydarpasa  
Il se trouve à 3149 km de alhudeyah



AIS\_Track\_ [redacted].ev.csv

225 KB



Répondre

Transférer



Fermer

Choisir le calque de l'élément

Calque 1

nom

description ?

Date

2020-06-01

Draught

3.0 m

Heading

125.0°

ID

13

Last Acquisition

2020-06-01 13:52:31

Official Dest

GNCKY

Official ETA

Jun 17, 12:00

Speed

4.7 kn

Time (UTC)

12:10

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**Thank you!**



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# OpenFacto♂

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