WHO Hackathon on COVID-19

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1- Background and problem:

The World Health Organization (WHO) on Monday (March 16th) called for "a test for every suspected case" of coronavirus [1]

At present in Africa, it is quite difficult to accurately identify people who have been in contact with a Covid-19 patient; The authorities must, therefore, rely on the patient's story and conduct field investigations to trace the patient's journey.

This becomes more difficult he has been to public places (Bank, Supermarket, ...) or has taken public transport: Because of promiscuity, these are places where contamination is more easily done and because of mobility, it is almost impossible to find a vehicle that has transported a contaminated patient, or even people who have used that same vehicle.

2- Solution: SMS to quickly reassemble the contamination chain

When a person borrows a transit vehicle, he registers the vehicle in a database by sending its registration number by SMS to a short number dedicated to this purpose; for public places, he will specify the name and address of the place.

The collected data is integrated into processing algorithms (storage, search, sorting, etc.) in the form of an Application Programming Interface (API), which will make it accessible to related information systems such as those of the police or telecommunication operators.

A special algorithm, based on machine learning, will optimize the matching between the different variations of addresses used to indicate the same location.

When an individual is tested positive, the authorities consult the system to see what places they have visited and which transit vehicles they have used the previous 14 days, as well as the phone number of all persons who have used the same vehicle as the patient or frequented the same places.

Therefore, these people receive a message stating that they have been in contact with a Covid-19 carrier, and must therefore self-isolate and call the dedicated emergency number, or go to the nearest

screening centre (the address is then indicated to them according to their position, or the addresses of all the screening centres are transmitted to them in the message).

The places visited can be easily geolocated for sanitation, however, drivers of public transport vehicles will have to register with their phone number and vehicles' registration number in the system so that they too can be quickly informed if they have been in contact with a confirmed case so that they themselves can be screened and their vehicles can be disinfected.

On the other hand, mobile operators can provide the authorities with a map of the route travelled by the confirmed case by analyzing the different positions of the signal of its phone during the last 14 days. This will come in addition to data from our solution to enable the delineation of high-risk areas where targeted prevention actions will need to be carried out.

3- Strengths:

- The development requires low financial and time resources
- Simple technical deployment
- A solution suitable for African countries because it does not require a smartphone or an internet connection for users

4- Expected impact:

Suspicious cases will be quickly identified, isolated (to reduce the risk of virus spread), and then tested for the early management of confirmed cases in order to improve their prognosis.

Ref: 1. https://www.france24.com/fr/20200317-coronavirus-l-oms-appelle-%C3%A0-effectuer-un-test-pour-chaque-cas-suspect

5- Project Phase: Ideation