

Technology against Covid-19



The restriction of free movement, retail sale and other services has had a strong economic impact. Tech solutions are one of very few options which will allow us to return to a (new) normal way of life soon and help us prepare for the potential second wave of coronavirus.

There are different approaches and solutions already present in some countries like Poland and Slovakia, where apps assist authorities in confirming that individuals who should be in quarantine are remaining so by randomly asking quarantined users to take a selfie and upload. If they do not do so within 20 minutes of the request, authorities are notified. Singapore has asked its citizens to download an app which uses Bluetooth to track whether they've been near anyone diagnosed with the virus, and Taiwan has introduced "electronic fences" which alert police if suspected patients leave their homes.

Smart Quarantine

The Czech Republic sees the 'Smart Quarantine' as a key tool in slowing the infection rate of the coronavirus epidemic. The main objective of this approach is to limit the spreading of the virus through the quick and efficient identification of contacts of infected people which will serve to replace the national lock-down.

Smart Quarantine was developed in partnership with a group of Czech IT companies associated with the COVID19CZ initiative to which Dateio belongs to. The group is helping to decrease the impact of the coronavirus pandemic in terms of health and economics in various fields and projects.

The project of Smart Quarantine involves tracing encountered contacts from the previous 5 days of people who test positive for the virus. To maximize identification, a so-called “memory map” is created with the help of banking payment data and data of mobile phone operators. GDPR compliance is ensured as the person first gives their consent for usage of localization data, if the consent is not given, tracing is based only on what the person recalls spontaneously. Data are disposed of within 6 hours after the discussion. All data are automatically recorded in a map and the Regional Hygiene Authority operator walks through the map and works with the infected person to help them remember as many encounters as possible.

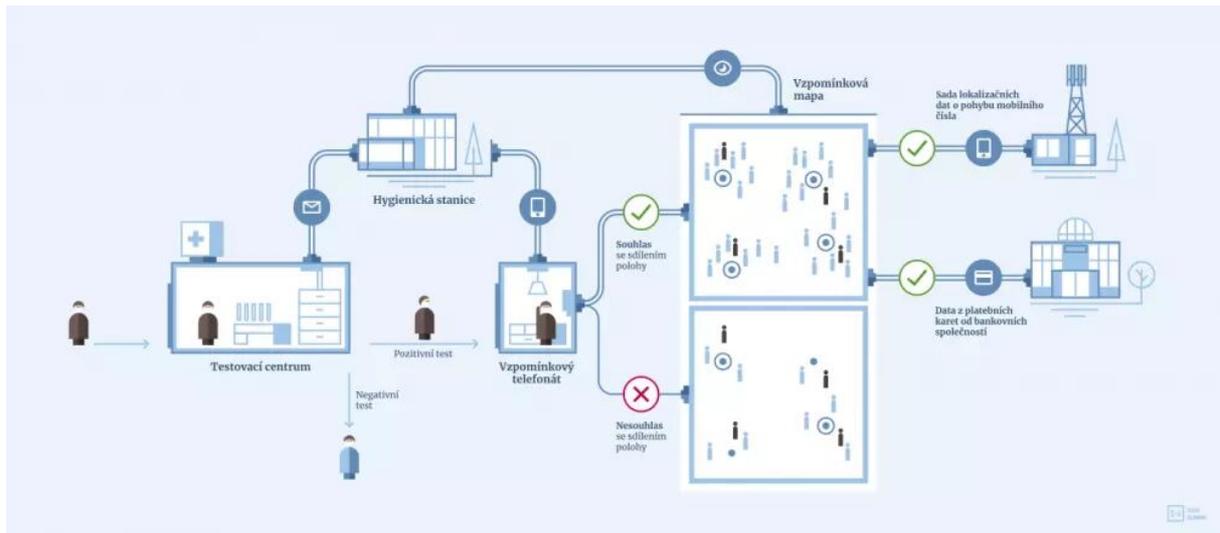
Within three days, everyone who was in contact with the infected person will be contacted. They will be ordered into a short-term quarantine and tested within days.

Smart Quarantine was launched nationwide at the beginning of May after several weeks of testing in chosen regions.

Why is Banking Data important?

Mobile operator data and payment data are of a different nature. Their unique blend is the ideal combination to help people remember the encounters made in the past. While mobile movement data is available for our movement throughout the whole day, the accuracy is quite low (the radius can be as large as several 100 meters) and does not directly point out any events.

On the other hand, payment data is much sparser but very accurate and directly links itself to a particular event which is especially important for purposes of stopping the pandemic, because the data is mainly created during an encounter with another person, some activity, or time spent indoors. This of course, only possible under the condition that you can link raw payment information to a particular shop and location, which is exactly the functionality that was delivered to the project by TapiX.



How it works?

1. Sanitary station forwards the mobile phone number of the infected person through a secure channel to the mobile operator.
2. Operator asks for explicit consent to use the location data.
3. Operator generates a set of location data on the movement and banks provide payment information of the person.
4. Dateio's product Tapix, processes the raw payment data and then enriches it with a name of merchant and GPS, which helps to accurately identify the place of card payment.
5. Data is processed into a memory map.
6. Dotmaps and heatmaps (Memory Map) are automatically created.
7. A trained and dedicated call centre operator (trained medic) calls the infected person and helps them to remember all the encountered contacts for the past 5 days based on the Memory Map. The contacts in risk are the ones that lasted for longer than 15 minutes and were in a distance of less than 2 meters.
8. Telco operators also receive frequently called phone numbers of the infected person. Those numbers are contacted by SMS.