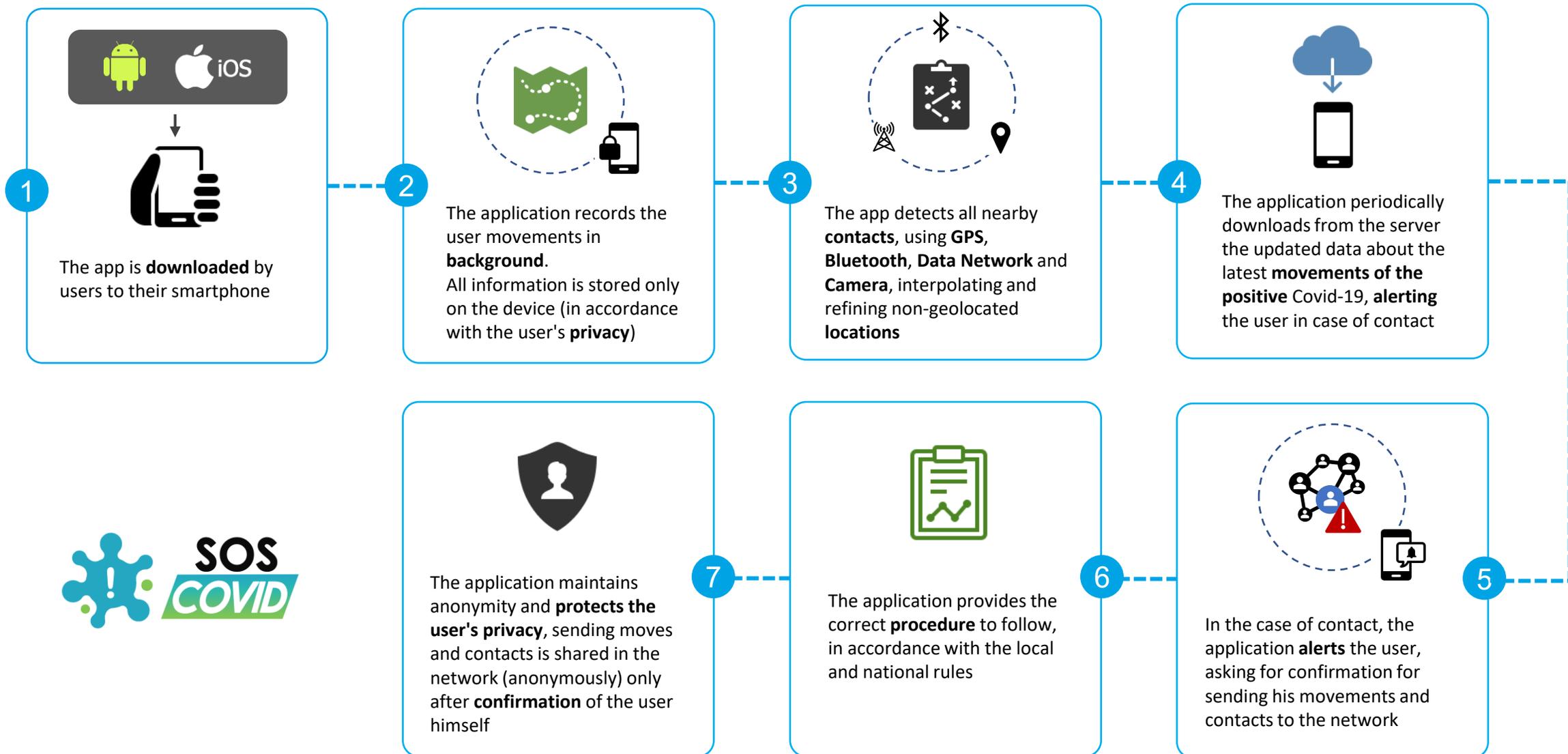




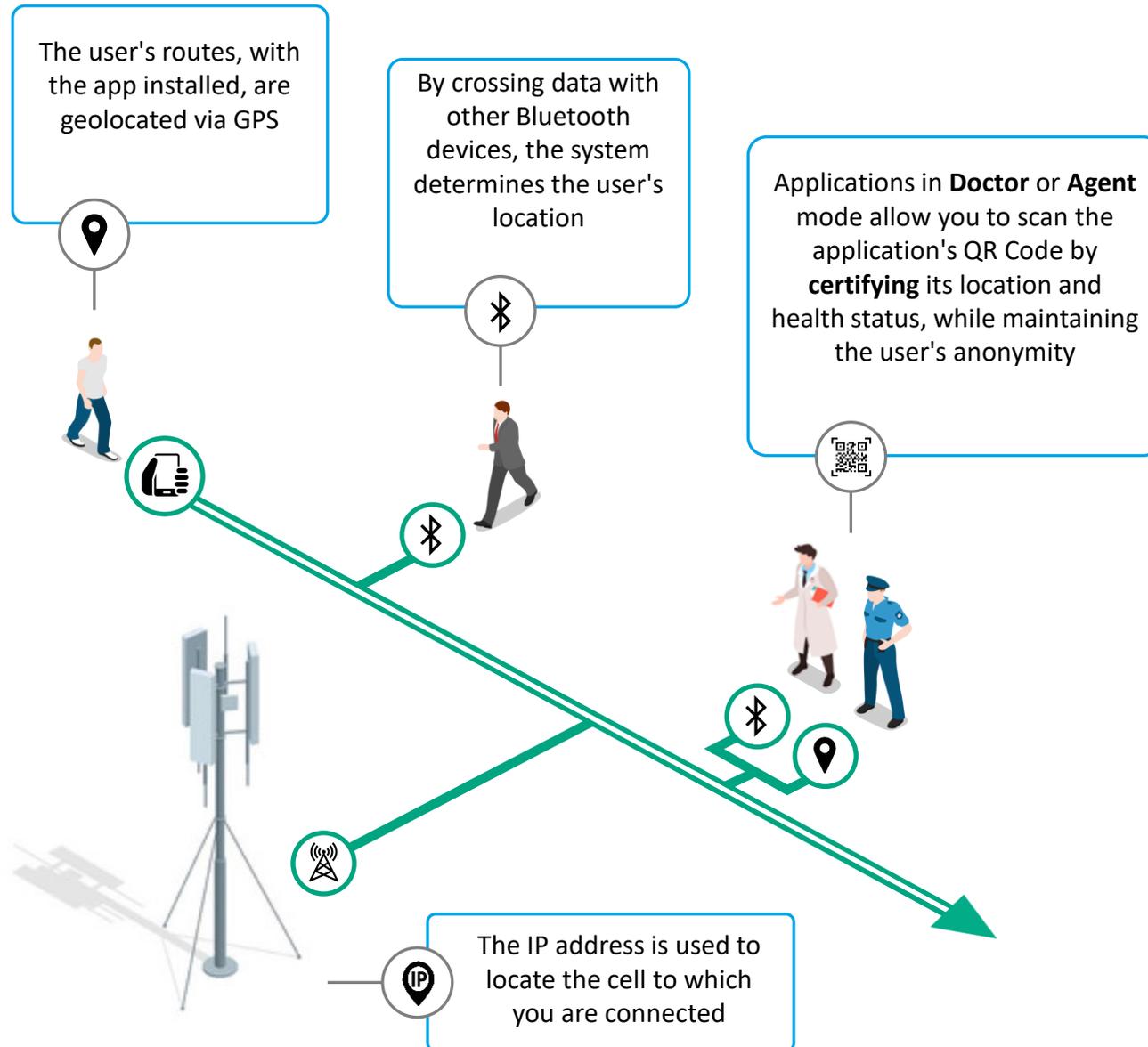
Monitoring, Alerting and Tracking platform for Covid-19 post-lockdown management



Platform main scenario



Technology and traceability



The app uses all the hardware available in the smartphone to determine the "contacts" with other apps nearby:

- **Bluetooth LE** (maximum distance 10-30m)
- **GPS** (10m accuracy, up to 1m with RTK)
- **WiFi/Mobile** (IP address)
- **Camera** (reading QR Code)

A complex cloud **tracking algorithm**, starting with known locations (GPS), calculates the locations of geolocation-free contacts (Bluetooth LE), using the distances between nodes.

The algorithm uses all available information to calculate the location accurately, even in complex network topologies.



Mobile application for the Citizen

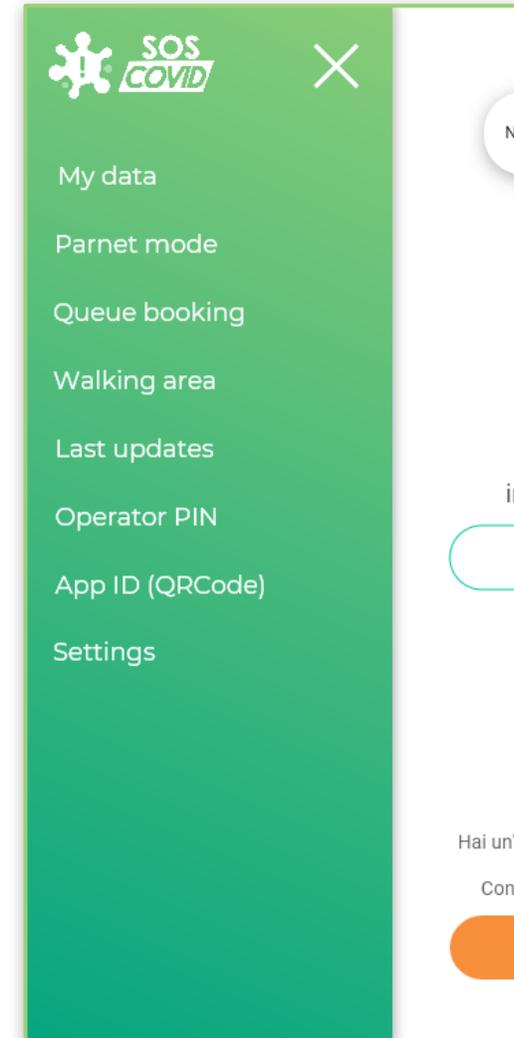
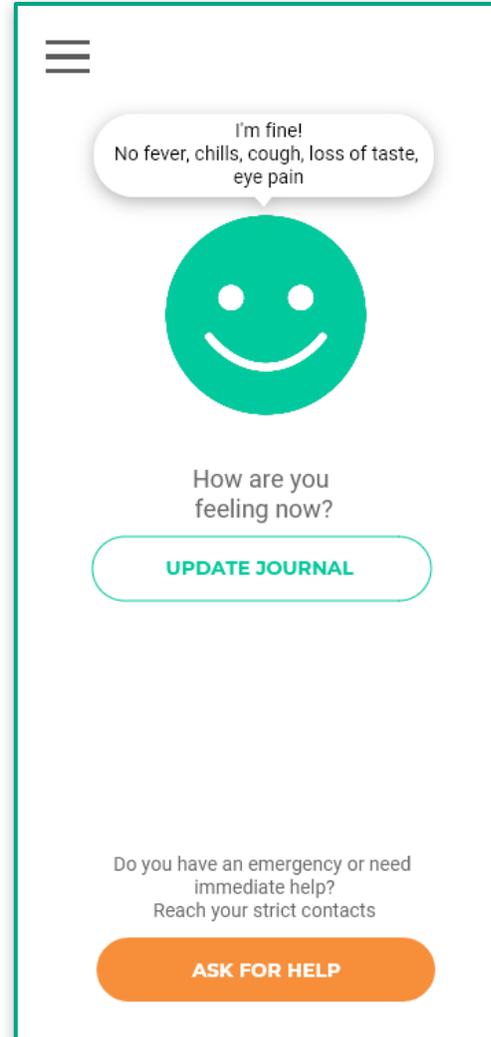
Health status, personal journal, and utilities

Citizen – Home Page

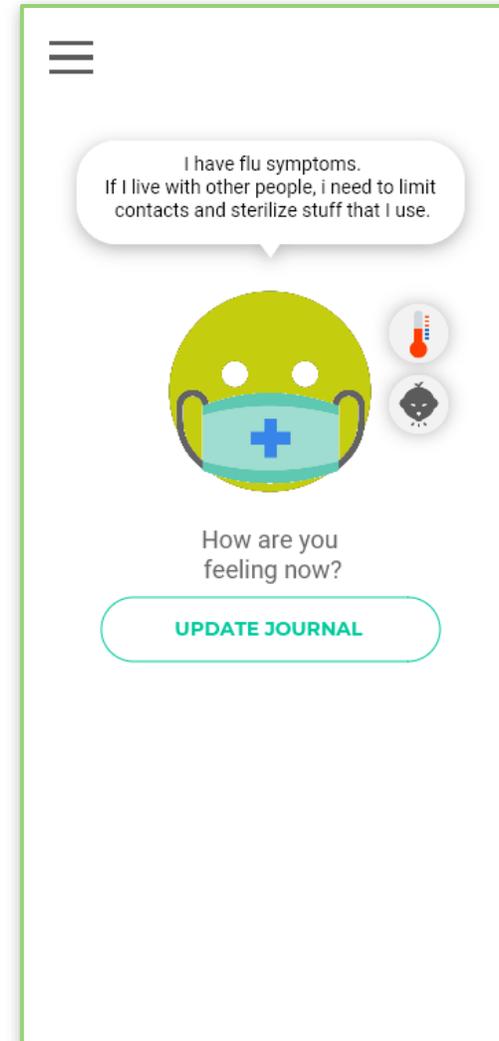
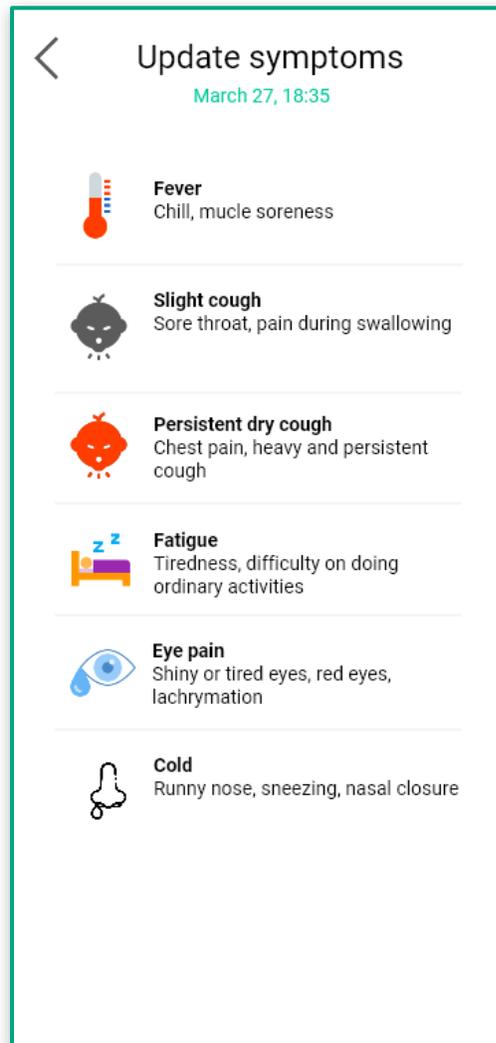
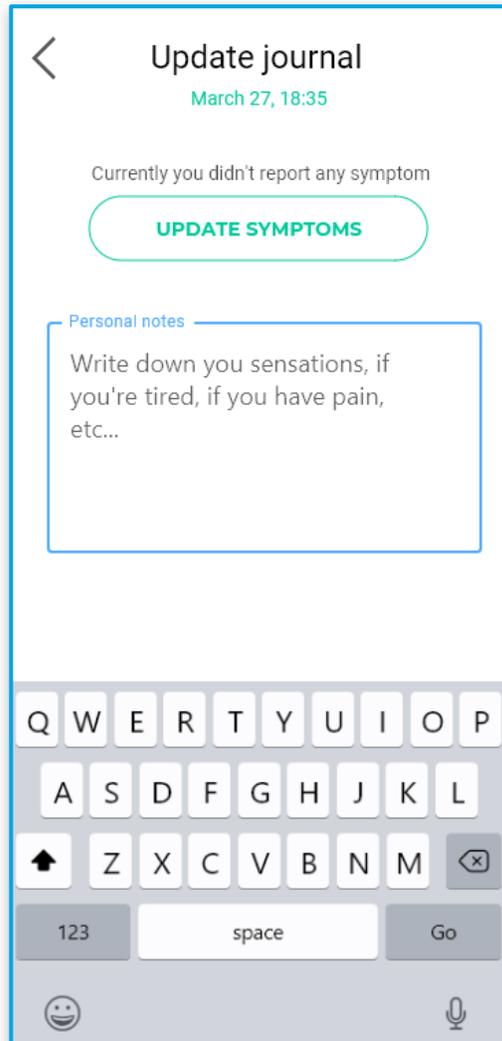
The home page of the application is presented with a simple interface, consisting of an **avatar** that summarizes the current state of the user and a **single button** to change or add information to the personal and symptomatologic journal.

The "**request help**" button, which can optionally be enabled, is designed for **older** users, and allows you to immediately send a **text message** to close relatives, and a notification to the authorities or **doctor** closest to you.

Additional features are accessible from the side menu.



Citizen – Personal Diary



The user can keep track of his health status by adding symptoms and personal notes. The avatar will therefore propose the behavior to be held, based on the reported symptoms.

Only a **Doctor** or **Agent** can change a user's health status to a **positive** state.

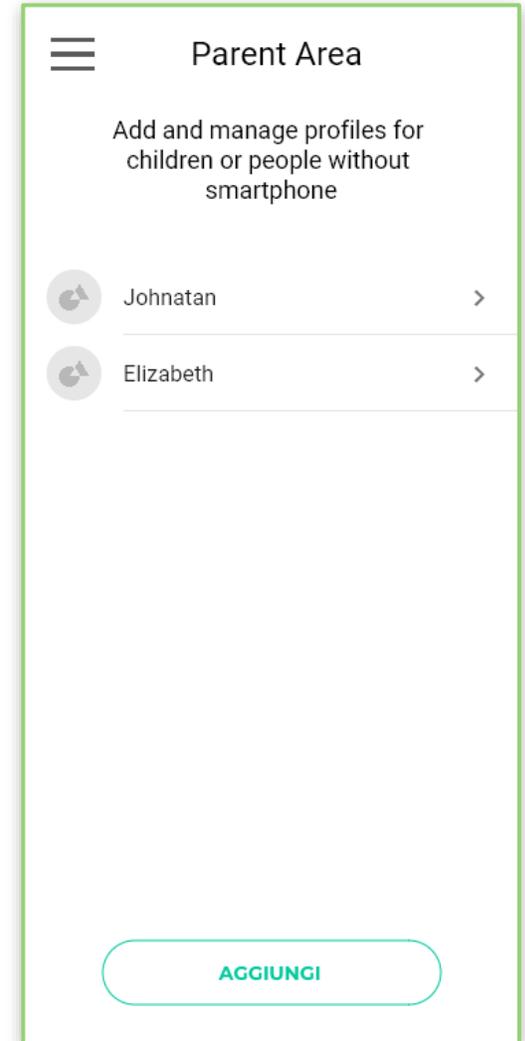
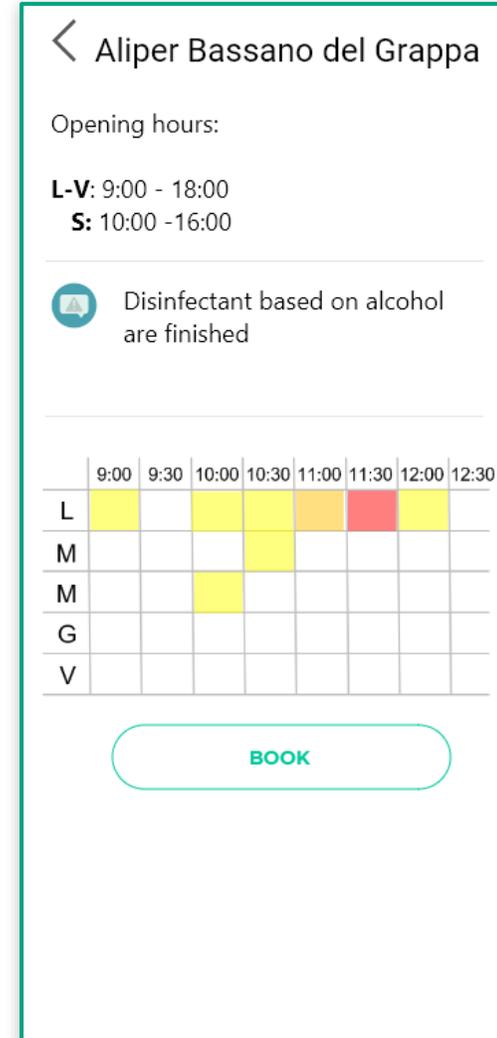
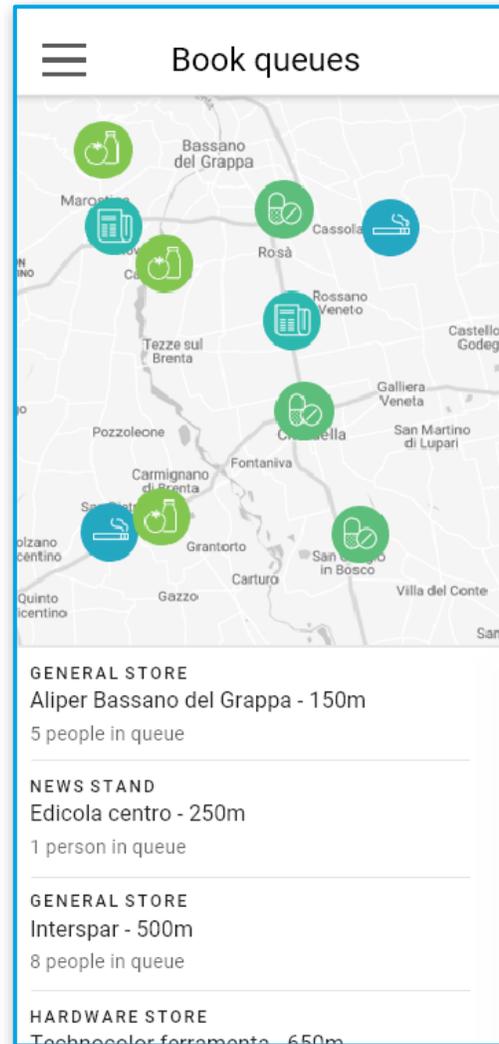
This ensures that the network of contacts receives notifications with **certainty of authenticity**.

The resulting **publication** in the network of the positions and contacts of the user (with his consent), allows you to **notify** the network about the change of status.

Citizen – Queue Booking and Parent Mode

With the queue booking feature, you can **reserve a seat** in the open shops.

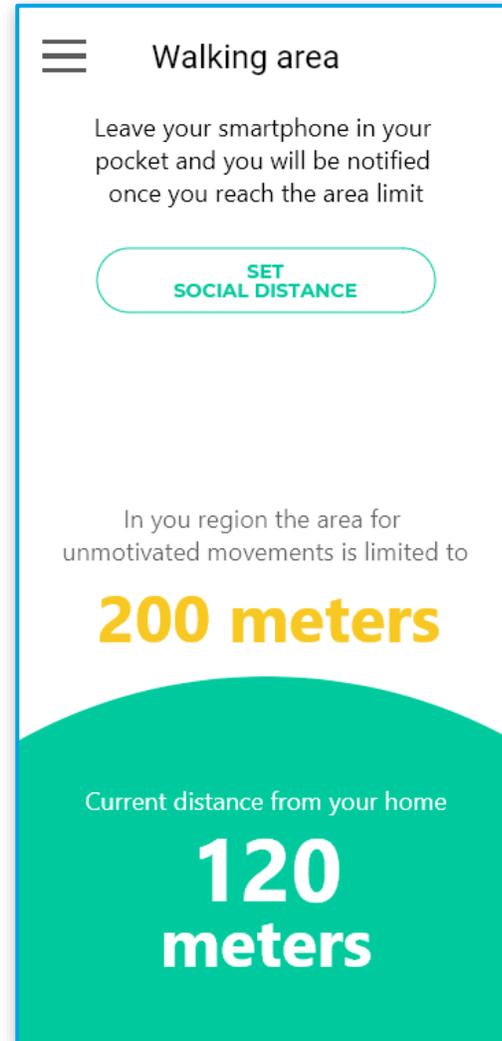
The **parenting area** allows you to add and manage additional profiles to monitor the progress of **children** or **seniors** who do not have a mobile device.



Citizen – Walk zone and Identification App

With the **walk zone feature** you are notified if you exceed the **maximum distance** from your home, as allowed by local or national rules.

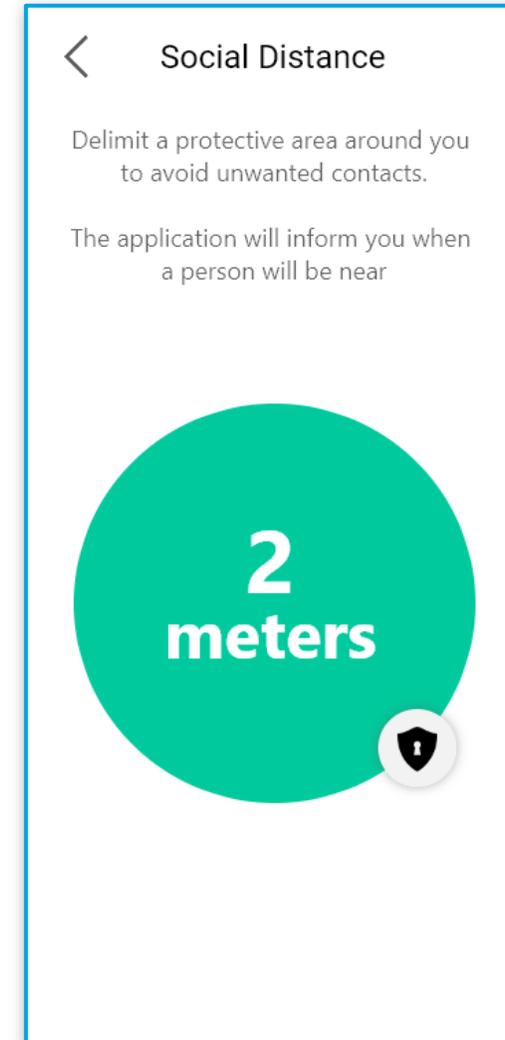
Where BLE is not available, a QRCode identifier allows a **Doctor** or **Agent** to verify the user's **movements, contacts** and the history of the user's symptoms.



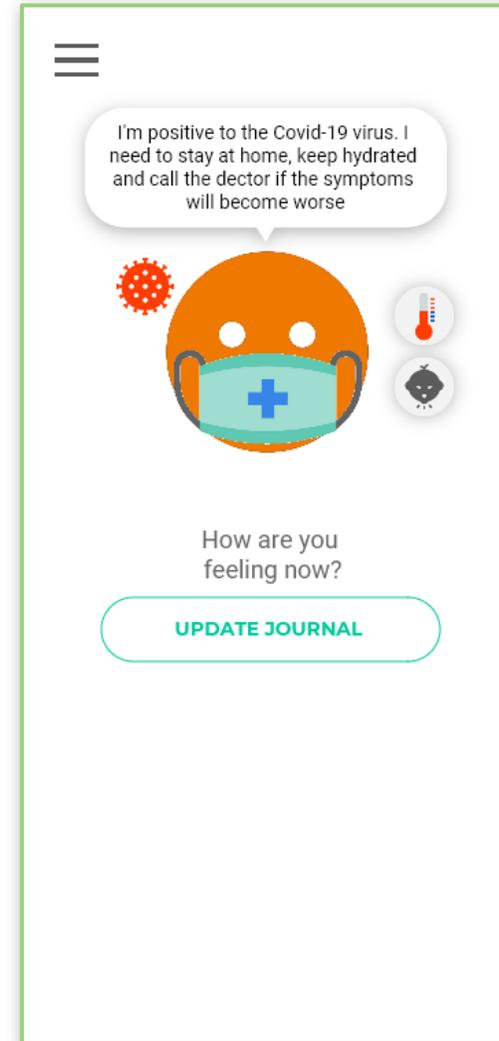
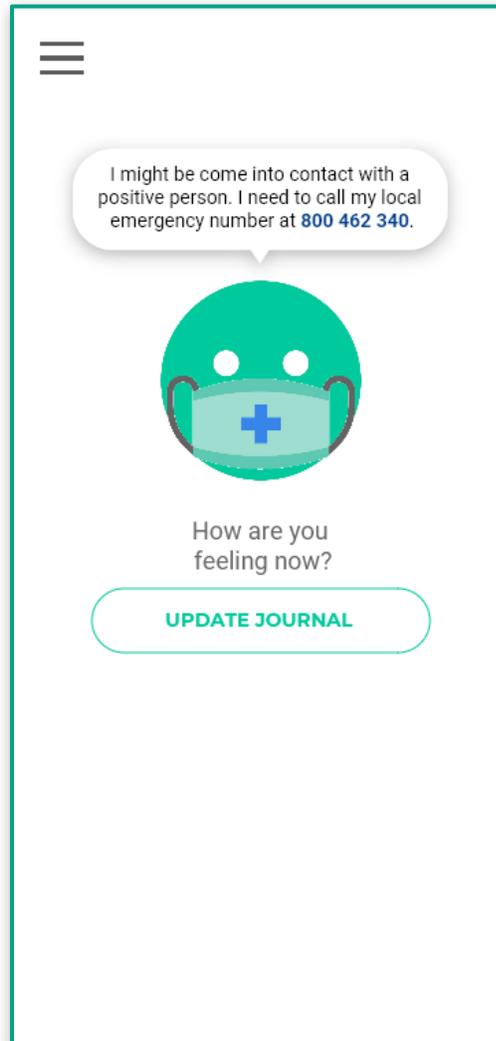
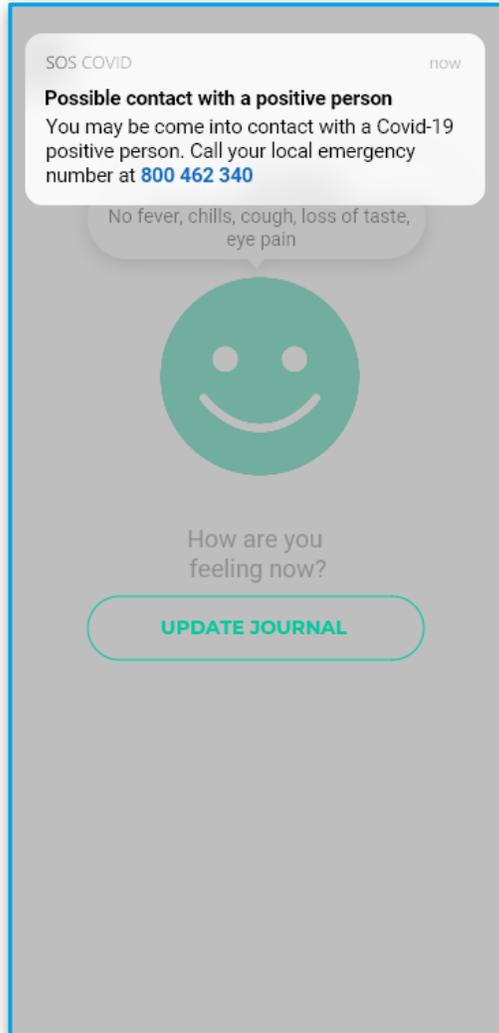
Citizen – Social Distance Management

The **social distance** feature allows you to monitor the area around the user in order to **avoid close contact** with other people.

The app **alerts** you with a vibration and/or a sound when another user approaches less **than 1 meter** (configurable distance).



Citizen – Notification of positivity among contacts



When the server records a positive case in the user's network of contacts, the user is immediately **notified**, and a message suggests about the behaviors/actions to take.

The user is prompted to **upload his movements and contacts**, so that the system can send second-level notifications, eventually.

The **contagion evaluation algorithm** is configurable with distance between subjects, duration of interaction, and with 'concentric centers' logic.



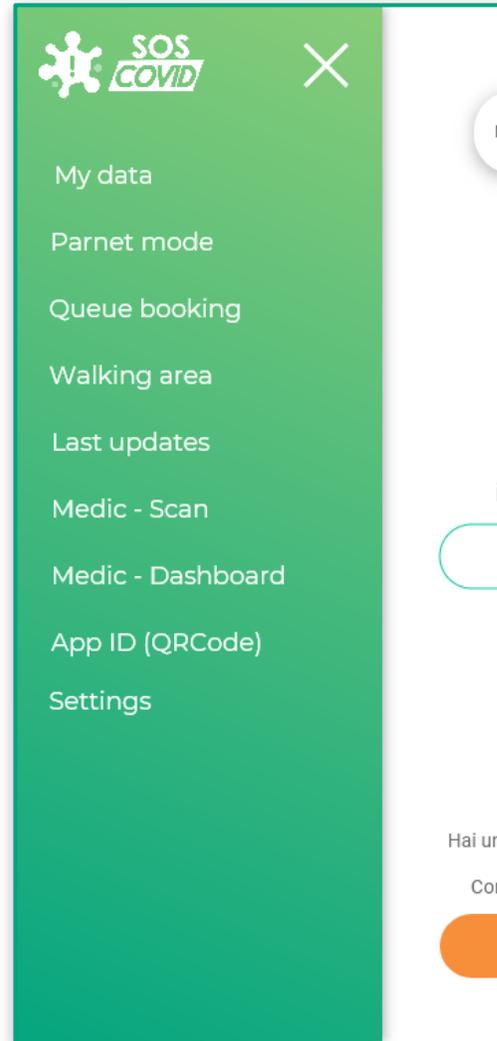
Mobile application for operators

Features specific to Shops, Medics and Authorities

un progetto di

Doctor or Agent – Access

The screenshot shows a mobile app interface for the 'Operators area'. At the top left is a back arrow. The title is 'Operators area'. Below the title, the text reads 'Insert the PIN provided to unlock the operator area'. There is a text input field with a blue border, containing the text 'PIN'. Above the input field, the word 'Pin' is written in blue. Below the input field is a green rounded rectangular button with the text 'CONFIRM' in white. At the bottom of the screen is a numeric keypad with digits 1-9, 0, and a backspace icon.



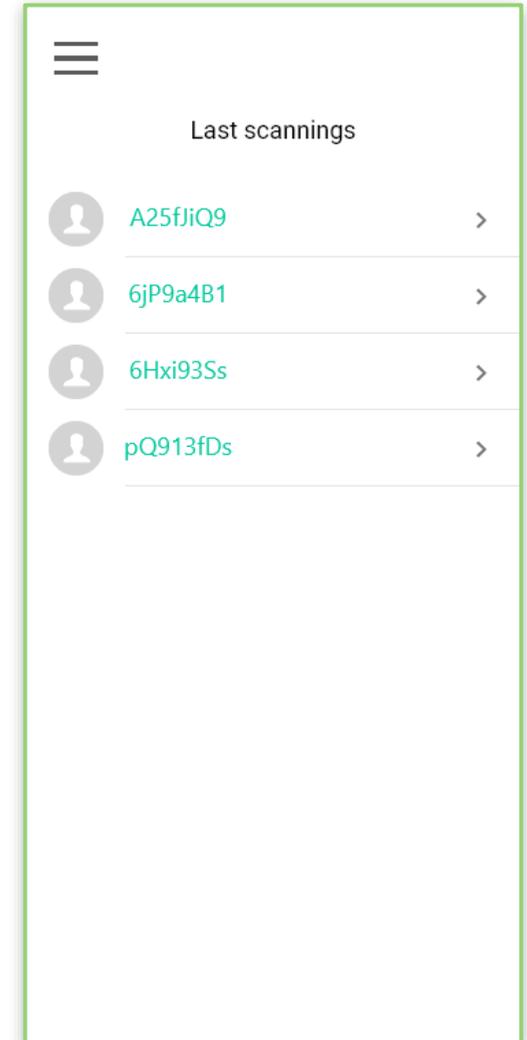
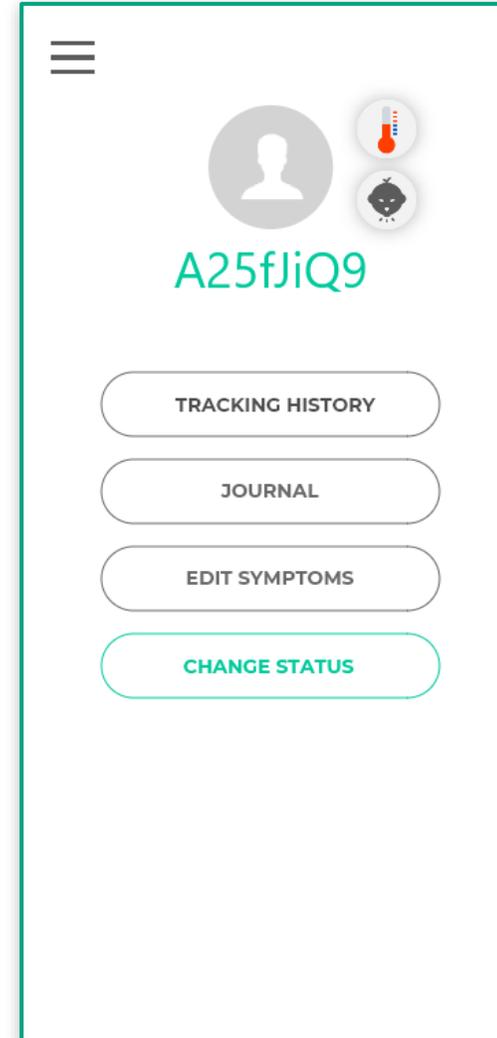
From the settings page, the app allows you to authenticate as a **Doctor** or an **Agent**. In this case, you are prompted for a **PIN**, generated and managed by the administration back office.

New features are then made available, such as **scanning a user's identification code** and verify **movements and contacts**.

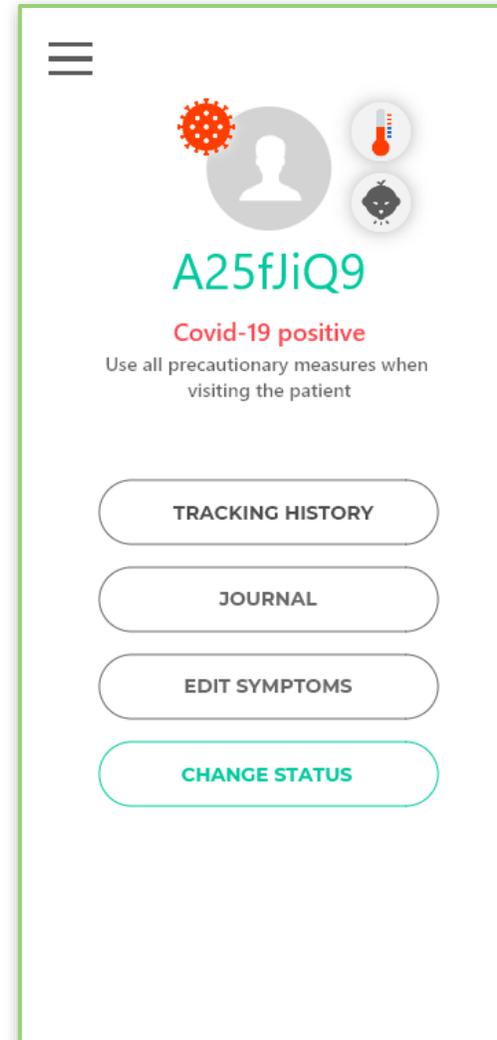
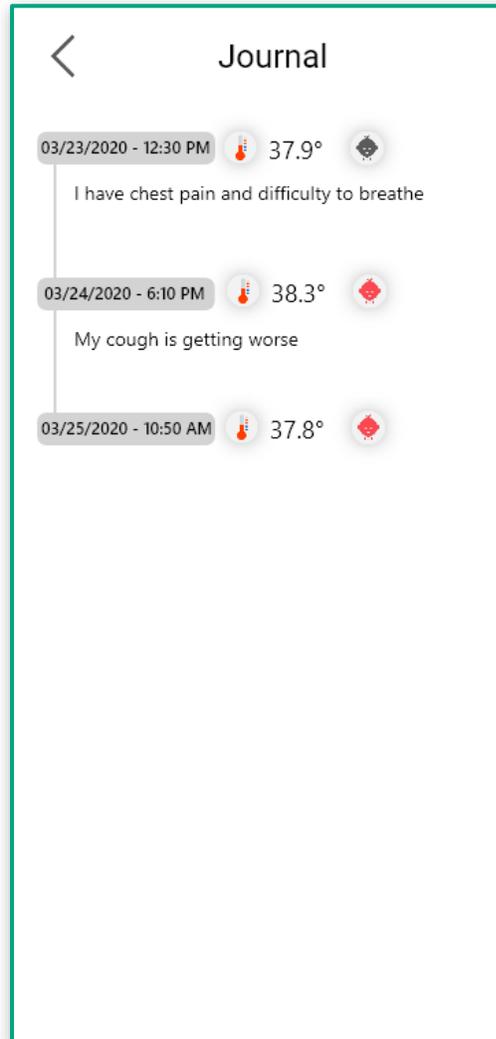
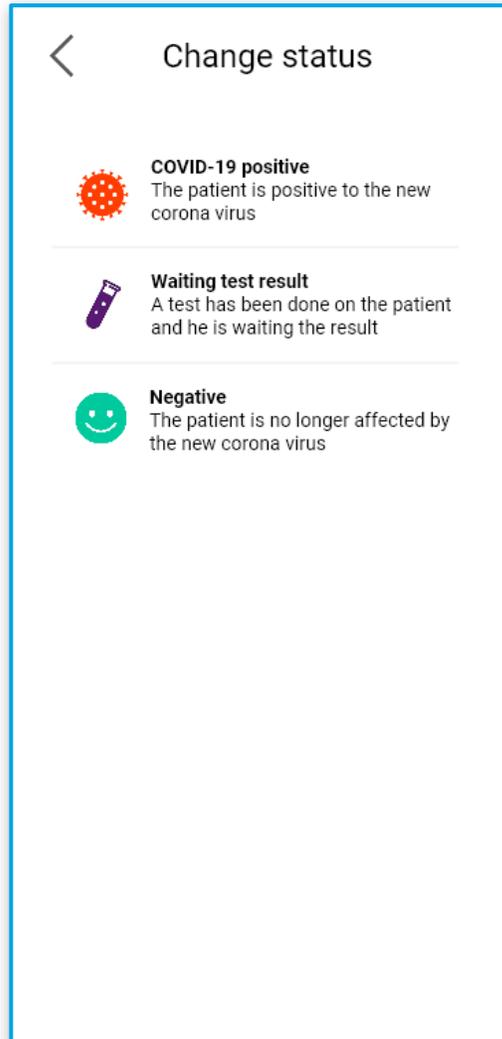
Doctor Mode – Check a Citizen

In **Doctor** mode, the scanning feature allows you to check a user's **movements, contacts,** and symptoms history.

The identification of the user (however **anonymous**) is done **automatically** via Bluetooth, or reading the QRCode generated by the user app.



Doctor Mode – Historical and Patient Health status Change



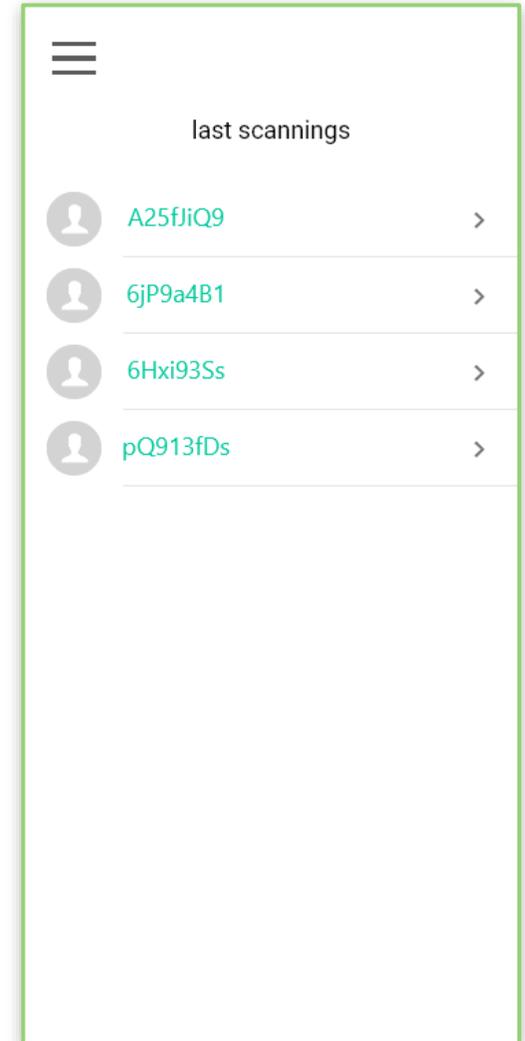
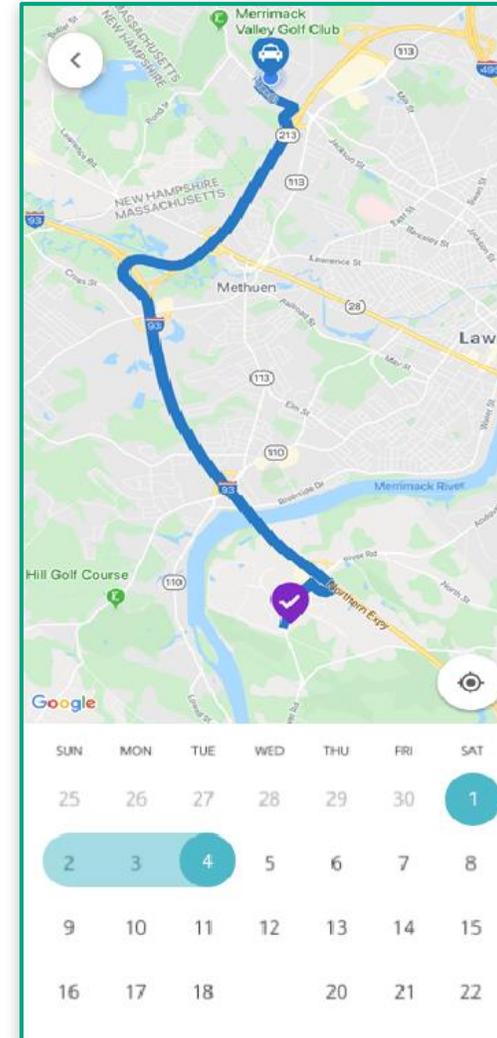
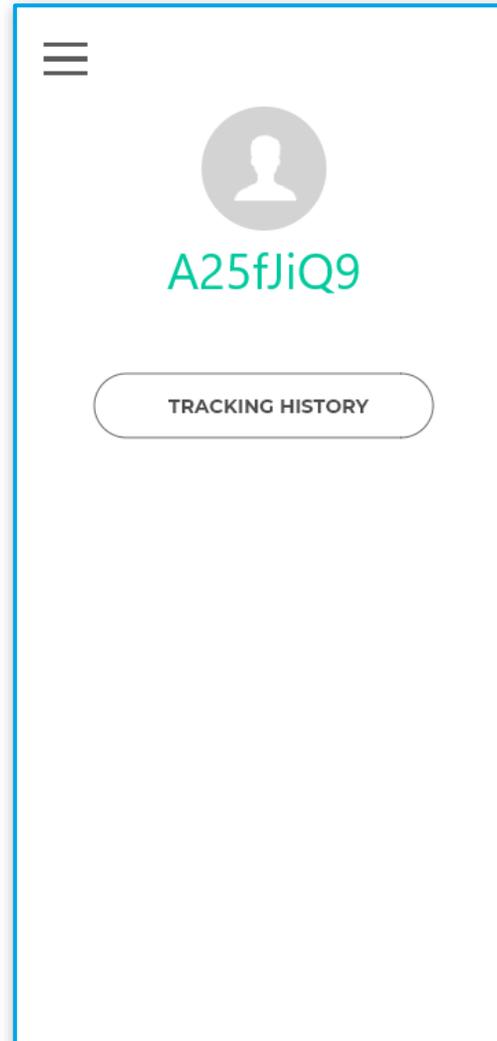
Only in **Doctor** mode is it **allowed** to change a user's health status to a **positive** state, in order to ensure that the contact network will receive an **authentic** alert.

The **Doctor** can also check the patient's symptomacy diary and keep it monitored later.

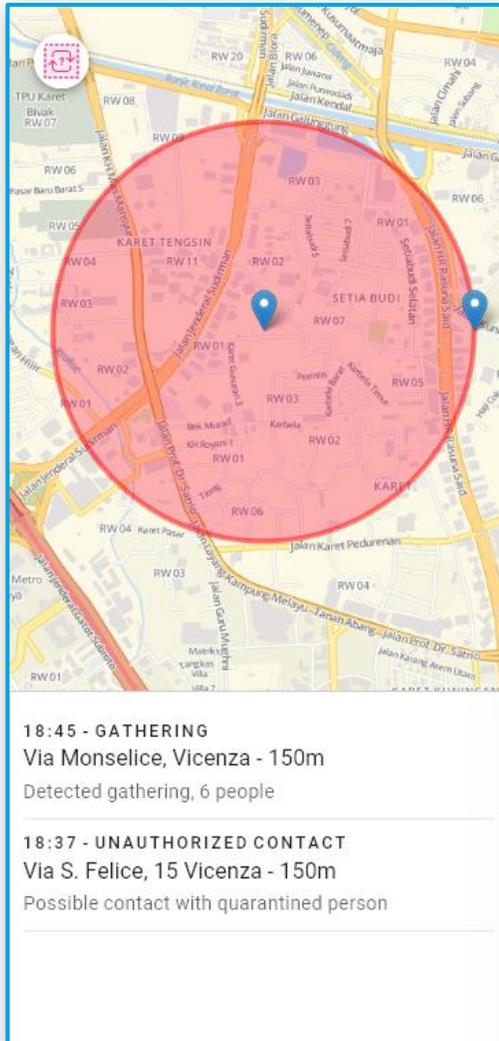
Agent Mode – Citizen tracking

In **Agent** mode, you can check the user's movements.

The identification of the user (however **anonymous**) is done **automatically** via Bluetooth, or reading the QRCode generated by the user app.



Agent Mode – Gatherings and user's contacts check



Agent mode is designed for law enforcement.

In this mode, the application offers the same functionality as the Doctor mode, but also **receives public order notifications** generated by the cloud monitoring algorithm, such as:

- **Gatherings**
- Contacts with a **quarantined** user
- User **lockdown violation**

All notifications are sent to the **nearest** Agents with the **location** of the user(s).

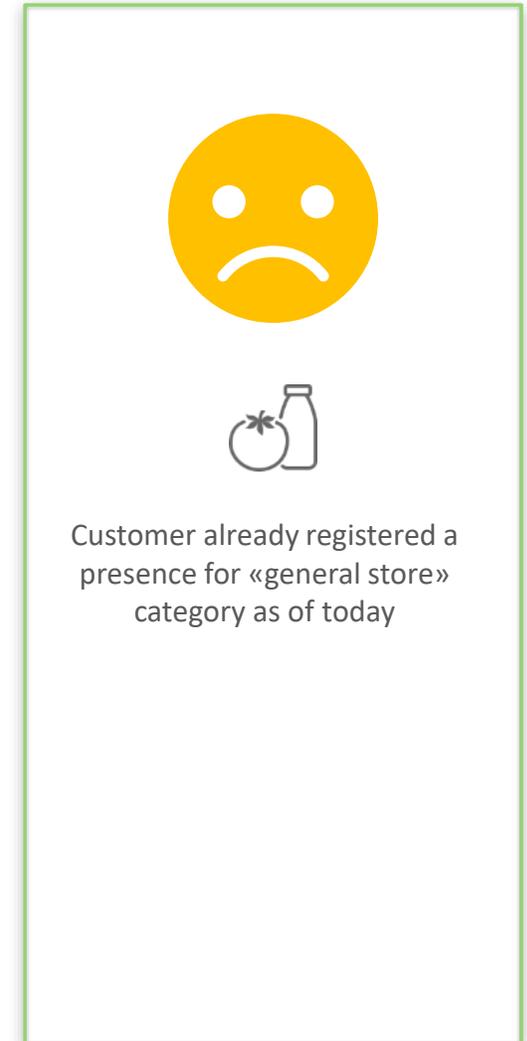
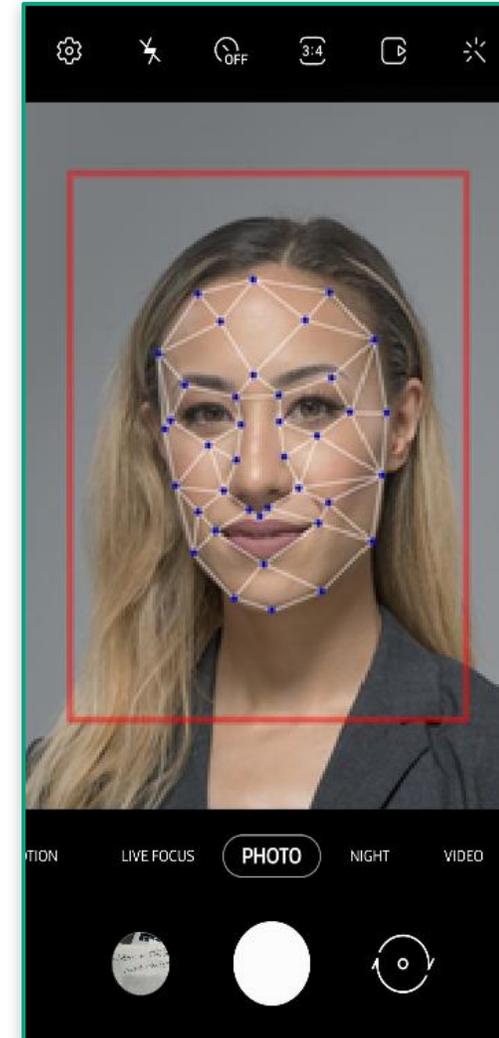
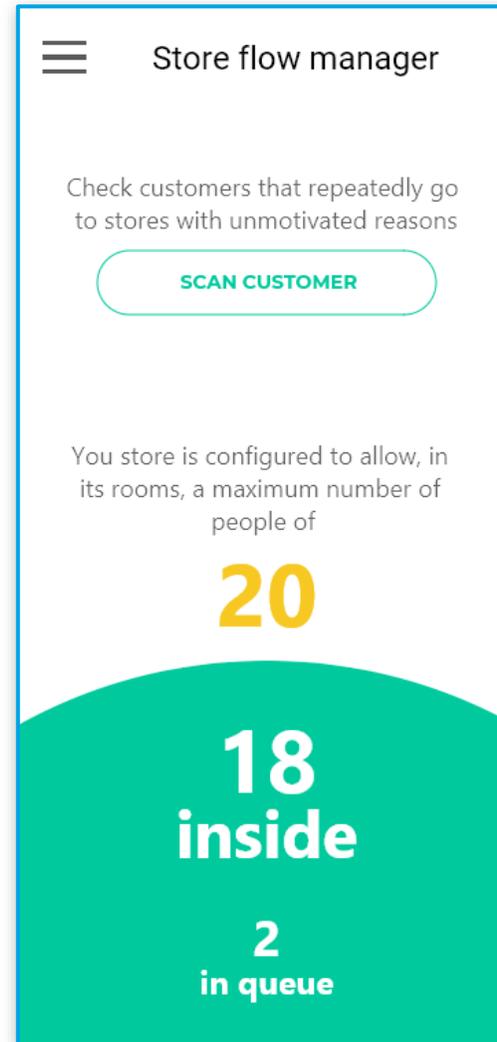
Merchant Mode – Queue management and access limitations

The **Merchant** mode is designed for cashiers or controllers of supermarkets, pharmacies, and any service open to the public.

In this mode, the application offers two features:

- Automatic **queue management** based on the location capacity
- Notify when a user goes to a service of the same category **more times than allowed**

The identification of the user (however **anonymous**) is done **automatically** via Bluetooth, or reading the QRCode generated by the user app, or with face scanning (anonymous).



Control Panel - Monitoring

All the data collected to the cloud is made available to law enforcement using a web administration **backoffice**, which provides the following features:

- Real-time anomalies alert: a **positive** breaking the quarantine, **gathering**, and displaying them on the map.
- Send **instant messages** to specific groups of people, by zones, or by the user's network of contacts up to N levels.
- Full map with all the **movements** of all users over time.
- Full map with the **distribution** of all users in the territory over time.
- Full access to the **database** for post processing.
- Create **PINs** to authenticate in the app in **Doctor**, **Agent**, or **Merchant** mode





Thank you

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