

## Office of the Privacy Commissioner: Overview of COVID-19 Contact Tracing Apps – 12 May 2020

Country	App Name	Public / Private	Voluntary / Mandatory	Info collected	Purposes	Disclosed to	How does it work?	Notes/issues
Australia	Covid SAFE	State	Voluntary	Registration info, Bluetooth close contact	Contact tracing	Public health officials with consent	It collects records of close contacts within the last 21 days. Aside from registration data, the information remains on the phone until a user who tests positive to COVID-19 consents to uploading the data.	<p><a href="#">It has attracted criticism</a> because the federal government is a data repository, even though the government has stressed only state health officials will have access to it.</p> <p>Despite already being rolled out, the information <a href="#">cannot yet be used</a> for contact tracing as final information sharing details haven't been finalised. Diabetes Australia has received reports the app was interfering with continuous glucose monitoring (Department of Health are investigating).</p>
Austria	StoppCorona	State	Voluntary	Bluetooth close contacts	Contact tracing		Close contacts are anonymously informed when a contact tests positive and asked to self isolate.	<p>Unclear what registration info is required – appears to be very little (i.e. you could download app and use it without the state knowing your identity)</p> <p>Potential issues of inaccuracy</p>
Bahrain	BeAware Bahrain	Public	Voluntary	Location info	Contact tracing	Information and eGovernment Authority	<p>Push notifications to individuals in the event they approach a location where an active case has been detected, or if they were in close proximity with an active case</p> <ul style="list-style-type: none"> <li>- Track the movement of quarantine cases for a duration of 14 days, and ensure they abide by quarantine regulations</li> <li>- Track active cases and provide contact tracing updates</li> <li>- Highlight COVID-19 developments</li> <li>- Publish latest recommendations issued by the Kingdom's health authorities</li> </ul>	There is also a bracelet that the government as issued to assist with the location accuracy of the users.
Bulgaria	Virusafe	State	Voluntary	Personal data such as personal ID, age, any chronic diseases, location	Contact tracing	Ministry of Health with individual consent	<p>Personal data of individuals are used by the MoH and competent authorities to combat the spread of the infection for the purposes of analysing the dynamics of the infection:</p> <ul style="list-style-type: none"> <li>- Analysis of the number of individuals with symptoms and the moment of their manifestation;</li> <li>- location of individuals with symptoms, the history of their movement and their proximity to other people;</li> <li>- Informing individuals targeted at specific individuals and / or groups;</li> <li>- Other analyses and visualizations of the collected information.</li> </ul>	MoH may disclose information to third party service providers

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Canada (Alberta)	ABTraceTogether	Public	Voluntary	Bluetooth close contacts	To assist with contact tracing			<p>The app has the same issue where the app doesn't work unless the phone is unlocked and the app is running in iOS.</p> <p>Based off Singapore's TraceTogether, but tweaked by Deloitte and IBM</p>
China	Alipay & WeChat app	Private	De facto Mandatory	Location and contact with other phones	Contact tracing and providing access to services including transport	Individual and government	Before people can do things like ride the subway or enter a crowded shopping mall, they have to prove they're at low risk of having Covid-19. They do that by scanning a government-mandated QR "health code" on their cellphone that's either green (likely Covid-19 free), yellow (at risk of Covid-19), or red (likely Covid-19 positive).	It's not known exactly how the code is calculated, but it's loosely based on information like a user's location and their medical and travel history, which is informed in part by a government questionnaire.
Colombia	<a href="#">CoronApp</a>	Public	Voluntary	<p>CoronApp collects public, semi-private, private and sensitive user data</p> <p>Location data</p>	To help in diagnostic efforts, such as: Verification of the health status by the Plan Management Entities Benefits (EAPB), precise channeling of potential cases that need to be directed to centers assistance to start their care, identification of possible conglomerates of cases, in time and place, which facilitate prioritising the action of health authorities, identify potential chains of contagion, among others.	Health authorities	The mobile application allows daily reporting of symptoms and the state of health of the entire family, knowing official information on government measures, prevention recommendations, location of health services, as well as channels to guide and promptly attend the coronavirus.	
Colombia	CoronApp	Public	Voluntary	Health and location	To understand spread of virus across community and contact trace	Government	Individuals can register on the update and each day update how they are feeling so the government can track symptoms and likely cases. It logs individuals location when they login. Individuals can also use the app without registering just to get updates from the government.	Note – had to use google translate to get this info

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Cyprus	CovTracker	Public-private	Voluntary	Location information (device only)	Contact tracing	Public health officials with consent	The app is a location log providing time-stamped records of a user's path within a specified period. The trail generator updates every five minutes and all data are stored only on the user's phone. Location is determined by GPS, Device Sensor data, IP address Wi-Fi access points, Bluetooth and cell towers. (The user may switch on and off the app's logging by selecting the Start/Stop Logging option in the app.)	Cyprus government was previously developing a Bluetooth based app which had privacy concerns – that app has been shelved.
Czech Republic	eRouska (eFacemask)	Public	Unsure	Bluetooth	Contact tracing	Ministry of Health	Notes phones you have had close contacts with and then if one tests positive notifies you of need to test and isolate.	Only available on google play store but soon also available for Apple.
Czech Republic	<a href="https://www.mapy.cz/">Mapy.cz</a>	Private	Voluntary	Location data and if the user wants can submit health data as well	Contact tracing	Information collected is usually not shared unless user consents	User has to turn on location sharing for COVID-19 location in the app, the app will process user location history and may notify user in the future if the app evaluates that the user may have come in contact with a positive person.	The data is collected with an emphasis on protecting the user's privacy. The app only stores the application id for the location history, for feedback to user, without reference to user's Account List or any other information.  The data is stored separately from others and will be deleted after the epidemic. No data is passed on to any other entity, any transfer of data would require your further express consent.
Ghana	GH Covid-19 Tracer App	Public	Voluntary	Health	Contact tracing	Ministry of Communication	Individuals download the app and can update how they feel and their phone number to assist govt with identifying cases.  The COVID-19 Tracer App, through the common platform of mobile networks, is able to trace contacts of persons infected by the virus, show where they have been in recent time, through various telephone related data, and link such people to health professionals for urgent action to be taken.	Security was an initial concern but seems to have been resolved now.
Iceland	<a href="https://www.rakning-c19.is/">Rakning-C 19</a>	State	Voluntary	Location data and mobile number and if necessary social security number	Contact tracing	Civil Protection Infection Tracking Team and then with user's consent.	While the app is running on the user's phone, it collects location data for the last 14 days and securely stores on the user's phone. The application starts collecting data when the user starts using it, so no data will be available on the user's trips before that time.  The location data will only be stored on the user's phone. The user will not be contacted by the Infection Tracking Team without the user's consent. The infection tracking team will only ask the user to share location data if trips prove necessary. In such cases, the user will also be asked to provide social security number, to ensure that the data belongs to the right person.	Remove the app from the user's phone and no locations will be saved to the user's phone.

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India	Aarogya Setu	Public	Mandatory	Location/Bluetooth	Contact tracing/spread of virus	Indian Ministry of Home Affairs	The app requires continuous access to location information for social movement and uses Bluetooth technology to alert people when they come in contact with someone who has tested positive for COVID-19.	The Indian Government have refused to release the source code. The privacy policy of the app is silent on security and purpose and disclosure limitations are unclear.
India	<a href="#">Saiyam – Track and Trace</a>	Private	Mandatory for individuals in quarantine	Real time tracking of individuals in quarantine and location data.  GPS collection	Monitoring and tracking	City administration, and/or local police station	People who have returned from overseas travel are required to download the application for the City Administration to monitor their real time movements	
India	<a href="#">COVA Punjab</a>	State	Mandatory	Personal, demographic, location, device and other similar information may be collected.  Bluetooth and GPS	Monitoring and tracking	City administration, and/or local police station	By geotagging positive patients, the App helps district administration trace locations that the positive individual has visited during the last few days.	
India	<a href="#">Corona Watch</a>	State	Voluntary	Name, Mobile Number, Address, Gender and GPS Location  Device ID, allows the app to establish if a phone call is being made or received and the phone number the call is connected to	Monitoring and tracking  Also helps identify nearest hospitals for corona virus including the sample collection centers and testing labs	City administration, and/or local police station		An app by Karnataka (state) government, shows the locations of coronavirus-affected patients and their movement history of 14 days. The app also has a map that shows spots visited by people who were later tested positive for coronavirus and area where citizens are under house quarantine.
Indonesia	<a href="#">Care Protect</a>	State	Voluntary	Bluetooth	Contact tracing	Government agencies	The app uses data produced by the user's device with Bluetooth enabled to record the information needed. When there are other devices within the Bluetooth radius that are also registered in Care Protect, an anonymous ID exchange will occur which will be recorded by each device.  The app will then identify people who have been in close proximity to people who tested positive for COVID-19 or Patients Under Supervision and People in Monitoring.	Data is stored securely in an encrypted format and will not be shared with others. Users data will only be accessed if they are at risk of contracting COVID-19 and need to be contacted immediately by a health worker.
Israel	HaMagen	Public	Unsure	Location	Contact tracing	Ministry of Health	The Ministry of Health keep the app updated with epidemiological data of known COVID-19 cases, and if you cross paths with a case the app alerts you and directs you to the webpage.	Note also in Israel, Shin Bet using mobile phone location tracking technology (tracked 500 positive COVID-19 cases) – Supreme Court ruled the program can continue if a parliamentary committee overseas it.

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Israel	<a href="#">Track Virus</a>	Private	Unclear – presume voluntary	<p>GPS (Bluetooth reported but unverified)</p> <p>Location history (device only)</p> <p>If user is notified they have crossed paths with an identified patient with COVID-19, user can export location history.</p>	Allows users to see if they have crossed paths with any confirmed COVID-19 cases.	Health authorities	<a href="#">The app crosschecks the users' path with the paths of confirmed COVID-19 cases (as per data collected by the Israeli Health Ministry), and notifies the user if they were present or near an "infected" location. If so, user will receive a notification requesting they get in touch with the health authorities as soon as possible.</a>	No user identification, (e.g. via email or cellphone)
Italy	<a href="#">SM-COVID19</a>	Private	<a href="#">Voluntary</a>	<p>Number of contacts, duration of time with contacts, and distance between contacts.</p> <p>GPS data is not shared unless enabled by the user. GPS data will ONLY be recorded when contacts are detected.</p>	<a href="#">Assessing the risk of virus transmission.</a>	Health authorities	Uses <a href="#">Bluetooth</a> to monitor the number of contacts, duration of time with contacts, and distance between contacts.	There <a href="#">are reports</a> a private company named Bending Spoons may also be creating a tracing app (initially named Immuni)
Kyrgyzstan	<a href="#">Stop Covid-19 KG</a>	Public	Unclear – possibly mandatory for people in quarantine.	GPS	Prevent entry into the country and prevent further spread of COVID-19	Headquarters of Kyrgyz Republic and individual authorised persons	Monitoring and controlling the location of people infected with COVID-19 and those who have had contact with them.	<a href="#">Also - IT Chat Bot in Telegram function provides information to public on Covid-19.</a>
North Macedonia	StopKorona!	Private	Unsure	Location/bluetooth	Contact tracing	Ministry of Health	This app itself acts as a personal log tool for tracing user's exposure by measuring the distance between mobile devices that have the application installed. The data deriving from StopKorona! is shared with the authorities only upon explicit consent given by the app users.	<p>Using Bluetooth technology, this application exchanges encrypted, anonymized data with every other nearby app users, measuring their mutual distance. It uses received signal strength indication (RSSI) values to measure signal strengths between telephones. RSSI calibrated values are used to estimate approximate distance between users, whereas the duration of such connection is registered by the mobile app itself.</p> <p>This information is stored only on the user's device and includes records only from the past 14 days.</p>

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Norway	Smittestop	Public and Private	Voluntary	Bluetooth and GPS	Contact tracing	Public Health	App used to log close contact with another phone – logged on phone for 14days only sent to health if person tests positive. Other people notified by alert message.	All data in the app will be continuously deleted after 30 days, and the entire app will be deleted in December. The app can be deleted at any time by anyone who has downloaded it, and that will mean that all data is deleted.
Pakistan	<a href="#">Covid-19 Gov PK</a>	Public	<a href="#">Voluntary*</a>	<a href="#">GPS*</a>	<p>Provide awareness to citizens about Covid-19 prevention.</p> <p>One major feature “Radius Alert” will allow citizens to “identify” COVID-19 patients in a certain radius so citizens can maintain social distancing.</p> <p>Also provides Dashboard for current status of COVID-19, alarms for washing hands, Chatbot for awareness of COVID-19 and WHO videos for prevention of Coronavirus.</p>	-	<a href="#">Monitors user location and alerts user if there is a Covid-19 patient within a radius of 32 yards.</a>	<p>Some concerns: <a href="#">the app’s privacy policy comprises only two paragraphs and offers no details about how it adheres to “social, moral, ethical values, and privacy.”</a></p> <p><a href="#">Reports of using patient’s phone data to obtain locations visited by confirmed Covid-19 cases and cellphone numbers of those in vicinity at the same time.</a></p>
<a href="#">Philippines (Cebu)</a>	WeTrace	<a href="#">Public/Private</a>  <a href="#">(developed privately then endorsed).</a>	-	<p>GPS</p> <p><a href="#">Reports anonymised user data is kept for 30 days then auto deleted.</a></p>	Tracing and monitoring persons living in the Province of Cebu who have severe acute respiratory infections, influenza-like illness or have been classified as persons under monitoring or those with COVID-19 symptoms.	Unclear	<p>Traces user timeline, movements and contacts.</p> <p>User identified by app through unique QR Code or device ID number.</p>	<a href="#">Other options</a> under development for tracing in the Philippines also.

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Poland	<a href="#">Home Quarantine</a>	<a href="#">Public/private*</a>	Mandatory for people required to quarantine (except the blind, visually impaired, or those who sign a declaration confirming they do not use telecommunications networks or have a smartphone)	GPS Biometrics (facial recognition) Data kept for six years	To <a href="#">facilitate compulsory quarantine at home</a> .  <a href="#">Allows users to confirm where they are, do a basic health assessment, directly report danger and supply most-needed items to people who cannot do this themselves.</a>	Police, state governors, the Centre for Information Technology, National Centre for Healthcare Information Systems and the subcontractor.  The Government	<a href="#">The app prompts users to take a real-time selfie, multiple times a day, at the address they have provided to the authorities.</a>  Users reportedly have 20 minutes to respond.	A failure to install the app results in a Police visit and a fine of 30,000 zloty (\$11,200)
Poland	<a href="#">ProteGO Safe</a>	Public	<a href="#">Voluntary</a>	<a href="#">The application is anonymous and will not collect users' data or tracking their location.</a>  It will only remember other "encountered devices", not users.  The app will use random identifiers for communication between devices, which will be changed every hour.	The app has two main functions <a href="#">to control the spread of the disease</a> .  Firstly, allow users to monitor their health by completing a Health Journal and taking a Risk Assessment Test.  Secondly, use Bluetooth technology to collect information about what devices a user has encountered.  <a href="#">According to the App store, this Bluetooth feature may not be available yet.</a>	Sanitary Inspection (to contact people who should be quarantined more quickly).	The Risk Assessment Test is done through a survey. It puts users into groups based on risk and provides them with health advice.  The Health Journal allows users to keep a regular record of how the user is feeling, whether they have any symptoms, etc.  The app will <a href="#">use Bluetooth technology to log connections between smartphones on a device. This data is encrypted and stored on the phone for two weeks.</a>  To install the app, users must register their phone number.  A user, if they become sick, changes their status in the application anonymously and then the app, sends data about what devices the user has encountered to a special server. This server informs users of all devices that had contact with the sick person within the previous two weeks about a possible risk and the need for quarantine, taking into account the length and frequency of meetings (in accordance with WHO guidelines). The user's status will change (from green to red) to mark contact with an infected person.	<a href="#">Polish media have made some controversial report about the app collecting personal data.</a>  <a href="#">The Ministry of Digitization has denied these allegations.</a>
Saudi Arabia	Rest Assured (Tatamman) app	Public	Voluntary	Health	Monitoring of active cases and assisting those in quarantine	Ministry of Health	Those in self-isolation can assess their health condition, receive advice and speak to medical staff	

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Saudi Arabia	Tawakkalna	Public	Mandatory	Location info	Contact tracing and monitoring movement of people when they leave their residences during their 4 hour a day allocated time	Ministry of Health and Saudi Artificial Intelligence and Data Authority	Facilitates the issuance of movement permits for essential workers and individuals leaving their homes for up to 4 hours a day to collect supplies. Also allows individuals to notify suspected cases both of themselves and others. Also provides close to realtime updates on number of cases and where these are located ie hotspot mapping.	
Singapore	<a href="#">TraceTogether</a>	Public	Voluntary	User's mobile number (used by MoH to contact users if they are in close proximity to a COVID-19 case).  Encounter/  Proximity data is stored on a user's phone for 21 days on a rolling basis. After that, it is deleted. This data is not shared with MoH unless they seek consent.  Anonymised app analytics to improve app experience.  No location data is collected.	To enable community-driven contact tracing by allowing participating devices to exchange proximity information whenever an app detects another device with the app installed.	Ministry of Health  If a person unfortunately falls ill with COVID-19, the Ministry of Health (MOH) would work with them to map out their activity for past 14 days, for contact tracing. And if the person has the TraceTogether app installed,	The app exchanges Bluetooth proximity data with nearby phones running the same app. This data is anonymised and encrypted, and does not reveal the user's identity or the other person's identity. In order to measure distance, information about the phone models and signal strength recorded is also shared.  If a person becomes ill with Covid-19, they can grant MOH access to their Bluetooth proximity data, to assist the MOH with contract tracing.	TraceTogether complements contact tracing and is not a substitute for professional judgment and human involvement in contact tracing.
Slovak Republic	<a href="#">Covid19 ZostanZdravy</a>	Private	-	Email address for registration  GPS  Bluetooth information	<a href="#">Stop the spread of COVID-19 by supporting people in quarantine, notifying people when they are approaching a person who has tested positive for Covid-19 (50 metres), and retrospectively tracing people who have had contact with a person that has since tested</a>	Health authorities	<a href="#">User give app permission to access Bluetooth, GPS and notifications. If device recognises another close Bluetooth device, and that contact exceeds a particular time duration, the application will record the GPS position and send an anonymous log of both devices to the server.</a>  <a href="#">If a person becomes sick with COVID-19, they provide health authorities with their unique ID number. This ID number is added to the system and all devices that were in contact or come into contact with the carrier receive a notification warning them about exposure to Covid-19.</a>  After receiving a notification, the user decides when they get tested. Users can order tests directly from the application and can have results received through unique code on app. If anonymous identifier is marked as positive, the app will	

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					<a href="#">positive for COVID-19.</a>		<p>automatically anonymously notify other users who have been in contact with the infected person.</p> <p>App also monitors movement of people in mandatory quarantine. If a person leaves their quarantine address for longer than a specified time, they will be notified by the app to return to quarantine.</p> <p>The application also shows a map with the latest information about infections in individual districts. If you are approaching a person with a positive test, the application will show you the date, time and estimated position with an accuracy of 50 meters.</p>	
South Korea	Corona-100m	Private	Voluntary	Data from public government sources	<a href="#">Provides user with detailed information about COVID-19 patients, including where they visited, and how close they are to COVID-19 patients.</a>	N/A	<a href="#">Collects data from public government sources and alerts users of any diagnosed Covid-19 patient within a 100-meter radius along with the patient's diagnosis date, nationality, age, gender, and prior locations.</a>	<a href="#">Privacy concerns in cases where enough information is made public to infer the patient's identity (even though app supposed to be 'anonymous').</a>
South Korea	Corona Map	Private	Voluntary	Data from public government sources	<a href="#">Plots the locations of people with COVID-19 so users can avoid these areas.</a>	N/A	<a href="#">The app uses government data available online to map the locations where people known to have had COVID-19 have been.</a>	<a href="#">Privacy concerns in cases where enough information is made public to infer the patient's identity (even though app supposed to be 'anonymous').</a>
South Korea	<a href="#">Location Notification</a>	-No info available	No info available	GPS*	No info available	No info available	No info available	
Spain	CoronaMadrid	Public with private assistance	Voluntary	GPS location, symptoms tracker, registration info	Symptom tracker to help with burden on telehealth; location information "to better organize the medical resources"	Private companies in development, state security forces and judicial bodies	Centralised	Doesn't appear to be a contact tracing app, more of a symptom tracker with the use of location as an additional intelligence source. Privacy policy could not be found.
Thailand	Mor Chana	Public / private	Voluntary	Bluetooth and GPS, rego info is just mobile number. Health info also	Contact tracing	Health authorities	Users answer health assessment questions and receive risk level results. These risk level results are then given for areas – it looks as though the risk levels for areas are published. Users asked to share Bluetooth/gps info only when contacted for contact tracing purposes, is stored locally otherwise.	Data from the app will be processed by the DDC iLAB analytic platform, which combines epidemiology analysis and <a href="#">AI</a> to identify users who may be in proximity to infected people

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Turkey	Korona Onlem	Public with assistance of telecommunication providers	Those with the virus are required to download the app. Unclear for others.	Symptom tracker, GPS location for contact tracing	Contact tracing, app is also used to inform the public about numbers of cases, tests, recovered and fatalities.	Unclear	The application shows the risk level, the density of infected people and the density of people in isolation at the users' locations.	<a href="#">Has been downloaded</a> more than 1 million times in one day (as at 19 April)
Ukraine	Act at Home	Public	Voluntary – individuals required to self isolate can use app or presumably checked by state officials	GPS	To confirm that individuals who are required to self-isolate are self-isolating in their place.	Unclear	Individuals who are required to be self isolating receive message at intervals and need to take photos of your face and provide it, with the geolocation of the photograph . The app also links to driver's licenses and vehicle registration information.	Sounds similar to Poland's solution. The app reportedly <a href="#">has 2 million users</a> .
USA	Private Kit: SafePaths	Private (MIT)	Voluntary	GPS	To assist with contact tracing	Unclear – MIT website says "public health researchers"	The app collects users' location data, keeping a time stamped log every 5 minutes, for up to 28 days. The data stays on the phone and is encrypted – you can choose to send your location data to public health researchers if you test positive. A second roll out of the app also includes a notification feature where individuals who have crossed paths with those who have tested positive are notified.	The app is <a href="#">open source</a> .