



大阪大学
社会技術共創研究センター

ELSI NOTE

No. 04

10 perspectives on COVID-19 Contact-Confirming Application (COCOA) and ethical, legal and social issues (ELSI) (English translation)

October 19, 2020

Authors:

Atsuo Kishimoto: Research Center for Ethical, Legal and Social Issues, and Institute for Datability Science, Osaka University

Fumiko Kudo: Research Center for Ethical, Legal and Social Issues, Osaka University

This note is a translation of the original Japanese version into English. The original text can be read at the following URL. <https://elsi.osaka-u.ac.jp/research/443>

Introduction

When emerging technologies such as contact tracing apps are introduced into society, they often do not meet existing social norms. As a result, ethical, legal, and social issues (ELSI) may arise, and the use of technology may not be promoted due to excessive fear, or the technology may be rejected by society due to the emergence of problems. Since many information technologies also have aspects as surveillance tools, it is essential to deal with risks such as privacy and security. As a result, some countries and regions have begun to involve data protection agencies. For example, in Europe, guidelines have been developed and toolboxes have been provided by them. We believe it is possible to achieve both privacy protection and infectious disease control rather than trade-offs.

In preparation for the introduction of the contact tracing app in Japan, we decided to summarize from the user's point of view, from what perspective we would decide whether to download the app. On April 30th, when there was almost no information about the app, the first version of this "10 perspectives" document was published as ver.0.8 on the website. Next, on May 12, "10 Perspectives" was updated based on the information provided by the government as ver. 0.9. Finally, this note was released as ver.1.0 on June 18, the day before the release of the app called "COVID-19 Contact-Confirming Application (COCOA)".

In the original Japanese version, based on the materials posted on the official page of the Ministry of Health, Labor and Welfare, we have summarized each of the items listed in ver.0.9 from the perspective of how they responded or did not. The overall trends were as follows. As for the technology itself, there were many parts that have been addressed, but as for the background surrounding the app and issues after release, there were still a considerable number of items that could not be dealt with.

Note that this English translation shows only the items included in the original "10 perspectives".

10 Perspectives

1. Confirm the purpose of the technology (app)

a. Is the purpose clearly stated?

- i. Is it an aid for health authorities to identify close contacts, or is it to encourage informed individuals to change their behavior?
- ii. Is it clear what the technology (app) is trying to achieve? How much uncertainty is involved in whether it can be achieved?
- iii. Is it properly positioned in the national public health strategy? Is it part of an “exit strategy” that eases restrictions on movement and meetings?
- iv. Is it a complement or alternative to human contact tracing?
- v. The required penetration rate (app usage rate) will vary depending on the purpose, but how much is it?

b. Is the mechanism of contact tracing technology explained in an easy-to-understand manner?

- i. Is it a “centralized” type or “decentralized” type?
- ii. Is the presence or absence of infection determined by self-report or positive diagnosis?
- iii. How is it joined with “Health Center Real-time information-sharing System on COVID-19 (HER-SYS)” ?

- c. Do you think your benefits outweigh the risks you may have?
- d. Do you think the benefits of society as a whole outweigh the risks that may exist?

2. Make sure that the use of the app is voluntary

- a. Are you in a situation where you actually have to download the app?
 - i. For example, are there any restrictions such as not being able to go out, enter the store, receive services, or be hired without presenting the app?
 - ii. Are there any cases where employees are forced to download apps by their employers?
 - iii. Are they at the same level as previously accepted levels, such as when vaccinations are required when traveling abroad?
- b. Is the function set to be on / off even if the app is downloaded or installed in the OS?
- c. If the app keeps running, is the usability of other apps and battery durability sufficiently guaranteed?

3. Know the meaning and accuracy of the notified “close contact”

- a. Is the basis for setting the interpersonal distance and contact period clear? What epidemiological findings are they based on?**
- i. Are important factors other than distance and time considered (outdoor or indoor, well-ventilated or not, masks, protective clothing, etc.)? If not, is that explained?
 - ii. Is it based on simple thresholds (“distance” and “exposure time” with positives)? Is the risk value calculated by some algorithm?
- b. How accurate is the detection of close contact? How likely are you to be falsely notified or not notified?**
- i. Using data collected by health center staff to improve algorithms for tracing and notifying close contacts will improve the accuracy of close contact determinations, but may also increase privacy risks.
- c. Is the app automatically judging and notifying the close contact, or is there a mechanism for people to check in the final judgment?**
- i. In the former case, is there a mechanism to ensure the appropriateness of the algorithm (such as the absence of bias)?
 - ii. In the case of “decentralized” type, the staff of the health center cannot know who was judged to be a “close contact”. Therefore, is it recommended that the person who receives the notification contact the health center when making the notification?

- iii. In that case, it would be desirable for health center staff to provide advice and appropriate care to “close contacts,” but this would increase privacy risks.
- d. **Is the notification that there was close contact just a notification that there was, or does it include the date and time?**
 - i. If you know the timing of close contact, you can remember whether you wore a mask or had a conversation at that time, so there is an advantage that you can judge the magnitude of the risk, but on the other hand, it will increase the chances of knowing who the positives are.
- e. **Is there a mechanism to readjust the “close contact” setting with expert advice in a changing situation? Will users be notified if they readjust? Will be the rationale shown?**

4. Understand what your app can and cannot do

- a. **Is it explained that the “close contact” that can be tracked by the app is only a part of the potential for infection?**
- b. **Is it explained that the percentage of people who have a smartphone with the app installed changes the percentage of people who have close contacts?**
- c. **Is it explained that the lack of notification does not mean that there is no potential for infection.**

d. Does the app have Interoperability?

- i. For example, if different apps are adopted for each municipality, it may not make sense as a countermeasure.
- ii. If the Japanese app is not interoperable with those of other countries, will it continue to be restricted by overseas movement in the future?

e. Is there any possibility that it will be linked to another app or medical health database in the future?

- i. If the accuracy of close contact judgment is low, it may be necessary to link with location data and PHR as a countermeasure against infectious diseases.

5. Understand how your data is used

a. Is the data stored in the terminal and the log provided to the server when an infection is found to be the minimum necessary for the purpose?

b. Is the identity of the app user unknown?

- i. Are measures taken to avoid personal identification, including conducting a risk assessment of reidentification when matched with other data?
- ii. Is the temporary ID of the terminal generated pseudo-randomly and changed regularly?

- c. **Is there a mechanism that it is not possible to know who is positive when notified that there has been close contact with a positive person?**
 - i. If it is recommended that the notified person contact the health center, is there a risk of discovering who was positive in the interaction with the staff?
- d. **Is there a system in which consent is obtained each time contact information is provided to the government?**
- e. **Is it specified when the terminal data or the data provided to the server will be deleted?**
 - i. How many days is it supposed to be automatically deleted?
 - ii. Will the app be disabled after the end of the infection? Will it be removed from the OS?

6. Make sure your data is securely managed

- a. **When is the terminal data provided to the central server?**
- b. **Are security measures in place throughout the life cycle?**
 - i. Are effective cybersecurity measures in place to protect data availability, reliability, and confidentiality?
 - ii. Is cybersecurity verified by a third party?

7. Know who is supposed to have access to what data

- a. **Who is responsible for the development and operation of the app?**
- b. **Who approves the app and what kind of procedure?**
- c. **What is the role of the government in treating personal data of positive individuals?**
 - i. Coordination with health centers will be needed to ensure that “positives” are positive and prevent false notifications.
- d. **Is it a purpose-specific treatment of data?**
 - i. For example, in order to prevent false notifications, are there any considerations such as sending a one-time password for positive declaration to positive persons when cooperating with the public health center?
- e. **Will data be shared with third parties? Is there a mechanism to obtain consent each time it is shared with third parties?**
 - i. Is it possible that information will be provided by the requests from the Police or the Bar Associations?
 - ii. Is it possible that the data will be retained for research purposes?
- f. **Is there an immediate and irreversible method of erasing misprocessed data?**

8. Check if there is consideration for people who cannot use the app

- a. Are there alternatives for those who can't or don't want to use the app?
 - i. Is care taken so that they do not suffer any disadvantages?
 - ii. Is it guaranteed that they will not be penalized for testing or treatment?
 - iii. Is it possible to consider alternative means (for example, wristbands) to those who wish?
- b. Is there an age limit for using the app? (For example, children under the age of 18 cannot use the app)
- c. Is there any substitution for those who cannot avoid (close) contact with potentially infected people? Is it possible to disable notifications if they are properly protected?
- d. Is there a safeguard to ensure the prevention of prejudice against positives, close contacts, people living or doing economic activities in high-risk areas?

9. Know what to do after knowing your own "close contact" with positives

- a. Is there a mechanism to prevent false notifications?

- b. Is it clear what action to take when notified of close contact?**
 - i. Is the action to be taken clearly instructed at the time of notification?
 - ii. If it is recommended to contact the health center when notified, are the advantages and disadvantages of contacting clearly stated?
 - iii. Will the informed people rush to medical institutions and put pressure on medical resources?
- c. Is there a contact point for anyone to consult if in doubt?**

10. Check if there is a mechanism for third party experts to review

- a. Is there an expert organization that supervises and advises on application development and operation from the standpoint of a third party?**
 - i. If an expert organization is set up, does it supervise only the development stage of the app or continuously supervise the operational stage?
 - ii. How much authority is given to that expert organization?
- b. Was there a process to identify opinions and concerns from diverse stakeholders before the download began?**
- c. Before the download starts, is data policy and privacy guideline formulated and privacy impact assessment published**

not only for the app but also for systems to be linked and the entire network?

- d. Is there a mechanism for users and experts to regularly evaluate and verify whether the app achieves its original purpose through certain information disclosure?
- e. After the situation is over, is the ex-post evaluation / verification conducted by a third party and the results are to be published?

References (Arranged in chronological order)

- Jessica Morley, Josh Cowls, Mariarosaria Taddeo & Luciano Floridi, Ethical guidelines for COVID-19 tracing apps, Nature (28 May 2020)
<https://www.nature.com/articles/d41586-020-01578-0>
- UK Parliament, Human Rights Joint Committee, Report: Human Rights and the Government's Response to Covid-19: Digital Contact Tracing (7 May 2020)
<https://committees.parliament.uk/committee/93/human-rights-joint-committee/news/146351/report-on-the-contact-tracing-app-published/>
- Privacy and Ethics Recommendations for Computing Applications Developed to Mitigate COVID-19 White Paper Series on Pandemic (7 May 2020)
<https://drive.google.com/file/d/1m0AT21dS2XJ6JIGMgo7SuLSLveWIO8WK/view>
- Data Protection Impact Assessment NHS COVID-19 App PILOT LIVE RELEASE Isle of Wight (6 May 2020)
<https://faq.covid19.nhs.uk/DPIA%20COVID-19%20App%20PILOT%20LIVE%20RELEASE%20Isle%20of%20Wight%20Version%201.0.pdf>
- Tom Chivers, Pandemics and privacy: COVID-19, contact tracing apps and protecting our privacy, Imperial College London, (4 May 2020)
<https://www.imperial.ac.uk/stories/pandemics-and-privacy/>
- Marion Oswald, Towards a Trustworthy Coronavirus Contact Tracing App, Royal United Services Institute (4 May 2020)
<https://rusi.org/commentary/towards-trustworthy-coronavirus-contact-tracing-app>
- ICO, COVID-19 contact tracing: data protection expectations on app development (4 May 2020)
<https://ico.org.uk/about-the-ico/news-and-events/news-and-blogs/2020/05/covid-19-contact-tracing-data-protection-expectations-on-app-development/>
- Ada Lovelace Institute, Provisos for a Contact Tracing App (4 May 2020)
<https://www.adalovelaceinstitute.org/our-work/covid-19/provisos-for-a-contact-tracing-app-4-may-2020/>
- Jessica Morley, Josh Cowls, Mariarosaria Taddeo and Luciano Floridi, Ethical Guidelines for SARS-CoV-2 Digital Tracking and Tracing Systems (1 May 2020)
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3582550

- Graham Greenleaf and Katharine Kemp, Australia's 'COVIDSafe App': An Experiment in Surveillance, Trust and Law (2020) University of New South Wales Law Research Series 999, 17 Pages Posted: 30 Apr 2020
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3589317
- Nature Editorial, Show evidence that apps for COVID-19 contact-tracing are secure and effective (29 April 2020)
<https://www.nature.com/articles/d41586-020-01264-1>
- Anne Kerr Twenty questions about the NHSX contact tracing app, (Nuffield Council on Bioethics (28 April 2020)
<https://www.nuffieldbioethics.org/blog/twenty-questions-about-the-nhsx-contact-tracing-app>
- Joint Statement on Digital Contact Tracing by Alessandra Pierucci, Chair of the Committee of Convention 108 and Jean-Philippe Walter, Data Protection Commissioner of the Council of Europe (28 April 2020)
<https://rm.coe.int/covid19-joint-statement-28-april/16809e3fd7>
- OECD : Tracking and tracing COVID: Protecting privacy and data while using apps and biometrics (23 April 2020)
<https://www.oecd.org/coronavirus/policy-responses/tracking-and-tracing-covid-protecting-privacy-and-data-while-using-apps-and-biometrics/>
- EDPB, Guidelines 04/2020 on the use of location data and contact tracing tools in the context of the COVID-19 outbreak (21 April 2020)
https://edpb.europa.eu/news/news/2020/european-data-protection-board-twenty-third-plenary-session-edpb-adopts-further-covid_en
- European Parliament, EU coordinated action to combat the COVID-19 pandemic and its Consequences (17 April 2020)
https://www.europarl.europa.eu/doceo/document/TA-9-2020-0054_EN.pdf
- European Commission, Coronavirus: An EU approach for efficient contact tracing apps to support gradual lifting of confinement measures (16 April 2020)
https://ec.europa.eu/commission/presscorner/detail/en/ip_20_670
- EFF, The Challenge of Proximity Apps For COVID-19 Contact Tracing (April 10, 2020)
<https://www.eff.org/deeplinks/2020/04/challenge-proximity-apps-covid-19-contact-tracing>

- European Commission, Coronavirus: Commission adopts Recommendation to support exit strategies through mobile data and apps (8 April 2020)
https://ec.europa.eu/commission/presscorner/detail/en/ip_20_626
- Wojciech Wiewiórowski (EDPS), EU Digital Solidarity: a call for a pan-European approach against the pandemic (6 April 2020)
https://edps.europa.eu/sites/edp/files/publication/2020-04-06_eu_digital_solidarity_covid19_en.pdf
- European Group on Ethics in Science and New Technologies (EGE), EGE Statement on European solidarity and the protection of fundamental rights in the COVID-19 pandemic (2 April 2020)
https://ec.europa.eu/info/research-and-innovation/strategy/support-policy-making/scientific-support-eu-policies/ege_en

ELSI NOTE No. 04

10 perspectives on COVID-19 Contact-Confirming Application (COCOA) and ethical, legal and social issues (ELSI) (English translation)

October 19, 2020

Research Center on Ethical, Legal and Social Issues (ELSI)
Osaka University

Techno-Alliance Building C 6th floor
Osaka University
Yamadaoka 2-8, Suita, Osaka 565-0871 JAPAN
TEL +81-6-6105-6084
<https://elsi.osaka-u.ac.jp>