

DCTT Evaluation Protocol

Version 2.0 | Created June 16, 2020 | Last Updated Feb 22, 2021

Introduction

This survey is part of the Location Tracking, Contact Tracing, and Geospatial Privacy During COVID-19 study. This National Science Foundation funded research examines digital contact tracing technologies (DCTT) being used by public health authorities in the United States to respond to the spread of SARS-COV-2.

We are collecting details about the design and operation of the DCTT systems. We are particularly interested in the geospatial technologies used in these systems, the location data they produce, and how that data is managed, stored, transferred and shared.

You are being contacted because you have been identified as someone with relevant information about the development of DCTT in your state.

We invite you to complete the following online survey. The survey is estimated to take between **10-15 mins to complete**. The survey is:

- **Voluntary:** Your participation is completely voluntary. You can decide not to participate in this research with no penalty.
- **Confidential:** We will not collect any information about your individual activities or your opinions related to DCTT. We are only gathering information about the technologies and system themselves. Your response will be anonymized using a case ID.
- **Minimal Risk:** Some people may not wish to share information about the DCTT being developed and deployed in their area, and if they do, may feel uncomfortable. You may choose not to answer questions, or stop at any time.

Complete information about the survey and the study is available at <https://peter-kedron.github.io/COVID-19-Geospatial-Technologies-For-Digital-Contact-Tracing/>.

If you have any questions or concerns about the *Location Tracking Contact Tracing, and Geospatial Privacy during COVID-19* study, contact Dr. Peter Kedron (Arizona State University) directly via his email at Peter.Kedron@asu.edu.

Answering the questions provided indicates that you have read and understood the information provided in this document, and that you are voluntarily providing data about DCTT to this study.

1. System Administration and Key Features

These questions gather some general administrative information and a few key pieces of information that filter the questions asked in the remainder of the survey.

- **Filter 1** - establishes if the systems collect location data, proximity data, or both
- **Filter 2** - establishes if user data is stored locally or in a central repository

Instructions: Please answer the following questions about the administration and some key features of the DCTT system to the best of your ability

1. Which state is the DCTT being developed for or used in

>> Text Answer (Dropdown list of all the states)

2. What is the name(s) of the application (App) or applications (Apps) that will be used in this state.

>> Text Answer (List of radio buttons (multi-select): Care19 Diary, CRUSH COVID RI, Healthy Together, PathCheck SafePlaces, Other (Please specify), No name has been selected yet)

3. Which agency/department is responsible for developing and administering the DCTT systems in your state? Please enter all those that apply.

>> Text Answer (will need multiple text box windows here in case there are multiple agencies/departments. Maybe 5 boxes?)

4. Is the agency/department developing the DCTT system working with an outside collaborator or contractor to create the DCTT?

>> Yes/No

If yes >> What is the name of the outside developer?

>> Text Answer

5. Which application programming interface (API) or software is the DCTT built on? (select)

>> Multiple Choice

- a. Google Android Exposure Notification Indirect API
- b. Decentralized Privacy-Preserving Proximity Tracing (DP3T)
- c. Other (please specify)
- d. I don't know

6. Is the DCTT system open source?

>> Yes/No

If Yes, >> Please share where the code for the system is available?

>> Text Answer

7. From the list below, please select all of the technologies the DCTT system uses to collect data about a user's location or proximity to other people ?

>> Multi-select

- a. Global Navigation Satellite System (e.g., GPS)
- b. Bluetooth
- c. WiFi
- d. Cellular

8. Which of the following types of spatial data does the DCTT system have the capacity to collect?

(Filter 1 - Data Collection)

- a. Data on the proximity (e.g., within 6ft) of one user to another user
- b. Data on the location of the user (e.g., the latitude and longitude of the user)
- c. Both proximity and location data are collected about a user

If the answer to 8 is b or c

8a. Where is information about the location of a user stored once it is collected?

(Filter 2 - Data Storage)

- d. This data is stored on the user's device
- e. This data is stored in a central data repository

If the answer to 3 is a or c

8b. Where is information about the proximity of users, or the list of contacts that information produces, stored once it is collected?

(Filter 2 - Data Storage)

- f. This data is stored on the user's device
- g. This data is stored in a central data repository

9. Will any of the location or contact data collected by the DCTT system be used to enforce behavior (e.g., enforcing compliance with stay at home order)?

>> Yes/No

If yes >> Please briefly describe the types of enforcement the system will be used for

>> Text Answer

2. Contact Definition

These questions determine how the DCTT system defines when two people have come into contact.

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system defines two people as being in contact with another.

1. Please specify how close two users need to be to one another for the DCTT system to consider them to be in contact with one another? Be sure to include if the distance is in feet or meters

>> Text Answer (dropdown for feet and meter)

2. Please specify how long do two users need to be 'near' one another for the DCTT system to consider them to be in contact with one another? Be sure to include if the time is in seconds or minutes.

>> Text Answer (dropdown for seconds and minutes)

3. Is a user able to manually enter or log contact with another person in the DCTT system if they wish to do so?

>> Yes/No

4. Is a user able to manually enter or log their location history in the DCTT system if they wish to do so?

>> Yes/No

3. Notice and Consent

These questions determine how the DCTT system provides notice to users about data collection and management practices and when/how the system gathers user consent.

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system notifies users about data protocols and gathers their consent.

Notice

1. From the list below, please select all the system details a user is informed of prior to using the DCTT system.

>> Multi-Select

- a. The purpose of data collection and its intended uses (e.g., prevention efforts)
- b. The types of data that will be collected (e.g., location data)
- c. How the data will be stored (e.g., on a user's phone)
- d. How long collected data will be stored (e.g., 14 days)
- e. How the data is transferred (e.g., encrypted transfer)
- f. With whom the data will be shared (e.g., state agencies, medical professionals)
- g. others (please specify)

2. How is information about data collection, storage, and transfer policies provided to potential users?

>> Multiple Choice

- a. Through a terms and conditions statement that accompanies the app
- b. other (please specify)

Consent

1. How does the DCTT system obtain consent from the user to collect data?

- b. By downloading the DCTT, the user agrees to the terms and conditions of use
- c. By selecting a checkbox that acknowledges they have read and agree to the terms and conditions of use
- d. other (please specify)

2. When a user consents to the terms of using the DCTT system, is that user consenting to both the collection of data and the sharing of that data with relevant officials?

>> Yes/No

- a. Yes, the user consents to the DCTT collecting their data and automatically sharing that data with the relevant state agencies and departments
- b. No, the user consents to data collection, but their data is not automatically shared with the relevant state agencies and departments

3. Can a user choose to stop using the DCTT system at any time?

>> Yes/No

If yes, >> 3a. Please select all the following steps a user needs to take to end their participation.

>> Multi-Select

- a. The user stops using the DCTT, but does not delete it
- b. The user uninstalls and deletes the DCTT from their device
- c. The user must unenroll using a website
- d. The user must directly contact the DCTT system administrators to give notice that they wish to end their participation
- e. Other (Please specify)

If Yes, and **Filter 1** indicates location data is collected

>> 3b. If a user chooses to discontinue their use of the DCTT system, is their location data automatically deleted from all of the places where it is stored (e.g., on their phone and on a central database)?

>> Yes/No

If No, >> What steps does the user need to take to have their data deleted? (If you do not know, please indicate 'I don't know')

>> Text Answer

If Yes, and **Filter 1** indicates proximity data is collected

>> 3b. If a user chooses to discontinue their use of the DCTT system, is the contact log created from their proximity data automatically deleted from all places where it is stored (e.g., on their phone and on a central database)?

>> Yes/No

If No, >> What steps does the user need to take to have their data deleted?

>> Text Answer

4. Data Collection

These questions clarify several details about how the DCTT system collects data from users

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system collects user data.

The Data Collection Process

1. Is a user able to select and customize what data is collected by the DCTT system?

>> Yes/No

2. Is a user able to select and customize when data is shared with the DCTT system?

>> Yes/No

3. Is a user able to select and customize with whom their data is shared with?

>> Yes/No

4. Does the DCTT have measures in place to detect and eliminate the introduction of false data?

>> Yes/No

5. Please add any additional comments you believe would be helpful in clarifying your answer to the questions above

>> Text Response

6. Please select any of the following types of information that the DCTT system collects about the user or their device.

>> Multi-select

- a. Name
- b. Address
- c. DCTT usage information (e.g., total usage time)?
- d. Demographic data (e.g., ethnicity, age)
- e. Economic data (e.g., income)
- f. Contact information (e.g., phone, email)
- g. Data from other applications (e.g., Facebook)
- h. Other, please specify
- i. The DCTT system does not access or collect any of the data above

Collecting COVID-19 Testing Information

1. If a user is diagnosed as COVID-19 positive, how does that user notify the DCTT system? Please select any that apply.

>> Multi-Select

- a. The user completes a short form that gathers information about the diagnosis
- b. The user changes their status to COVID-19 positive in the DCTT application
- c. The user enters a testing ID or some other form of case number indicating a positive test
- d. Other, please specify

2. When a user reports as COVID-19 positive, please select all of the following forms of additional information that the DCTT system collects from the list below.

>> Multi-Select

- a. Date of diagnosis
- b. Location of test
- c. Additional health data (e.g., other medical history, risk factors)
- d. Home address
- e. Additional demographic information (e.g., age, race)
- f. Travel history
- g. Other, please specify

5. Location Data Collection

These questions clarify several details about how the DCTT system collects location data from users

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system collects location and proximity data from a user.

If **Filter 1** indicates that location data is collected ask question 1 and 2 below

1. Please select from the following list all of the technologies the DCTT system uses to gather data about the location of a user (e.g., their latitude and longitude)

- a. Global Navigation Satellite System (e.g., GPS)
- b. Bluetooth
- c. WiFi
- d. Cellular

2. Is data about the location of a user collected automatically by the DCTT system?

>> Yes/No

2a. Is a user able to turn automatic location data collection on and off in the DCTT system?

If 2 Yes >> 2b. Does the DCTT App need to be open to collect location data?

>> 2c. When the DCTT App is automatically collecting data about a user's location, how frequently is that data collected?

>> Multiple Choice

- a. location data is collected every second
- b. location data is collected every 1-5 seconds
- c. location data is collected every 6-30 seconds
- d. location data is collected every 31-60 seconds
- e. location data is collected every 1-5 mins
- f. location data is collected at over 5 min intervals

>> 2c. Is the DCTT App recording information about the spatial accuracy of an estimated location as it collects user data?

>> Yes/No

If 2 No, >> 2b. How is location data collected by the DCTT system?

>> Text Answer

If **Filter 1** indicates that proximity data is collected ask questions 1 and 2 below

1. Please select from the following list all of the technologies the DCTT system uses to gather data about the proximity of users (e.g., estimated distance apart), or make a contact list based on user proximity.

- e. Global Navigation Satellite System (e.g., GPS)
- f. Bluetooth
- g. WiFi
- h. Cellular

2. Does the DCTT system automatically collect data about the user's proximity to other users, as well as the contact list that data can be used to generate?

>> Yes/No

If Yes, >> 2a. Do both the user and the surrounding individuals need to have the DCTT installed on their devices to collect proximity data and create contact lists?

>> Yes/No

If No, >> How is the proximity information collected?

>> Text Answer

>> 2b. When the DCTT App is automatically collecting data about a user's proximity to others, how frequently is that data collected?

>> Multiple Choice

- g. proximity data is collected every second
- h. proximity data is collected every 1-5 seconds
- i. proximity data is collected every 6-30 seconds
- j. proximity data is collected every 31-60 seconds

k. proximity data is collected every 1-5 mins

l. proximity data is collected at over 5 min intervals

>> 2c. Does the DCTT App record an estimate of the distance between the user and surrounding individuals during proximity data collection and contact list creation

Yes/No

>> 2d. Is the DCTT App recording information about the spatial accuracy of the proximity data as it collects user data and generates contact lists?

>> Yes/No

>> 2e. Does the DCTT App record the length of time the user and surrounding individuals were in contact during proximity data collection and contact list creation

Yes/No

If No, >> 2a. How is proximity data collected by the DCTT system?

>> Text Answer

6. Data Storage and Management - Data at Rest

These questions clarify several details about how the DCTT system stores location data from users

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system stores location and proximity gathered data from a user.

If **Filter 1** indicated location data is collected and **Filter 2** indicates that location data is stored on a user's device

1. While being stored on their device, is user location data linked to any information that could be used to identify the user?

>> Yes/no

If Yes >> 1a. Please select all of the following forms of identifiable information the data is linked to

- a. Name
- b. Home address
- c. Third party user account information (e.g., Apple ID)
- d. Other, please specify
- e. None of the above

2. Are users allowed to inspect and edit their location data?

>> Yes/No

3. Will a user's location data be automatically destroyed after a set period of time?

>> Yes/No

If No, >> Can a user manually delete their location?

>> Yes/No

If Yes, >> 3a. Does the destruction of the user's location data depend on a user's COVID-19 test result?

>> Yes/No

If 3a is Yes, >> How many days must pass without a COVID-19 positive test result for the user's the data to be destroyed by the DCTT system

>> Text Answer

If 3a is No >> How many days must pass for the user's the data to be destroyed by the DCTT system?

>> Text Answer

If **Filter 1** indicated proximity-based contact data is collected and **Filter 2** indicates that proximity data is stored in a central repository

1. While being stored in a central repository, is user location or proximity-based contact data linked to any information that could be used to identify the user?

>> Yes/no

If Yes >> 1a. Please select all of the following forms of identifiable information the data is linked to

- a. Name
- b. Home address
- c. Third party user account information (e.g., Apple ID)
- d. Other, please specify
- e. None of the above

2. Please select the best description of the agency responsible for hosting and maintaining the central repository that houses user location or proximity-based contact data

>> Multiple Choice

- a. A state government public health agency or office
- b. Another form of state agency or office
- c. A company involved in the development of the DCTT system
- d. A share responsibility between a state agency and a collaborating company
- e. A university partner
- f. Other, please specify

If an answered c, d, e, f

>> 2a. Please tell us how your agency accesses contact data gathered by the DCTT?

>> Text Response

>> 2b. Please select all of the following that the outside agency is explicitly prohibited from pursuing

- a. Creating identifiable data
- b. Sharing or selling the data to third parties
- c. Combining the data with other data about the user
- d. Other, please specify

3. Will a user's proximity-based contact data be automatically destroyed after a set period of time?

>> Yes/No

If No, >> Can a user manually delete their location?

>> Yes/No

Is manually deleted data permanently removed from the central repository?

>> Yes/No

If Yes, >> 3a. Does the destruction of the users location data depend on a user remaining COVID-19 negative

>> Yes/No

If 3a is Yes, >> How many days must pass without a COVID-19 positive test result for the user's the data to be destroyed by the DCTT system

>> Text Answer

If 3a is No How many days must pass for the user's the data to be destroyed by the DCTT system?

>> Text Answer

7. Data Transfer - Data in Motion

These questions clarify several details about how the DCTT system stores location data from users

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system transfers location and proximity data.

*If **Filter 2** indicates that location and/or proximity data is stored in a central repository*

1. Is any data that could be used to identify the user (e.g., their name, address) ever transferred to a central repository?

>> Yes/No

2. Is data that is transferred to a central repository encrypted while it is being transferred?

>> Yes/No

3. Is the transfer of data to a central repository automatic, or does a user have to initiate the transfer of data?

>> Automatic/User Initiated

If Automatic, >> 3a. Does the transfer of user data to the central repository follow a regular schedule (e.g., daily upload) or is it initiated by a specific event (e.g., an indication of COVID-19 positive)?

>> Regularly Scheduled/Event Initiated

If Event initiated >> Please list all the events that would initiate data transfer

>> Text Response

4. When user data is transferred into a central repository, is it received in large batches together with data collected from many users at the same time?

>> Yes/No

5. Is user location or contact data ever shared with parties outside of your agency?

>> Yes/No

If Yes, >> Is the user's data shared in an aggregated form?

>> Yes/No

>> Please select any of the following institutions/partners that user data will be shared with.

- a. Other state agencies or offices
- b. Federal agencies
- c. University partners
- d. Corporate partners
- e. other, please specify

8. User Notification

These questions clarify several details about if/how the DCTT system is used to notify users of COVID-19 contact

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system notifies users of potential contacts.

1. Is the DCTT app used to directly notify users that may have come into contact with a COVID-19 positive individual?

>> Yes/No

If Yes, >>1b. Please select all of the following forms of information the DCTT app shares with the user being notified of potential contact with a COVID-19 positive individual?

- a. The location of contact
- b. The date of contact
- c. The time of contact
- d. The duration of contact
- e. The distance of contact
- f. The sex of the contact
- g. The age of the contact
- h. The name of the contact
- i. The likelihood of exposure, or some other measure of risk
- j. Other, please specify

If Yes, >> 1a. Is notification automatic once a COVID-19 positive contact is identified?

>> Yes/No

If Yes, >> 1c. Is the user also contacted directly by a contact tracer via phone or email?

>> Yes/No

If No, >>1a. When a user is determined to have been in contact with a COVID-19 positive individual, and no automatic notice is given, how is the second individual contacted?

- b. A contact tracer calls the individual
- c. An email is sent to the individual
- d. other, please specify

2. Will contact tracers use the collected data to prompt the memories of users when creating contact lists for conventional tracing efforts?

>> Yes/No

3. Will user data be used to create location histories for users that test positive for COVID-19?

>> Yes/No

4. Will the user data be used to create location histories for users that never test positive for COVID-19?

>> Yes/No

9. System Assessment

These questions clarify several details about if/how the DCTT system will be assessed for effectiveness and meeting agency standards

Instructions: Please answer the following questions to the best of your ability to help us understand how and when the DCTT system will be assessed.

1. Have a set of criteria and system been created to assess the performance and impact of the DCTT system?

>> Yes/No

If No, >> Is a system of assessment currently being developed?

>> Yes/No

1. Will the impact and effectiveness of the DCTT system be assessed internally or by an outside independent third party?

>> Internally/By an Outside Party/ To be determined

2. Will any impact assessments be made publically available?

>> Yes/No/To be determined

3. Please select any of the following metrics that will be used when assessing the DCTT system.

- a. Number of users
- b. Number of contact notifications
- c. Number of positive cases recorded
- d. other, please specify
- e. To be determined

4. Is there a process in place to update the DCTT as new evidence becomes available?

>> Yes/No

5. Is there a plan to phase out the DCTT if the pandemic recedes, or the system is not proving effective?

>> Yes/No

If Yes, >> What are the criteria for reducing or ending the use of the DCTT?

>> Text Response