LINCOLN LABORATORY
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Situational Contact Tracing Test Procedure V. 2.0 (1.5)

Situational Test Goal

The goal of the situational test is to collect realistic Bluetooth RSSI data between two iPhones for a period of time at two different distances (i.e. within Coronavirus transmission distance, and a safe distance away) with the Testers in a variety of positions relative to each other. In the H0 test, the Testers are asked to remain 10 ft. or more apart for 4 minutes, while in the H1 test, the Testers stay within 6 ft. of each other for the same duration. The tests are conducted in a situational state chosen by the Testers such as phones in back pockets with one Tester sitting and the other walking about. The Tests may be conducted inside or outside so long as safe distancing protocols are maintained. At the end of each test, the data collected is posted to the Contact Tracing team site for evaluation.

Important Note: The Testers must be currently cohabitating to conduct this test, and must strictly obey social distancing guidelines if the test is conducted outside, in common areas or other publically accessible locations. Please visit the following CDC website for more social distancing guidelines and information:

https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html

Test Setup Instructions

Site Setup

Estimated time: 5 min
Materials: Tape measure, 6 and 10 ft. length of string

There are two tests, H0 and H1. In the H0 test, Testers are to be 10 ft. or more apart, and in the H1 test, Testers are to be 6ft. or closer to each other. It may be helpful to use a tape measure to give the Testers a frame of reference for distances they must maintain during the test. Lengths of string may also be useful to demonstrate separation distances for situations such as walking down a path.

Phone Setup

General Phone Setup

Estimated time: 5 min per phone
Materials: 2 iPhones for the **Testers**

For both iPhones:

- Ensure the phone has either a cell or WiFi connection with good signal so that data can be sent to the Contact Tracing evaluation team
- If the phone is in a case with an external battery, please remove it from the case.
- Ensure that power-save mode is not on; the screen should stay on throughout the data collect

    - From the iOS home screen, open the ***Settings*** app.
    - Tap ***Display & Brightness***, then scroll down and tap ***Auto-Lock.***
    - Change auto-lock timeout to **Never**. If **Never** is not an option then select **5 min**. **Note: For security, remember to change this back to its previous setting when you're done collecting data.**
    - Return to the home screen
- Ensure that the volume is ON and is loud enough to be heard when the phone is stored in a pocket or purse
- Ensure the phone has sufficient battery life to run the test (~ 20 minutes)

App Setup

Make sure the current version of the iPhone Contract Tracing app is on the both iPhones. Instructions for app download:

- Download **TestFlight** from the **App Store**
- Send the email address associated with your phone to Stacy (stacy.zeder@ll.mit.edu) to receive an invite to download the app
- Follow the link in the email to **TestFlight** and download "**BluetoothProximity**"

Conducting the Test

Estimated time: 5 min for either the H0 or H1 test. 10-15 min to complete both tests

Important Note: The Testers must be currently cohabitating to conduct this test, and must strictly obey social distancing guidelines if the test is conducted outside, in common areas or other publically accessible locations. Please visit the following CDC website for more social distancing guidelines and information:

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On both iPhones:

1. Open the **Bluetooth Proximity** app
2. Tap "**Select a test scenario**"
3. Tap "**Test Type**" and select "**Situational**"
4. Tap "**Test Scenario**" and select "**H0**" or "**H1**" **on both iPhones**

   Note: Both iPhones must be running the same Test Scenario to collect accurate data

5. Tap "**Next**"

Partner information:

6. Tap "**Partner User ID**" and input your partners User ID given to them when they registered if known
7. Tap "**Partner Device Model**" and input your partners iPhone model
8. Tap "**Partner On Body Location**" and select where your partner's iPhone will be placed during the test (i.e. Front Pocket, Back Pocket, Shirt Pocket, Hand or Purse – Figure 1). These locations can be different for each Tester.

9. Tap "**Partner Test Pose**" and select if your partner will be "**Sitting**", "**Standing**", or "**Moving**" during the entire test.
10. Tap "**Next**"

Self Information:

11. Tap "**My User ID**" and input your User ID given to you when you registered if known
12. Tap "**My On Body Location**" and select where your iPhone will be placed during the test (i.e. Front Pocket, Back Pocket, Shirt Pocket, Hand or Purse – Figure 1). These locations can be different for each Tester.
13. Tap "**My Test Pose**" and select if you will be "**Sitting**", "**Standing**", or "**Moving**" during the entire test
14. Tap "**My Environment**" and enter the two test conditions describing your environment
15. Tap "**Next**"

Posting Data:

16. Lastly, both Testers select where they would like to send their data. Tap "**MIT LL email address**" then tap "**Next**"

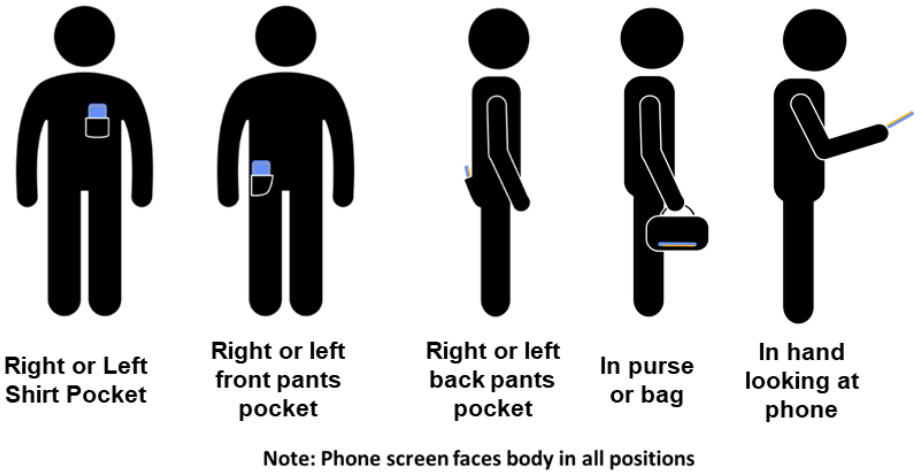

Figure 1

H0 Situational Test

1. Begin by having the Testers position themselves 10 ft. or further apart either indoors or outside, and in their respective chosen positions (Sitting, Standing or Moving)
2. The Testers then count down and tap "**Start**" at the same time, then place their iPhones in their respective chosen location (Front, Back, or Shirt Pocket, Hand or Purse). Phones should be placed in the location as the Testers normally would place them(i.e. Deep in a pocket, half hanging out, etc.) but with the screen of the phone always facing the body.

3. The Testers interact with each other as they wish (i.e. eat, do a puzzle, read, clean) for about 4 min., but never relocate their iPhone or leave their position if sitting or standing. If The Tester has chosen "**Moving**", they may move freely about while maintaining a 10 ft. distance from the other Tester.

   Note: If at any time there is an error in the testing procedure or a Tester wishes to stop the test, <u>both</u> Testers can hit "Abort" to stop data collection.

5. After 4 min, the app will alert the Testers with a tone to announce that the test is over
6. The Testers can then retrieve their respective iPhones and tap "**Send Data**". Please wait for confirmation that the data was sent properly.

H1 Situational Test

1. Begin by having the Testers position themselves 6 ft. or closer to each other either indoors or outside. Both Testers must be in their respective chosen positions (Sitting, Standing or Moving)
4. The Testers then count down and tap "**Start**" at the same time, then place their iPhones in their respective chosen location (Front, Back, or Shirt Pocket, Hand or Purse). Phones should be placed in the locations as the Testers normally would place them(i.e. Deep in a pocket, half hanging out, etc.) but with the screen of the phone always facing the body.
5. The Testers interact with each other as they wish (i.e. eat, do a puzzle, read, clean) for about 4 min., but never relocate their iPhone or leave their position if sitting or standing. If The Tester has chosen "**Moving**", they may move freely about while maintaining a 6ft. or closer distance from the other Tester.

   Note: If at any time there is an error in the testing procedure or a Tester wishes to stop the test, <u>both</u> Testers can hit "Abort" to stop data collection.

6. After 4 min, the app will alert the Testers with a tone to announce that the test is over
7. The Testers can then retrieve their respective iPhones and tap "Send Data". Please wait for confirmation that the data was sent properly.

If a Mistake is made during data collect:

Both Testers should hit "**Abort**" and restart the test.

If there is a problem with the app, any questions about the data collect protocol, contact blueproximity@ll.mit.edu or submit your comment via github (https://github.com/mit-ll/BluetoothProximity)

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