**Provisioning TotTags**

**General Functionality and Overview**

Initial memory setup

When accessible/charging…

**Initial One-Time Setup**

Prior to first use, each newly manufactured TotTag must be assigned a unique Device ID in the form c0:98:e5:42:XX:XX, where the final two “XX” groupings may include any hexadecimal numbers between 00-FF. The chosen Device ID should be notated on the TotTag board itself in the designated ID label area. Once completed, the device should be connected to a battery and then flashed according to the following procedure:

1. Connect a SEGGER JTAG programming cable from your computer to the designated header on the TotTag board.
2. Open a command prompt or terminal on your computer, and navigate to the location where the SociTrack source code is stored.
3. Enter make clean to ensure that the source code directory is clean.
4. From the root directory of the source code tree, issue the following command to ensure that the latest firmware has been fetched onto your computer: git pull
5. Issue the following command to flash the TotTag with its desired ID (replacing the “XX” values with the values you annotated on the board): make ID=c0:98:e5:42:XX:XX flash
6. If the flashing was successful, there should be no error messages on your terminal, and the TotTag should make a pleasant “plugged in and charging” sound when you place it onto a wireless charger.
7. Disconnect the programming cable, and reassemble the TotTag device case. Programming is complete.

After this initial setup procedure, you should never have to reflash the device with its Device ID again.

**Firmware Upgrades**

If future firmware upgrades require you to reflash the device at any time, simply follow the same procedure as outlined in the previous section; however, do no include the Device ID in the flash command. Flashing is achieved by simply entering the following at a command prompt: make flash

**Preparing for Live Experiments and Pilot Testing**

All setup and preparation for live pilot testing should be carried out through the *TotTag Dashboard* application. If you have not previously used the dashboard, you must first install it by opening a command prompt, navigating to the “SociTrack/software/management” directory, and entering: python3 -m pip install

Upon successful installation of the software, you can run it by typing “tottag” in a command prompt from any location or directory. You do not need to navigate to the SociTrack source code directory to run the application.

Usage of the *TotTag Dashboard* should be relatively straightforward, keeping in mind a few caveats:

* A TotTag device is ***only***discoverable and visible if it is currently being charged. If the device is not on a charger, it will not appear in the TotTag Dashboard.
* You will not be able to carry out any management functionality unless you are actively connected to a TotTag, so if the action buttons are grayed out, ensure that you are actually connected to a device.
* If, at any time, the application freezes or becomes unresponsive, you can always force it to close by returning to the terminal in which you entered the “tottag” command and simultaneously pressing CTRL+C. This should cause the application to forcefully terminate.

The suggested procedure for setting up a pilot deployment is the following:

1. Determine exactly how many TotTags will be needed for the deployment, and choose this number of devices to set aside.
2. Make a note on a piece of scratch paper about which Device IDs should be associated with which user-friendly labels.
3. Open the *TotTag Dashboard* and go to the “Deployment” page. Do not connect to any TotTags at this time.
4. Enter all relevant information about the upcoming deployment, including the mapping of TotTag labels to Device IDs.
5. Once all information has been entered, ensure that all relevant TotTags are discoverable in the device bar at the top of the dashboard.
6. Click the “t” button to start the deployment programming process for all relevant devices.
7. Once complete, it is a good idea to individually connect to each of the participating devices and verify that both the RTC clock and the experiment details are correct.

After the above steps have been completed, your devices are ready for shipment and will automatically shut down until time for the deployment to begin.

Upon completion of a pilot test, the ***first*** thing you should do upon receipt of the TotTags is to download all log files before putting the TotTags back into storage. TODO