Standard operating protocol

Setting up a RAPID monitor

1. First, gather the required components. Each RAPID should have:
   a. A Dylos DC1700 (or DC1100 if you are confident that your internet connection is reliable) plus power cable
   b. A Raspberry Pi loaded with the RAPID software image (consult a separate SOP to load this) plus power cable
   c. An HDMI or HDMI-DVI cable, plus a compatible monitor and a keyboard and mouse, to allow set up of the Raspberry Pi
   d. A MiFi device (Huawei E330) plus USB cable for power
   e. A FTDI serial-USB cable (to connect the RPi and the Dylos)
   f. A SIM card with sufficient data allowance for data to be sent (100MB+)
2. If you are setting up multiple devices, it may be useful to group them together at this point – e.g. Dylos 123 with the Raspberry Pi and MiFi which will be used in the study together.
3. Set up the Dyloses.
   a. Each Dylos will have a label with a code of the form "TackSHS_CC_XX", where CC is a country code and XX is a number. This will be used as the
   b. If Dyloses have been used for previous homes, **download data from them now!**
   c. Set the time and date on each Dylos using its menu system (with the Dylos on, press Mode and follow instructions).
   d. Clear data from each Dylos by pressing Mode again and pressing select (following the instructions on screen).
   e. Record that this was done in the ISSI devices spreadsheet.
4. Set up the MiFis.
   a. If they haven't got a label, label them with the Dylos's ID number (leaving out any '0's at the start)
   b. Take each SIM card and insert it in the appropriate part of the MiFi, under the battery area, then replace the battery.
   c. Turn the MiFi on by holding down the button on the front, and connect your laptop to it using the SSID details under the battery cover. Navigate to google.com and any other websites to check that it's working, double checking that you have no other active network connection (such as an Ethernet connection).
   d. Record the SSID details, SIM phone number and any other information in a spreadsheet
5. Set up the Raspberry Pis.
   a. If it doesn't have a label, label it on the bottom with the ID number from 3. (a).
   b. Plug the Raspberry Pi HDMI cable into the monitor, ensuring that the monitor itself has power. Plug the mouse and keyboard into the Pi and then power the Pi on via its micro-USB port.
   c. Check that the "RadioDylos" application starts up. If not, there may be an error in the configuration of the software. Reload the image and try again.
   d. Close the RadioDylos application and open the file browser (top left). Navigate to /home/pi/dylospi and double click on "radio_dylos.py". Press F5 to run the programme.

e. Check that the value of the first text box at the top of the application is the same as **the ID mentioned in 3 (a).** If not, enter the ID (be aware that this is case sensitive) and click "save settings".

f. If you changed the value, close the programme, then reopen it (as above) to check that the settings have been saved.

g. Turn on the MiFi to be paired with this Raspberry Pi. Wait until its lights are all green, then select the applicable wireless network (top right). Enter the SSID and wireless key information from the ISSI devices spreadsheet and wait to connect.

h. Open the Raspberry Pi's web browser and navigate to google.com (and any other websites you wish to try) to check the connection.

i. Shut down the Raspberry Pi by going to the menu at the top right and selecting "shutdown". Remove it from the monitor, keyboard and mouse.

j. Record the paired Dylos number, label and any other relevant information in your spreadsheet.

6. Put the RAPID together (this can be done in the monitoring location if it's difficult to transport the components together).

a. Plug the Dylos into a power outlet, affixing a converter if a different outlet type is required.

b. Prepare the Raspberry Pi by inserting its power cable, but **do not plug it in!**

c. Start the MiFi by pressing the button and leave until the lights go green continuously.

d. Plug the MiFi's short USB cable into one of the Raspberry Pi's USB ports, then plug the micro-USB end into the MiFi itself.

e. Plug the USB-serial cable into one of the Raspberry Pi's USB ports, then plug the serial end into the Dylos. You may need to apply a little sellotape to ensure it stays put.