RED = Important info to pay attention to
BLUE = Additional details in another document
PURPLE = Linux familiarity necessary

Step-1: FLASH-TV Housing set-up

- ☐ Find a place for the Housing near to the camera
- ☐ Connect the power plug of housing to the source (use power extension cords if necessary)
    - ☐ This boots the device directly
- ☐ Connect the monitor to power source on the same extension cord as housing
- ☐ Connect the monitor to HDMI output from housing
- ☐ Log into the device and test internet connection
- ☐ Check time synchronization on the device

Step-2: FLASH-TV camera set-up

- ☐ If the living room is so big that the camera cannot cover all the positions child can watch TV from, ask the family about the place where the child watches TV from the most to decide on the camera location and angles
- ☐ Set the camera at a height where it can get the best view of facial features like eyes of target child for gaze estimation
- ☐ Decide on the below camera mounting options (check slides for details)
    - ☐ Wall mounting (most preferred)
    - ☐ TV top mounting
    - ☐ Table top / Console top mounting
- ☐ Adhesives for mounting (check slides for details)
    - ☐ For most cases Command strips should be able to hold the camera
    - ☐ Strong adhesives like velcro need to be used on rugged surfaces like stone walls. On dry walls it peels off the paint.
    - ☐ Wipe the surface with alcohol wipes before sticking the adhesive strips
    - ☐ Wait for the surface to dry fully then attach the commando adhesives to the camera
    - ☐ Attach the Command strip to the wall then press the camera to make sure the strips are hooked properly
- ☐ Check that the camera is connected properly to the housing via USB
    - ☐ Run the cheese command to see the camera feed
    - ☐ Adjust the camera angle to best cover the places that the child watches TV from
    - ☐ Use the foam wedges to restrict the freedom of movement of the camera (check slides for details)

Step-3: FLASH-TV gallery building

- [ ] Make sure that there is a folder named `123XXX_data` where 123 is the family ID and XXX is the device ID in the home > user > data directory
    - [ ] If there is not, then full_initial_configuration.sh was not run properly or you need to run participant_change.sh
    - [ ] DO NOT manually rename the folder, run participant_change.sh and enter the new family ID (or run full_initial_configuration.sh if there are other issues)
- [ ] Now start the gallery building
    - [ ] From runtime_scripts run the build_gallery.sh script
    - [ ] Check slides for further instructions
        - [ ] Press `t` to track target child face
        - [ ] Press `s` to track sibling face
        - [ ] Press `p` to track parent face
        - [ ] Press `u` to untrack face
        - [ ] Press `q` to quit/close the program
- [ ] Select the faces
    - [ ] They should be in home > user > data > 123XXX_data > face_crops
        - [ ] Parent_faces, sib_faces, tc_faces
    - [ ] Select 5 faces for each identity (slides for instructions)
        - [ ] Put them in sib_faces_selected, tc_faces_selected, par_faces_selected
- [ ] Renaming the faces for the FLASH_TV set up (slides for instructions)
    - [ ] From runtime_scripts, run create_faces.sh
    - [ ] 123XXX_faces folder should be copied in the 123XXX_data folder automatically
        - [ ] Verify this
        - [ ] TC images should be named as 123XXX_tc1.png to 123XXX_tc5.png
        - [ ] For sibling, 123XXX_sib1.png to 123XXX_sib5.png
        - [ ] For parent, 123XXX_parent1.png to 123XXX_parent5.png
- [ ] Copy the gallery faces (123XXX_faces) into the hard disk for the other devices

Step-4a: FLASH-TV gaze estimation setup with images

- [ ] Run the gaze estimation step with images
    - [ ] Stop and disable service files
        - [ ] Run stop_services.sh or do it manually by copy pasting the commands from it

- [ ] Run run_flashtv_system.sh from the runtime_scripts folder (check the slides for details)
- [ ] It will take 4-5 mins for the algorithm to start
- [ ] Make sure target child is present in front of the Camera and watching TV during this time
- [ ] Use this time to go setup camera and housing in the other room
- [ ] Once you start seeing the gaze output log,
    - [ ] Make sure the recent timestamp is not too delayed from real time
        - [ ] The delay is about 4-5 secs
- [ ] Now, go to the next step

- [ ] Check that everything is running correctly (check the slides for details)
    - [ ] Go to 123XXX_data directory > 123XXX_test_res
        - [ ] See the images if FLASH-TV picked up the correct target child
        - [ ] If not make sure the gallery is built correctly
            - [ ] Target child images are named correctly and present in the expected location
    - [ ] Gaze estimated directions make sense
        - [ ] Red arrows pointing the direction the child is looking at should make sense from the images
    - [ ] Go to the data directory and check 123XXX_flash_log_timestamp.txt file
        - [ ] Every 20 secs the gaze log is dumped into this file
        - [ ] See if it is written as expected (see slides for details)
    - [ ] Stop the script run_flashtv_system.sh
        - [ ] Press Ctrl+C on the terminal
- [ ] Now delete the test results images and proceed to the next step

Step-4b: FLASH-TV gaze estimation setup without images

- [ ] Make sure that all of the relevant service files (flash-run-on-boot.service, flash-periodic-restart.service, homeassistant-run-on-boot.service) are located in /etc/systemd/system and open them in a text editor to make sure that the device ID and family ID values are correct in all of the folder paths
    - [ ] If they are not, then full_initial_configuration.sh was not run properly or you need to run participant_change.sh in the flash-tv-scripts directory
- [ ] Start and test the services
    - [ ] Run test_services.sh or do it manually by copy pasting the commands from it
- [ ] It will take 4-5 mins for the FLASH-TV algorithms to start again

- [ ] Make sure target child is present in front of the camera and watching TV during this time
- [ ] Use this time to work on setting up other flash device

- [ ] In the service status of flash-run-on-boot
  - [ ] sudo systemctl status flash-run-on-boot.service
  - [ ] Around 1 min 10 secs you should see the camera turning on (LEDs)
  - [ ] Around 2 min 42 secs log file will be created
  - [ ] Around 3 min 6 secs you should see data logging in the log files
- [ ] Once the algorithm starts logging gaze, check the flash tv logs
  - [ ] Go to the data directory 123XXX_data
  - [ ] Check 123XXX_flash_log_timestamp.txt
    - [ ] Every 20 secs the gaze log is dumped into this file
    - [ ] See if the timestamped data is populated every 20 secs

Step-5: Bluetooth smart plug connection to Home Assistant

- [ ] Home Assistant should have already been partly configured before going to the family's home using the first part of homeassistant_setup.txt in the flash-tv-scripts folder
  - [ ] Make sure that those steps have been done
  - [ ] Continue to follow homeassistant_setup.txt for the rest of the setup at the family's home

Step-6: FLASH-TV final exit steps

- [ ] Turn the wifi off
- [ ] Lock the screen
- [ ] Disconnect the monitor HDMI output
- [ ] Disconnect the USB hub (keyboard and mouse)
- [ ] Close the lid on the housing (fix the screws)
- [ ] Make sure the camera is on
  - [ ] If not check for any loose power cables
  - [ ] Once power is fixed, the system will reboot and the camera should turn on in 4 mins automatically (flash-run-on-boot.service)
- [ ] Fix any loose hanging wires using wire clips
- [ ] Leave instructions for family as to let the study team know if the camera turns off for more than 20 minutes