DATA RELEASE
SOP
How to run COGITATE experiments on iEEG

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1. PREAMBLE

Staff training and error prevention measures

Before independently performing the procedures described in this SOP, COGITATE staff members will be trained as follows:

- Read this SOP.
- Read Slab detailing all procedures (https://twcf-arc.slab.com)
- Observe the procedures, when performed by trained study staff or a COGITATE investigator, *two times*.
- Follow the procedures under the direct supervision of trained study staff or a COGITATE investigator *two times*.

2. RECRUITMENT PROTOCOL

2.1 Identify patients to be recruited for the study ahead of the hospital visit

Review every month the surgical calendar. The calendar gives an overview of the upcoming patients (important for planning!)

2.2 Obtain and review MDC (EPIC) to determine eligibility for the COGITATE task

2.3 Inclusion criteria for the study

(a) Age range: 10-65 years old.
(b) Participant is able to provide informed consent.
(c) Participant has IQ > 70.
(d) Participant is fluent in English and/or can be instructed in a language that he/she understands.
(e) Participant self-reported normal hearing.
(f) Participant has normal or corrected-to-normal vision.
(g) Participant had no electrographic seizure within 3-hours prior to testing.

2.4 For eligible patients

(a) Communicate to the research team the intention to collect data on the upcoming patient.
(b) Follow up with the research team to confirm that the patient has consented for research.

2.5 Once the patient consented

(a) Determine with the research team the best date to acquire data in the patient. Plan to be available during the week the patient is being monitored.

(b) Right before you will run a task with the patient, assign the patient a Cogitate Code: Patient Code consists of a prefix of two letters with a number (SX) and a number starting from 101.

For example, the first recruited patient at Site X the patient ID code would be: **S101**.
We are keeping a spreadsheet to keep information about the correspondence between the patient Site# and the Code assigned to that patient as part of the Cogitate study. Once you have assigned a cogitate code to a subject, enter it into the spreadsheet listing the recruited participants and their corresponding Site#. Make sure to add the patient cogitate code next to the Site#. No names of the patient should be in that list so it is completely anonymized!

Example:

Subject #	SIte#	Cogitate Code
01	XX765	SX101

(c) Check that the identifier assigned to the subject is **UNIQUE**, **COMPLIES** with the format, and **HAS NOT BEEN ASSIGNED BEFORE**.

3. PREPARATION OF BACKGROUND DOCUMENTS FOR DATA COLLECTION

3.1 Create a patient folder (a physical one, with paper version of all the documents) containing

(a) Patient COGITATE ID (on the cover of the physical folder).
(b) Make sure it contains the following documents:
1. CRF
2. Checklist
3. Exit questionnaire experiment 1
4. Exit questionnaire experiment 2

(c) Any other clinical background document collected so far can also be added to the documentation folder.
(d) Make sure all dates are entered following this format: **YYYY MM DD**

3.2 Collect the regulatory binder[1]

(a) Make sure it contains the following documents:
1. SOP
2. Instructions experiment 1
3. Instructions experiment 2
4. How to operate the eye tracker

1 The **regulatory binder** is shared for all patients as it contains information that applies to all of them. In contrast, a patient **physical folder** should be created per patient as it contains patient specific information.

3.3 Document the setup used for the patient (in the CRF)

(a) Amplifier
(b) Number of electrodes
(c) Site of the craneotomy
(d) Online filters
(e) Reference

3.4 Collect background information of the Patient

(a) MDC
(b) OR MAP
(c) Neurologist PPT
(d) Amplifier Diagram
(e) Preop MRI
(f) Store these data in the folder
: ~\COGITATEProject\SE101\ClinBack[2].
If some of these information are not available at that time point, make sure to collect them at a later point!

3.5 Fill the CRF ahead of time

(a) Date should be entered in the following format: **YYYY MM DD**
(b) Patient COGITATE code
(c) Document the patient status
1. Last seizure
2. Sleeping patterns
3. Medication
4. Pain rating (to be collected at the bedside by asking the patient to rate the pain at that moment on a scale from 1 – 10. Patients are familiar with that scale as it is used by the medical stuff).

4. PREPARING EXPERIMENTAL SETUP

Outside of patient room

4.1 Review the DC and iEEG channel in the monitoring room (before going to the patient room)

(a) Contact the research team and introduce yourself.
(b) Check that the DC channel for audio and photodiode are enabled (take note of the DC channel number and add it to the CRF).

2 This can be done after the experiment if the documents are not available. Note that some files might change during the patient stay i.e., the Neurologist PPT and the amplifier Diagram. Make sure to collect the latest version and/or document changes in the amplifier diagram if they occur.

(c) If DC channels are not enabled, contact the research team to do it.
(d) If there is iEEG channels that are noisy, notify the research team such that they can be improved (requires contacting the EEG techs).

4.2 Collect all experimental materials necessary to run the task with the patient

(a) Patient Folder
(b) Regulatory Binder
(c) Presentation laptop
(d) (Eyetracker host laptop)
(e) Loudspeakers
(f) Response box
(g) Photodiode
(h) Eye-tracker
(i) Microfiber cloth
(j) Tape measurer
(k) Cables:
    1. Audio cable for speaker
    2. Audio cable for audio trigger
    3. Splitter
    4. Eyetracker cables
(l) Disinfect the whole material before you bring it to the unit according to hospital infection prevention protocol.
(m) Do not forger to wear the hospital badge and keep it visible when interacting with the patient.
(n) Wear business cloth when interacting with the patient i.e., no sandals, jeans.

4.3 Preparing the experimental computer

(a) Turn the computer on, check that it is properly charged (min 80%).
(b) Disable wifi on the computer. Click on the network icon on the bottom right of the screen.

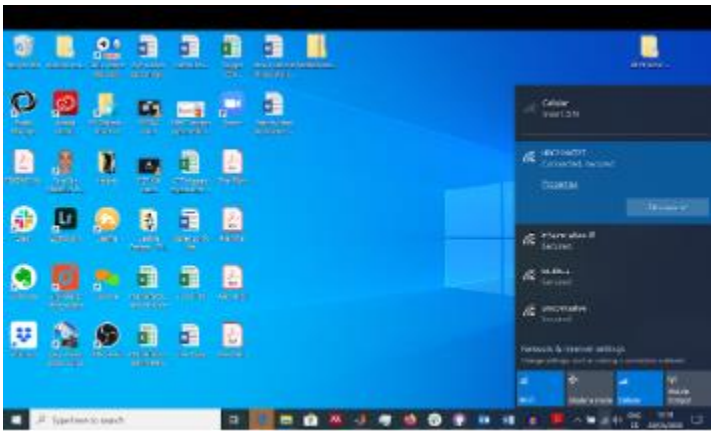


Figure 1: screenshot of experimental computer screen, showing wifi settings

(c) Click on the Airplane mode button to turn the wifi, cellular and bluetooth off.

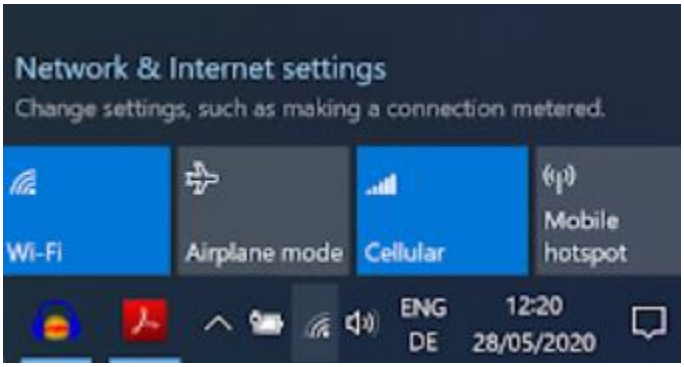


Figure 2: screenshot of experimental computer screen, showing all network & internet settings

(d) Disable all unnecessary services in windows.

4.4 Setting experiment 1 script:

(a) Go in the folder …\Exp1, locate the matlab function called: initRuntimeParameters.
(b) Double click on the script to open it. This will open matlab automatically.
(c) Check the following parameters:
1. **RECORDING MODALITIES**:

- Make sure that ECoG and EYE_TRACKER are set to 1, as shown below

```
% Recording modalities
MEEG = 0; % Set to 1 if recording with MEEG
fMRI = 0; % Set to 1 if recording with fMRI
EYE_TRACKER = 1; % Must be set to 1 if recording with Eyetracker
ECoG = 1; % ; Set to 1 if recording with ECoG
Behavior = 0; %Set to 1 if recording with Behavior only
```

2. **HARDWARE PARAMETERS**:

- REF_RATE_OPTIMAL should be set to 60.
- Make sure that the SCREEN_SIZE_CM matches your display (measure it physically!)
- You do not need to worry about the viewDistanceBottomTop (this is only for other eyetracking recordings) nor VIEW_DISTANCE (this is a default that you won't be using).

```
% Hardware parameters:
REF_RATE_OPTIMAL = 60; % in Hz. Screen refresh rate.
VIEW_DISTANCE = 60; % Default viewing distance (if no viewDist argument sen
SCREEN_SIZE_CM = [53, 30]; % screen [width, height] in centimeters, change
viewDistanceBottomTop = [60,60]; % Distance between the participant head an
```

3. **EYETRACKER PARAMETERS:**

- Eyetrackerdummymode and head-fixed should be set to 0.
- The DISTANCE_SCREEN_TRACKER should be measured in the patient room.
- Set TOBII_EYETRACKER to 1 if using Tobii eyetracker (NYU only), set to 0 otherwise (HU and WU)

```
%% Eyetracker parameters:
DISTANCE_SCREEN_TRACKER = 90; % Distance between the eyetracker lense and the cor
Eyetrackerdummymode = 0; % Dummy mode of the eyetracker: MUST BE SET TO 0 TO RUN
HEAD_FIXED = 0; % Head fixed must be set to 0 if remote mode
TOBII_EYETRACKER = 1;
```

4. **TRIGGERS PARAMETERS:**

- Make sure the trigger parameters are set as follows:

```
% ECoG parameters:
BIT_DURATION = 0.020; % Duration of single bit in ECoG audio triggers
RESP_TRIG_ONSET=0.2; % Lower time threshold to send audio resp trigger (in seconds)

% Photodiode parameters:
PHOTODIODE = 1; % Must be set to 1 for the photodiode to be presented
DIOD_ON_COLOUR = 255; % Color of the photodiode when turned on (255 white, 0 black)
DIOD_OFF_COLOUR = 1;  % Color of the photodiode when off (255 white, 0 black)
DIOD_SIZE = 100; % Size of the square where the photodiode is presented (in pixels)
DIOD_DURATION = 3; % Duration of the photodiode flash when turned on (in frames)
```

5. **DEBUGGING PARAMETERS:**
   - Make sure that all the parameters below are set to 0, except RESOLUTION_FORCE

```
DEBUG = 0; % 0 = no debug | 1 = regular debug | 2 = fast debug
VERBOSE = 0; % Yoav: Katarina, if you have the time please encase the displ
VERBOSE_PLUS = 0; % for debugging duration balance only
NO_PRACTICE = 0; % skip the practice run
RESOLUTION_FORCE = 1; % the program will complain if optimal refresh rate i
NO_FULLSCREEN = 0; % enable windowed mode for dubugging
NO_AUDIO = 0; % Disable audio for dubugging BIT_DURATION: duration of the s
NO_ERROR = 0; % Disable testing program error throws
% Q: Do I need to fill this out? Pixels? Yoav: only if you want the debug s
WINDOW_RESOLUTION = [100 100 900 700];
```

4.5 Setting experiment 2 config:

Inside of the patient room

4.6 System check in the patient room

(a) Disinfect your hands before entering the patient's room.
(b) Greet the participant and introduce yourself
(c) Explain the task and the purpose to motivate them.
(d) Check the environmental hardware, fill the CRF accordingly.
(e) Turn off what you can from the following:
   1. TV
   2. Ceiling Lights on
   3. Doors closed
   4. Light behind the bed

(f) Make sure the laptop runs on batteries, and that the isolator box is in the unit. All research equipment should be plugged in there!
(g) Continue completing the CRF (ignore information already entered)
   1. DC channel #
   2. Audio
   3. Photodiode

4.7 Setting up the experiment hardware

(a) SET UP THE LAPTOP

Grab a table (e.g., the one used by the patient). If in use, either find a second clean one or clear the table from the patient. Use the cleaning wipes in the front door of the room to clean the table. Place the computer in front of the patient at a distance of 80cms. Measured from the patient eye to the screen of the laptop. Ask the patient to sit comfortably and adjust the height of the table. Ideally the monitor should be placed at the same height as the patient eyes.

(b) SET UP THE PHOTODIODE

The photodiode should be clamped to the bottom corner of the screen, such that it is in contact with the corner. You should then plug the photodiode into the DC channel 1. Bring extra battery.

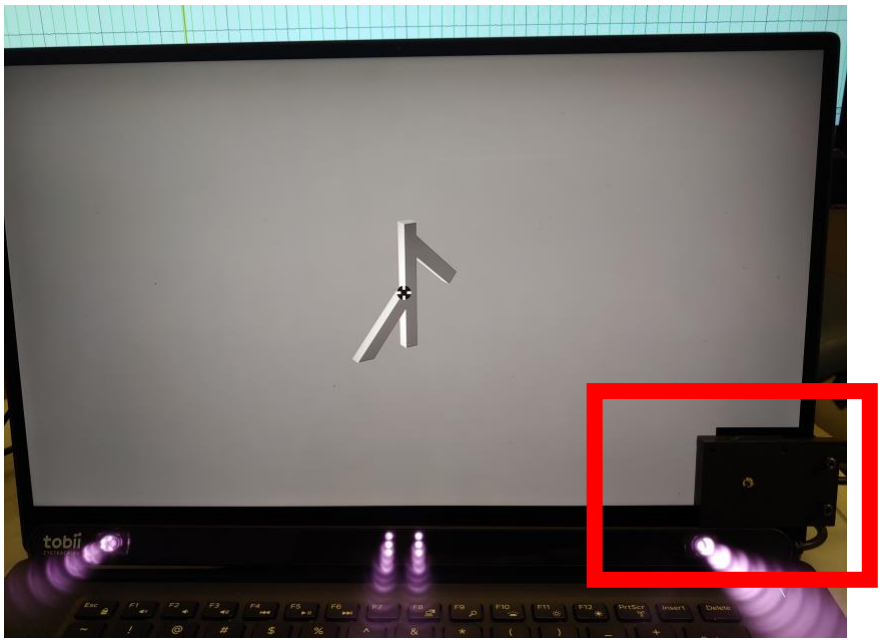


Figure 3: Stimulus screen showing the photodiode (bottom right, red box)

(c) SET THE AUDIO CABLE

The splitter should be plugged into the audio port of the laptop. In **RED** plug of the splitter, plug the loudspeaker. In the **WHITE** plug, plug the audio cable that goes into the DC channel. Make sure that everything is plugged in correctly!

(d) Plug in the response box in the USB port of the computer

The response box should be plugged in one of the USB port of the experiment computer. Give the patient the response box oriented as below. Ask them to press the different button so they can get used to them.

Figure 4: Response box in the correct orientation when patient is holding it.

4.8 Check the functionality of the experimental hardware

(a) Locate the matlab script called **ECoGaudioPhotoTest.m.** The path is ~/Experiment1Code/setup tests/ECoGaudioPhotoTest.m.
(b) Double click on the file. It will open Matlab. The script flashes at regular time intervals a light signal (picked up by the photodiode) and an audio trigger. The script runs in an endless loop. To break it, press the ESCAPE.
(c) To run it, write **audioPhotoTest** in the command window (case sensitive!). Go to the monitoring room and check that visual triggers (photodiode) appear in DC 1 and Audio triggers appear in DC 2.
(d) **Troubleshooting**: If one or both triggers are missing:
1. Check that the photodiode is placed exactly at the location in which the light flashed. It has to cover it completely, and thus NO light should be noticeable. If you can see some light, then the location of the photodiode is sub-optimal. Plug it again until you see NO light.
2. Check that the audio cables are plugged in correctly and in both ends.
3. Make sure the DC channels are plugged in.
4. Run the test again.

4.9 Setting up the eyetracker

4.9.1 Eyelink tracker

(a) Ask the participant for his/her dominant eye. If not known, perform the eye dominance test.
(b) Turn on the Eyelink host computer. Let it be in the ‘Camera setup’ mode.
(c) The tracker must be placed in front of the experiment computer, at a distance of 30cm.
(d) Adjust the height so that the tracker is just not blocking the screen from the sight of the participant.
(e) Put a sticker on her forehead.
(f) If the patient has glasses, clean them. If the patient has lenses, note that in the CRF.
(g) Make sure no hairs are covering the eyes.
(h) Adjust the focus to make the corneal reflection as small as possible.

(i) Make sure that the camera finds the pupil and cornea reflection by adjusting the camera and participant distances.
(j) Ask the participant to move her eyes in the different corners of the screen and make sure the pupils and the corneas are mostly found.
(k) (If you move the tracker away from the laptop (i.e. if it's not touching the laptop), the distance between the tracker and the laptop should then be measured and input to the InitRunParameters.m in the DISTANCE_SCREEN_TRACKER parameter.)

4.9.2 Tobbii tracker (NYU only)

(a) Plug the tracker in the USB port of the computer.
(b) Place the tracker in front of the experimental laptop, centered with regard to the computer screen, like so:

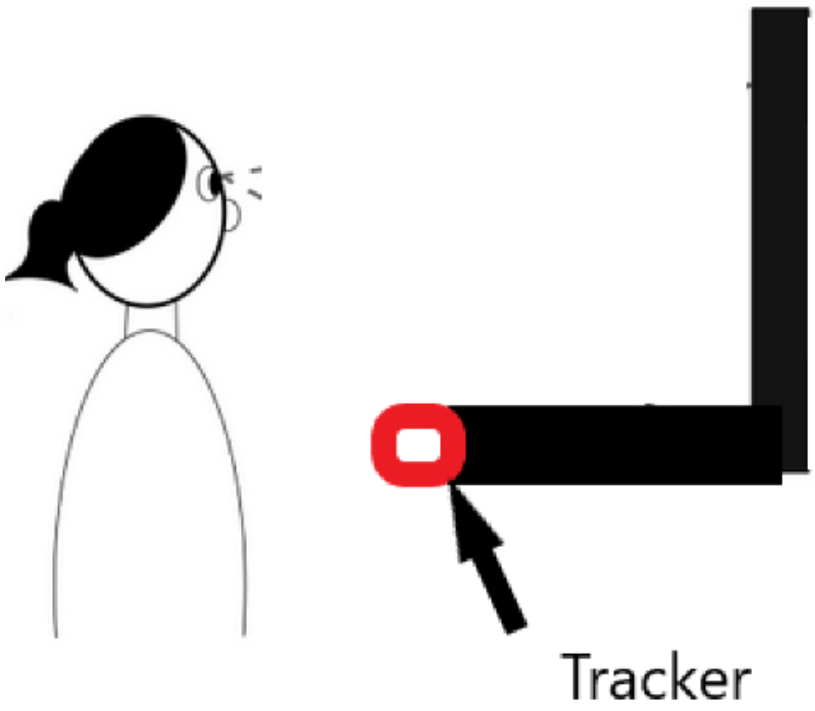


Figure 5: Tobii tracker placement

(c) The distance between the tracker and the patient should be 80cm

(d) Make sure that the patient is placed in the middle of the sensor field of view

(e) The patient should be perpendicular to the screen, like so:

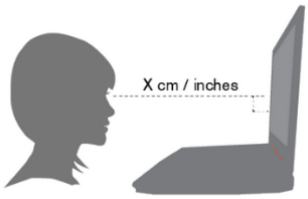


Figure 6: Perpendicular head placement relative to the computer display

(f) Ensure that the tracker can find the eyes by opening the hidden windows icons at the bottom right of the screen. Two crosses indicate no tracking, two dots indicate tracking. Adjust participant position (if possible) if necessary

5. SETTING UP THE EXPERIMENTS

5.1 Experiment 1 (you will need matlab)

Make sure that all the parameters above are set to 0, except RESOLUTION_FORCE

a) Measure the distance between the participant nasion (where the middle bar of glasses is on the nose) and the middle of the screen (IN CM!!!) and note it down (you will need it to start the experiment).
b) Make sure that the parameters you set in the initRunTimeParameters script (section 4.4 Setting experiment 1 script) did not change

c) Instruct the participant:

"You will be presented with a stream of images that will be shown for various amounts of time and in different orientations. There are 4 different kinds of images: faces, letters, objects and symbols (avoid the term false-fonts, it doesn't make sense to them). You will be shown only one picture at a time. The experiment is organized in small blocks. At the beginning of each of these blocks, you will be presented with so called targets. Your only task is to remember these targets during the block, and press the ___ key whenever you see one of the stimuli. You should answer as fast as you can, but take your time to be sure it is the right stimulus. For each block, you will have two targets. Each of these targets will be shown in three different orientations: straight and to the sides. Whenever the stimulus comes during the stream, no matter the orientation, you should press. Don't worry for now if that sounds complicated, it really isn't. You will also

have a small practice run before we really start. It is very important that throughout the study, you keep your eyes fixated at the cross in the middle of the screen as this affects out brain recordings. We will also be tracking your eye movements. Do you have any questions?"

(d) In the matlab command window, type **runExp1(ID, ViewerDistance)**. E.g., if you are running participant 101, and the measured distance was 65cm, enter the following: *runExp1(101,65)*
(e) Let the participant read the instructions and answer any question they may have.
(f) Mark the time that the experiment started in the CRF
(g) The participant will then proceed to the practice. You should coach the participant through the practice. Stand next to them. When a target appears, let them know that they should have pressed (if they haven't). If they did, say WELL DONE!
(h) If the patient did not perform well on the practice it is going to show as 'That was the first practice, let's proceed to the next'. You can still proceed to the real experiment by pressing 'Y'. Otherwise press 'R'.
(h) Once the practice is over, the eyetracker calibration will start:

Eyelink (HU and WU):
1. Tell the participant that a calibration will be performed, which is very important to determine where his/her eyes are looking at and to map that to responses of their brain.
2. Instruct them to follow with their gaze the dots which will appear at different locations and to fixate once the dots are static.
3. On the host computer, hit the autothreshold key. This should detect the pupil accurately. The pupil should be completely blue. If that is not the case, manually adjust the blue area to exactly match the pupil.
4. Press exit setup.
5. On the experiment computer, press the 'C' key.
6. The calibration will start.
7. Once the calibration is over, press the 'V' key to start the calibration.
8. At the end of the validation, look at the values on the bottom right of the Eyetracker host computer Spend max 5-10 minutes on the calibration.
9. ACCEPTABLE values are: max error < 1 deg and average error < 0.5 deg and if that is not the case, remind the patient to follow the dots and to fixate on them, and perform the calibration again.
10. If the accuracy doesn't improve, go to the section Eyetracker troubleshooting.
11. Press 'ESC' to start the experiment

Tobii (NYU):
1. a. Tell the participant that a calibration will be performed, which is very important to determine where his/her eyes are looking at and to map that to responses of their brain.

2. Instruct them to follow with their gaze the dots which will appear at different locations and to fixate once the dots are static.
3. The calibration screen will appear:

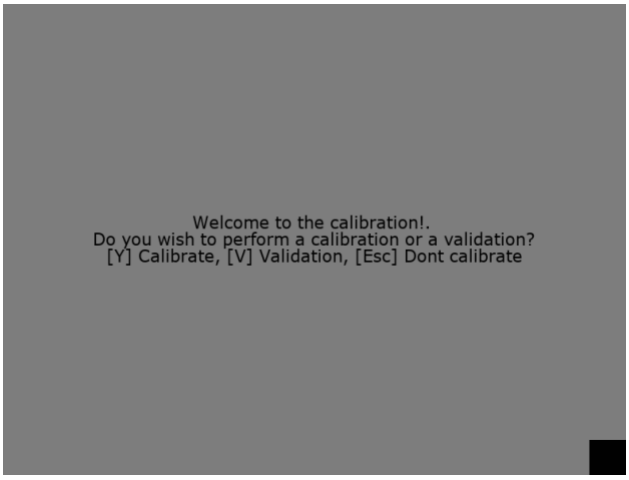


Figure 7: Calibration screen

4. You should press Y to do the calibration
5. The calibration will start
5. On the experiment computer, press the 'C' key.
6. The calibration will start.
7. In the calibration, in order to accept a fixation point as a calibration sample press the space bar when the participant fixates the dot.
8. At the end of the calibration, a screen will be displayed, showing which the data points that were recorded are. You should use it to estimate whether you should perform the calibration again. Press any button to continue:

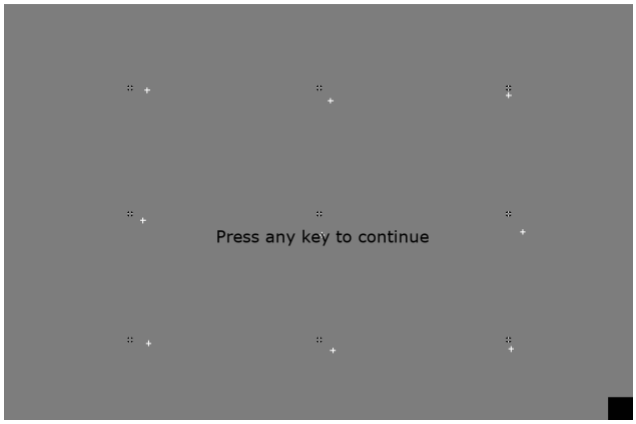


Figure 8: Screen indicating the end of calibration.

9. If the calibration was poor (as seen from the previous screen), press ‘R’ to recalibrate.

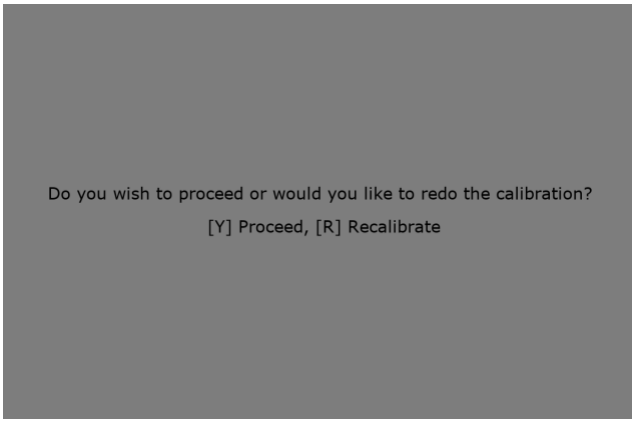


Figure 9: Screen displayed when calibration needs to be rerun.

10. If the calibration was fine, you will pursue to the validation. The task will be the same for the participant. At the end of the validation, you should see this on the screen:

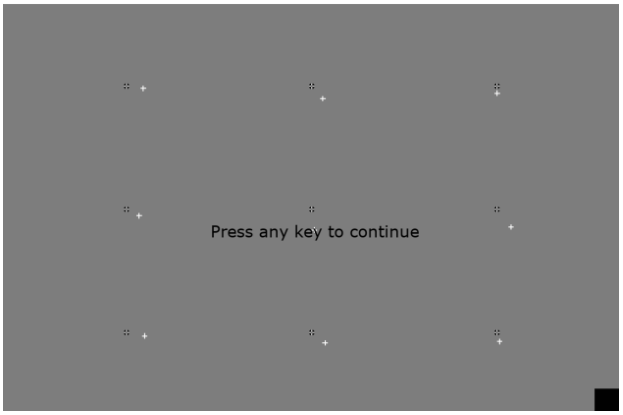


Figure 10: Screen displayed when calibration is successful

11. If the white crosses are close to the white crosses in black circles, you can proceed. Otherwise, redo the calibration
12. See how to operate the Tobii tracker for a more precise description of the procedure

5.2 Experiment 2 *(you will need unity)*

(a) Instruct the participant about the task.
(b) Go to the folder [DESCRIBE]. Double click on the program called “Orange & Blue-A Tale of Falling Essences”:

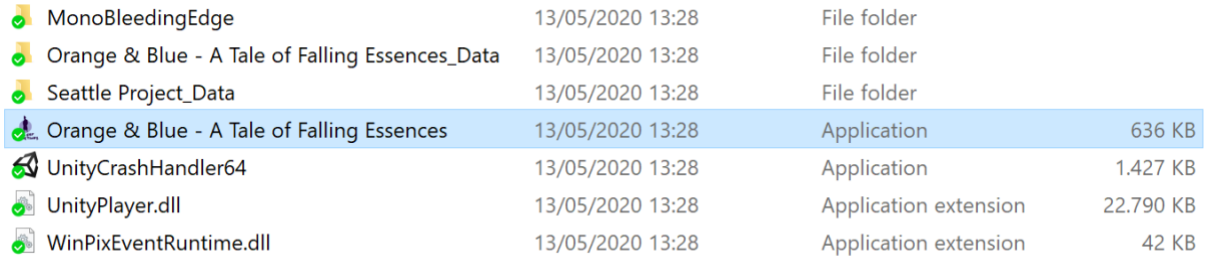


Figure 11: File folder containing videogame experimental paradigm program

(c) When the following screen appears, press play (make sure that the windowed mode is NOT selected):

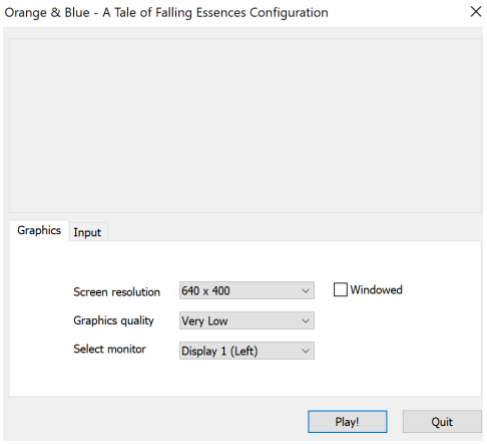


Figure 12: Pop-up window that appears when you open the videogame program

(d) You should then enter the participant number and the run number:

Figure 13: Screen prompting the entry of the anonymized subject ID

(e) The participant will then play through practice 1, 2 and 3.
(f) At the end of the practice, the eye tracker calibration will start:

1. On the host computer, hit the autothreshold key. This should detect the pupils accurately. The pupil should be completely blue. If that is not the case, manually adjust the blue area exactly matches the pupil.
2. Press exit setup.
3. Before starting the calibration, instruct the participant to look at the dots as they appear on the screen.
4. To start the calibration press the 'C' key in the experiment computer.
5. Once the calibration is over, press the 'V' key to start the validation.
6. Again, instruct the participant to look at the dot as will appear.
7. After the validation, check the values on the bottom right of the Eyetracker host computer. Acceptable values are: **max below 1° and mean below 0.5°.** If that is not the case, perform the calibration again.
8. If the accuracy doesn't improve, go to the section Eyetracker troubleshooting.

6. DURING THE EXPERIMENTS (1 and 2)

(a) Note down the time of the beginning of the experiment on the CRF.
(b) Monitor the participant performances.
(c) During the experiment, complete the CRF.
    1. Note the time of the beginning of each block.
    2. Note anything worth noting: medical personal walks in, participant needs to take a break… **There is no taking too many notes.**
    3. Note the time if the participant takes a break.
(d) During the breaks encourage the patient. Tell them that they are doing great!
(e) At the end of each block, the calibration screen will reappear. You should do a calibration again by pressing 'C', followed by a validation, by pressing 'V'.
(f) If the participant decides to take a break or to interrupt the experiment, press the key 'Q'. After pausing the experiment, you will need to decide how to restart. There are three options to restart: press 'q' again to resume, press 'r' to restart the miniBlock or 'esc' to completely close off the experiment. If you press 'r', the log files will be appended. If you press 'esc' however, a new file will be created. You should make a decision on how you restart based on how you will prune the ECoG data. You should follow these rules to decide what to do after interruption:

    1. If the interruption occurs in the last ___ trials of a block, hit the 'Q' key again to resume.
    2. If the interruption occurs before the ___ trial of a block, hit the 'R' key to restart the miniBlock.
    3. If the participant decides to fully interrupt the experiment for now, press the escape key.
    4. If the break of the interruption takes more than 30secs, do not restart simply by pressing 'Q', use 'R' or 'Esc'.

5. If the interruptions lasts more than 20 minutes, use ‘Esc’. In such a case, you should also prune the ECoG data accordingly.

7. ENDING THE EXPERIMENTS (1 and 2)

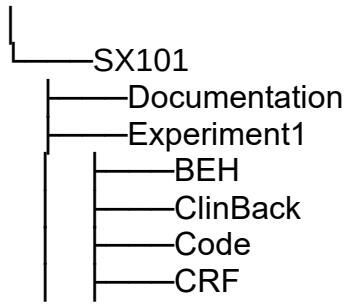
(a) Tell the participant that they have done an excellent job!
(b) Ask the participant to fill in the experiment debriefing questionnaires
    1. XXX for experiment 1
    2. YYY for experiment 2
(c) Thank the patient for his/her participation. Explain the purpose of the study and what is being tested. Ask them whether they would want to be updated on the results.
(d) Give the patient a thank you card from the COGITATE consortium.
(e) Unplug the audio and photodiode from the DC ports.
(f) Plug back anything you unplugged in the beginning.
(g) Finish filling the CRF. If anything is missing, it is really important you figure this out while you still can.
(h) Collect all the equipment you brought with you.
(i) Ask the patient whether you could assist them in anything (e.g. coffee, call their relatives….).
(j) Smile again at them, thank them again, tell them they have done an amazing job and leave the room.
(k) Place the computer back where you got it as well as the experiment materials.

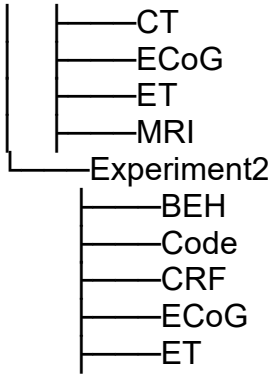
8. IN CASE OF SEIZURE

In case of an epileptic seizure, interrupt the experiment and follow the protocol established at your hospital. Our study excludes data that were collected within +/- 3 hours of a seizure.

9. COMPILING THE DATA DOSSIER

9.1 Prepare folders structure on the server (running the function createFolders(‘ParticipantID’). This will set up your folders on the server:





9.2 Secure the files generated by Experiment1 script (this should be done as soon as possible, ideally, directly after the experiment)

9.2.1 Experiment 1

(a) Log files:

1. Go to the folder ..\Experiment1\Data\SXID\ExportFiles. This folder should contain:

- PatientID_Beh_V1_RawDurR1.csv
- PatientID_Beh_V1_RawDurR2.csv
- PatientID_Beh_V1_RawDurR3.csv
- PatientID_Beh_V1_RawDurR4.csv
- PatientID_Beh_V1_RawDurR5.csv
- PatientID_Beh_V1_SumDur.csv

2. Copy the folder ..\Experiment1\Data\SXID\ExportFiles
3. Paste it in …\SITEServer\COGITATEProject\SXID\Experiment1\BEH

(b) Code:

1. Go to the folder ..\Experiment1\Data\SXID\Code
2. Copy the folder ..\Experiment1\Data\SXID\Code
3. Paste it in …\SITEServer\COGITATEProject\SXID\Experiment1\Code

(c) Trigger logs:

1. Go to the folder ..\Experiment1\Data\SXID\ExportFiles
2. Copy the files:

- PatientID_Beh_V1_TrigDurR1.csv,
- PatientID_Beh_V1_TrigDurR2.csv,
- PatientID_Beh_V1_TrigDurR3.csv,
- PatientID_Beh_V1_TrigDurR4.csv,
- PatientID_Beh_V1_TrigDurR5.csv

3. Paste it in …\SITEServer\COGITATEProject\SXID\Experiment1\ECoG

9.2.2 Experiment 2

(a) Log files:

1. Run the Log analyzer on the collected log file:

- Go to [PATH TO THE LOG ANALYZER]
- Open the file: Orange & Blue-A Tale of Falling Essences
- The following window will appear:

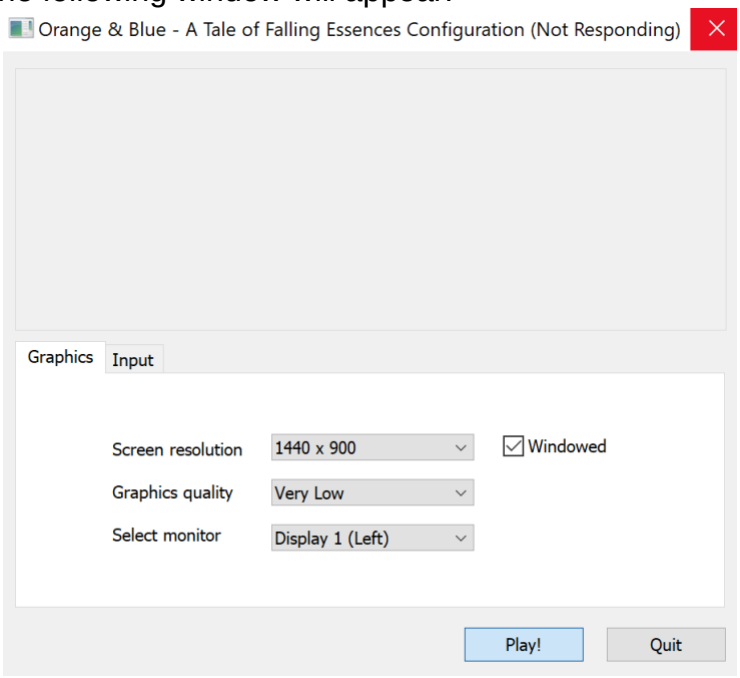


Figure 14: Pop-up window that is displayed; press Play! to start videogame (Experiment 2)

- Hit the play button.
- You should then add the path to the data of the participant you just ran.

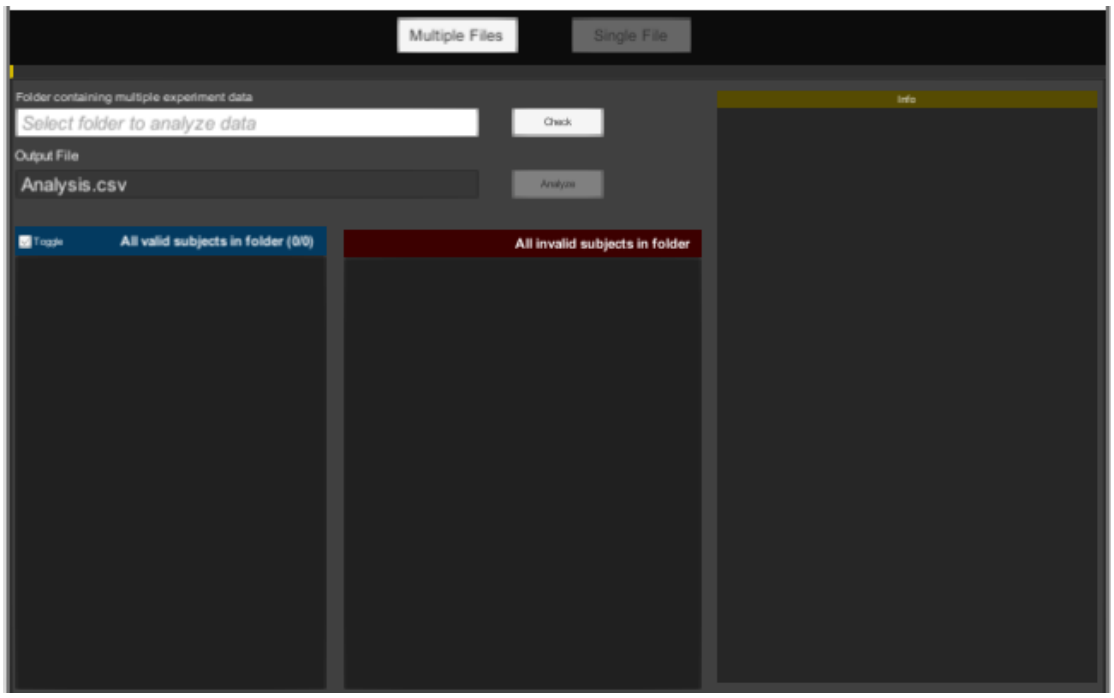


Figure 15: Screen displayed for researcher to enter the file pather

- You should then hit check.

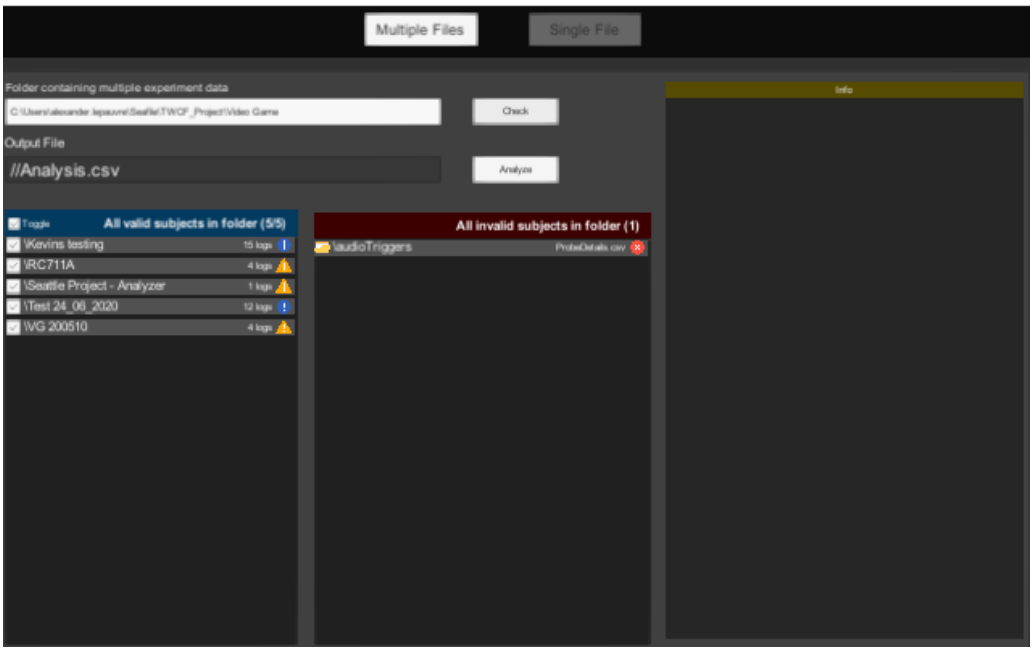


Figure 16: Screen displaying a list of files in your path to be checked.

- This should give you a list of all the files found in your path with data that can be analyzed. You should then check the file you want to analyze. You should then hit analyze:

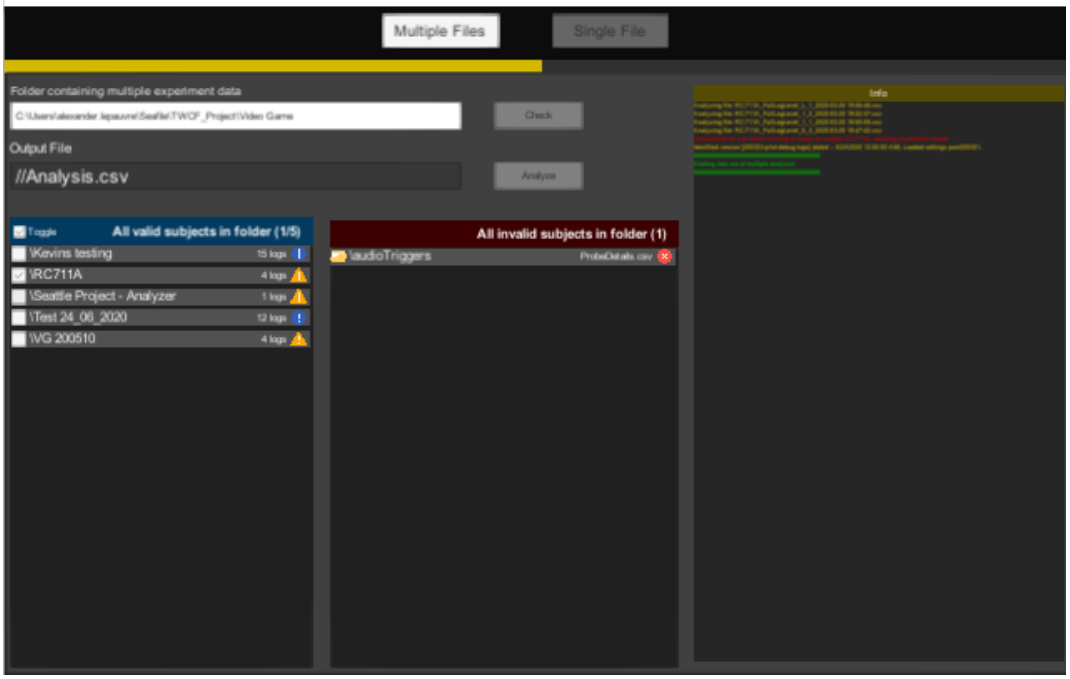


Figure 17: Screen displaying the selection of files to analyze

- This will create a folder called 'AnalyzerOutput' in the given participant's folder. In this folder, you should find the following:
- PatientID_Beh_ V2_VGR1.csv
- PatientID_Beh_ V2_VGR2.csv
- PatientID_Beh_V2_Replay.csv

2. Go to the folder \VideoGame\Orange & Blue - A Tale of Falling Essences_Data\StreamingAssets\Logs\SE1011. This folder should contain:
   - PatientID_Beh_ V2_VGR1.csv
   - PatientID_Beh_ V2_VGR2.csv
   - PatientID_Beh_V2_Replay.csv
3. Copy the folder ..\Experiment1\Data\SXID\ExportFiles
4. Paste it in …\SITEServer\COGITATEProject\SXID\Experiment2\BEH

(b) Trigger logs:

1. Go to the folder ..\Experiment1\Data\SXID\ExportFiles
2. Copy the files:

- PatientID_Beh_V1_TrigDurR1.csv,
- PatientID_Beh_V1_TrigDurR2.csv,
- PatientID_Beh_V1_TrigDurR3.csv,
- PatientID_Beh_V1_TrigDurR4.csv,
- PatientID_Beh_V1_TrigDurR5.csv

3. Paste it in …\SITEServer\COGITATEProject\SEID\Experiment2\ECoG

9.3 Pruning the ECoG data

(a) Go to [WHERE THE ECOG DATA ARE].
(b) With the help of the CRF, find the different times of the beginning of the blocks.
(c) You should prune the data block by block. The data should be named as follows:
1. Experiment 1 (you should have five files)

- PatientID_ECoG_V1_DurR1.edf
- PatientID_ECoG_V1_DurR2.edf
- PatientID_ECoG_V1_DurR3.edf
- PatientID_EcoG_V1_DurR4.edf
- PatientID_ECoG_V1_DurR5.edf

2. Experiment 2 (You should have three files)

- PatientID_ECoG_V2_VGR1.edf
- PatientID_ECoG_V2_VGR2.edf
- PatientID_ECoG_V2_ReplayR1.edf

(d) The EDF files should be saved in
the …\SITEServer\COGITATEProject\SXID\Experiment1\ECoG
and …\SITEServer\COGITATEProject\SXID\Experiment2\ECoG folders
respectively.

9.4 Retrieving de-identified Clinical background

(a) Retrieve the MDC and name it: PatientID_V1_MDC
(b) Retrieve the electrode coverage map (PPT) with results from seizure localization and cortical stim mapping[3] and name it: PatientID_V1_PPT
(c) Retrieve the amplifier info and electrode plugs and name it: PatientID_V1_AmpJack
(d) Retrieve the ViEEG report (from epic or from SITE server) and name it: PatientID_V1_ViEEG
(e) Retrieve the Pathological report (from epic or from SITE server) and name it: PatientID_V1_Path
(f) Retrieve the electrode reconstruction and name it: PatientID_V1_ElecRecon
(g) Retrieve the ORmap and name it: PatientID_V1_ORMap

9.5 CT scans retrieval

(a) Go to EPIC with the patient name and date of birth.
(b) Retrieve the CT scans of the patient.
(c) Place the CT scans in the folder
'..\SITEServer\COGITATEProject\SX101\Experiment1\CT'

9.6 MRI scans retrieval

(a) Go to with the patient name and date of birth.

3 This should be done after the patient leaves the unit, as only then the PPT will not be updated anymore. What matters is to store the final version of the PPT!.

(b) Retrieve the MRI scans of the patient.
(c) Place the CT scans in the folder
'..\SITEServer\COGITATEProject\SX101\Experiment1\MRI

10. PREPARING DATA TO BE UPLOADED TO XNAT

(a) Make sure all files adhere to the expected naming conventions:

10.1 File Naming Structure

[sitecode][sscode]_[datatype]_[V#]_[exptype]R#

Visit 1 (Study 1 - Dur)	**DICOM Label (MR)** SX101_MR_V1_anat
	DICOM Label (CT) SX101_CT_V1_Elec
	EDF (ECoG) SX101_ECoG_V1_DurR1… SX101_AudioTrigLog_V1_DurR1...
	EYE Tracker Label (ET) SX101_ET_V1_DurR1...
	Behaviour (Beh) SX101_Beh_V1_DurR1.... SX101_Beh_V1_ExQu
	Code (PTB) SX101_Code_V1_Dur
	Case report form (CRF) SX101_CRF_V1_Dur
	ClinBack SX101_V1_ORMap SX101_V1_MDC SX101_V1_ViEEG SX101_V1_Path SX101_V1_ElecRecon

Visit 2 (Study 2 - VG)	**EDF (ECoG)** SX101_ECoG_V2_VGR1... SX101_ECoG_V2_ReplayR1...
	EYE Tracker Label (ET) SX101_ET_V2_VGR1... SX101_ET_V2_ReplayR1...
	Behaviour (Beh) SX101_Beh_V2_VGR1... SX101_Beh_V2_ReplayR1… SX101_Beh_V2_ExQu
	Code (Unity) SA101_Code_V2_VG
	Case report form (CRF) SX101_CRF_V2_VG SX101_CRF_V2_Replay

(b) Anonymize all iEEG EDF files using a matlab code [insert hyperlink].
(c) Make sure all data and clinical background information has been de-identified i.e., there is no patient name.
(d) Open the CT and MRI data in the program DicomBrowser.
1. In the MRI, rename the Series Description to: PatientID_MR_V1_anat
2. In the CT, rename the Series Description to: PatientID_CT_V1_anat

11. UPLOAD DATA ON XNAT

12. FOLLOW UP WITH QUERIES FROM XNAT