
GPD

User Manual

14. JULI 2022

VERSION 1

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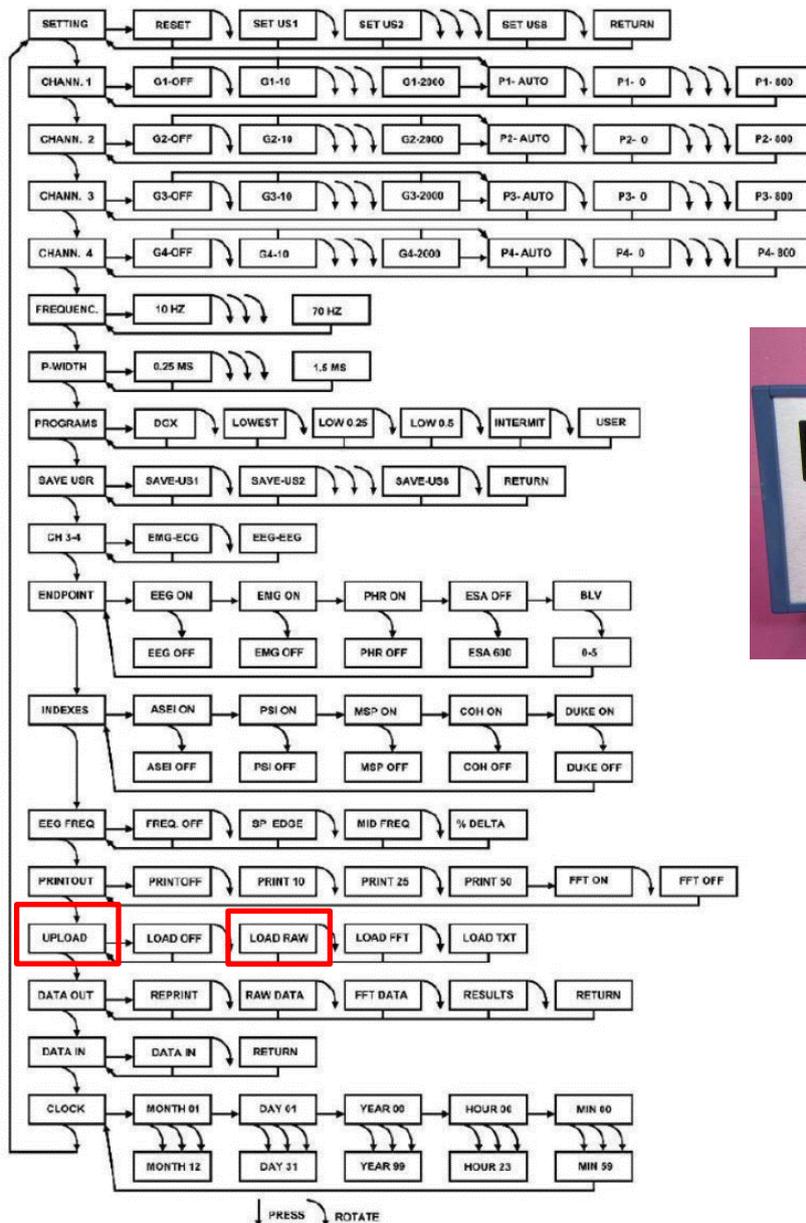
!ONLY CONNECT THYMATRON TO A LAPTOP IN BATTERY MODE! IT MUST NOT BE PLUGGED INTO A POWER SOCKET WHILE ATTACHED TO THE THYMATRON!

ATTENTION: GPD is a program for documentation purposes only, no therapeutic decisions may be based on its data. Data security is in the responsibility of the individual user.

!ONLY CONNECT THYMATRON TO A LAPTOP IN BATTERY MODE! IT MUST NOT BE PLUGGED INTO A POWER SOCKET WHILE ATTACHED TO THE THYMATRON!

1. Setting up THYMATRON 4 to automatically transfer data to GPD

Press the FLEXDIAL button (red), turn right until «--- UPLOAD» appears. Press FLEXDIAL and turn right again until « --- LOAD RAW» appears, press FLEXDAIL. Then, the data should be automatically transferred after each stimulation.



Flexdial Flowchart & Thymatron Flexdial (right side image; red circle)

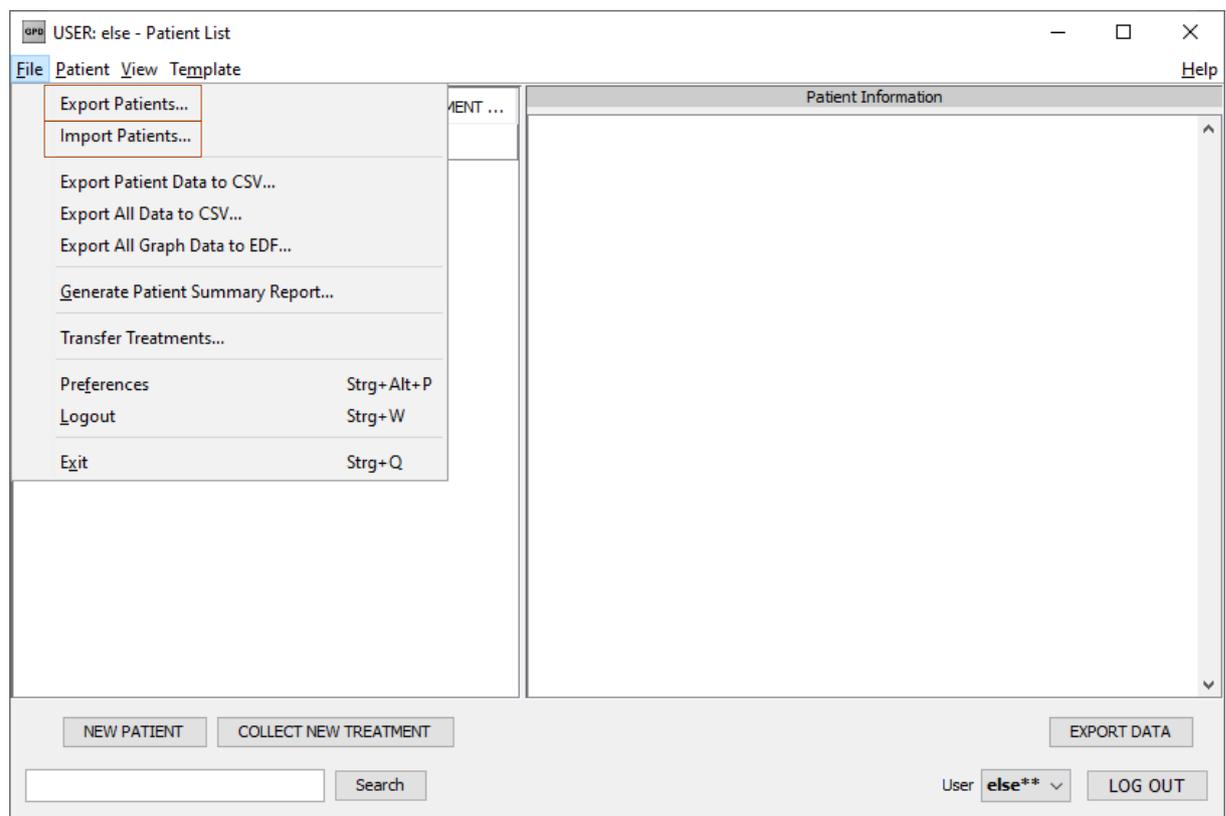
2. Installing GPD

a) If no previous GPD version exists:

- Download the portable and configured GPD version *GPD_Genet* from our website (use the link we sent).
- Discuss with local IT service solutions so that all people performing ECT have access to the same database. Possible solutions:
 - GPD stored locally on laptop (e.g. C:-drive)
 - Set up one user for all persons performing ECT
 - Install GPD on a protected hard disk or USB (be aware of data loss!)

b) If a previous GPD version already exists:

- Export all patients and treatment data of the current patient list by clicking *File*→*Export Patients...* This will create a ZIP file containing all the data.
- Download the portable and configured GPD version *GPD_Genet* from our website (use the link that was sent along).
- Re-import previous patient data by clicking *File*→*Import Patients...* and selecting the corresponding ZIP file (see above).



3. Create new patients:

- Please only add *new* patients to GPD, i.e. patients who are receiving their an index treatment of the ECT series.
- Click on «NEW PATIENT» and fill in the corresponding fields.
- If his/her diagnosis is not listed, please select «Other (please specify here)» and overwrite it.
- In case of typing errors: After filling in all fields, entries in the Patient Information window can be overwritten. E.g., if the wrong diagnosis manual was selected, please also adjust the diagnosis accordingly. For example, if ICD-11 was selected by mistake (DIAGNOSIS MANUAL USED) --> correct it there and also change the next field (DIAGNOSIS (ICD-10)) accordingly (i.e. DIAGNOSIS (ICD-11) instead of DIAGNOSIS (ICD-10))
- If a patient return for a another index series with a different diagnosis: change it in the “Patient Info” field. Old diagnoses will still show up in the exported data.

The screenshot shows a software window titled 'USER: pdag - Patient List'. It features a menu bar with 'File', 'Patient', 'View', and 'Template'. Below the menu is a table with three columns: 'LAST NAME', 'PATIENT ID', and 'LAST TREATMENT DATE'. The table contains one row with 'N/A' in all three cells. To the right of the table is a 'Patient Information' window. This window displays the following text: 'PATIENT ID: 123456', 'LAST NAME: Test', 'FIRST NAME: Neu', 'DATE OF BIRTH (DD.MM.YYYY): 11.02.1988', 'AGE: 33', 'SEX: F', 'WEIGHT: 78', 'DIAGNOSIS MANUAL USED: ICD-10', 'DIAGNOSIS (ICD-10): F33.1', 'DIAGNOSIS (ICD-11): N/A', 'DIAGNOSIS (DSM-5): N/A', 'FIRST COURSE EVER OF ECT: Yes', and 'YEAR OF FIRST ECT: 2022'. At the bottom of the main window, there are several buttons: 'NEW PATIENT' (highlighted with a red box), 'COLLECT NEW TREATMENT', 'EXPORT DATA', and 'LOG OUT'. There is also a search bar with a 'Search' button and a user dropdown menu showing 'User upk_ekt**'.

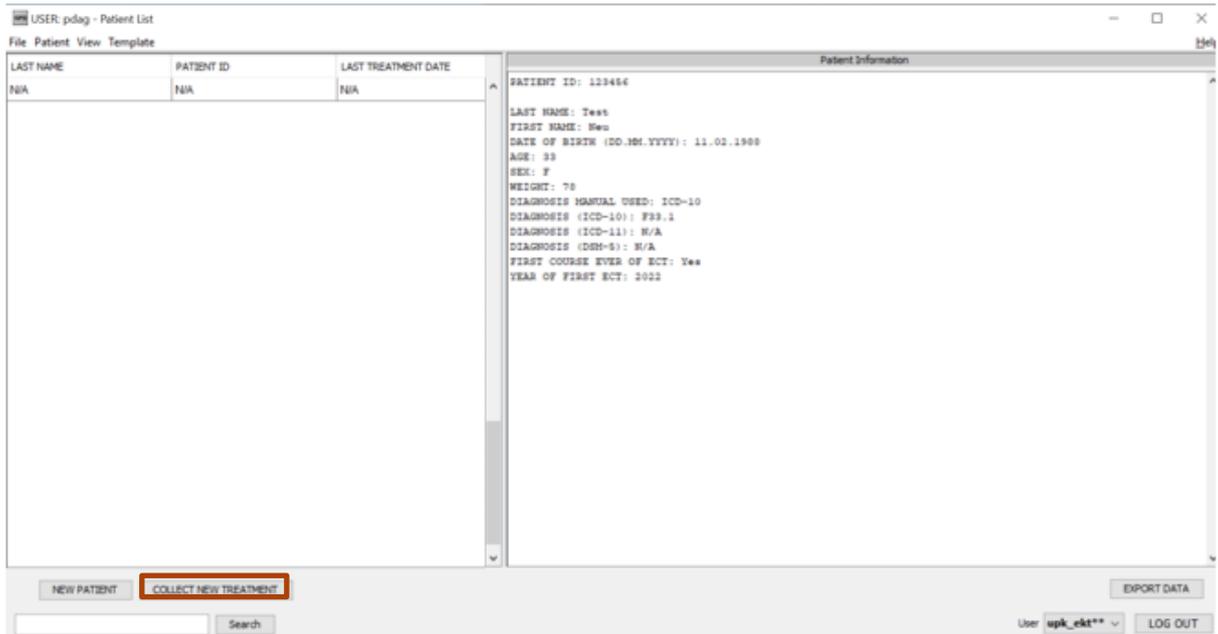
NOTE:

If fields in patient information are not filled in completely, they will pop up again with every treatment. It does not help if they are filled in during the treatment, but they must be entered in the Patient Information window itself so that they do not pop up again.

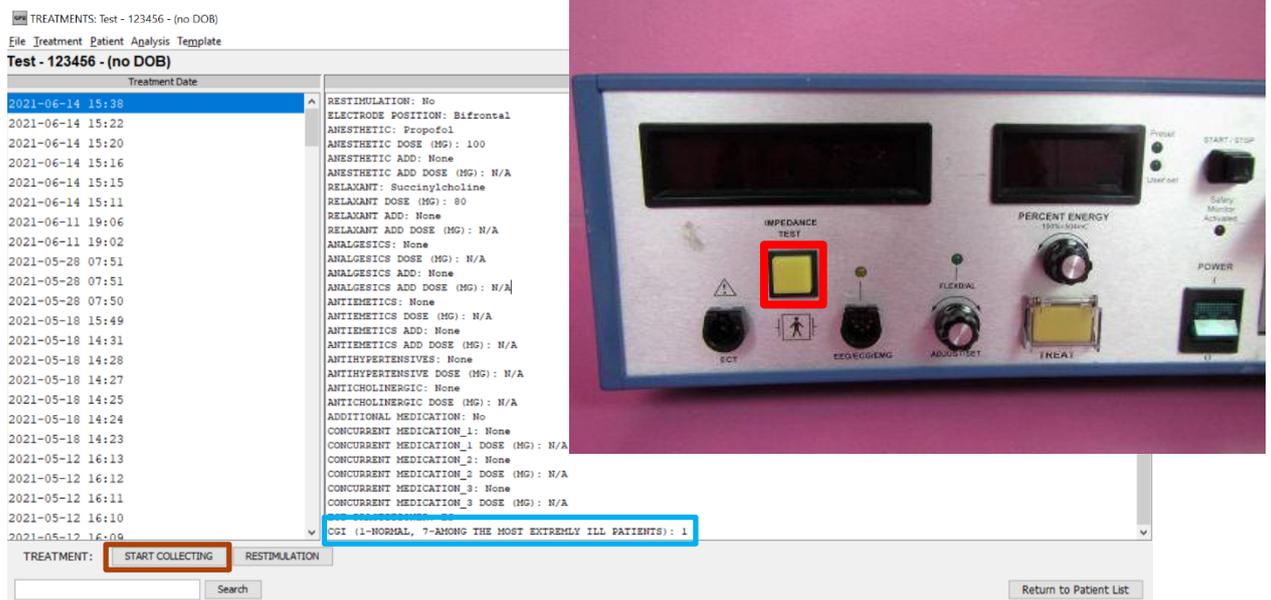
EXCEPTION: Weight is queried every sixth treatment in order to document the course of it during treatment. In addition, Patient Status is asked every fourth treatment to document any changes during treatment.

4. Enter a new ECT treatment:

- Select patient by clicking on him/her once and then click on «**COLLECT NEW TREATMENT**»



- Fill in corresponding fields up to CGI-S-rating (last question, in blue below). If a drug is not listed, please select «**Other (Please specify here)**» and overwrite it directly. The ECT physician will assess the CGI score.
- Prepare patient in parallel (including the connection of EEG, (EMG) and stimulation electrodes).
- Then click on «**START COLLECTING**» and press the yellow button «**IMPEDANCE TEST**» at the Thymatron. The EEG recording appears on the screen (ATTENTION: before stimulation, Thymatron needs approx. a 5 sec rest to establish the baseline).



- During treatment (before stimulation, while EEG and ECG recording is running) each time after a medication is administered set the according **marker** (just press corresponding number on keyboard):

Marker 1: **Anesthetics Administered** (End of injection)

Marker 2: **Relaxant Administered** (End of injection)

if possible, press also 3 at end of seizure:

Marker 3: **Seizure End** (optional)



- After the treatment and after all data have been transferred (Thymatron flashes “OUT->->->” during data transfer), continue to fill in the corresponding fields:
 - Changes to medication:** refers to changes in previously entered medication. Please insert here only the additional amount you administered and not the total amount. For instance, if a patient was administered 80 mg of Propofol in the beginning and then a restimulation was needed where the patients was administered additional 20 mg of Propofol, please write then only 20 mg Propofol in “Changes to medication” and not 100 (i.e. 80 + 20).
 - Recommendation:** Recommendations for the next treatment (e.g. next time + 10%, change to Etomidate, add Caffeine, wait longer before stimulation, etc.).
 - Comments:** relevant medical information not directly related to ECT (e.g. add Ebrantil next time, add Güdel, ...)

- Finally click on «RETURN TO PATIENT LIST»

TREATMENTS: Test - 123456 - (no DOB)

File Treatment Patient Analysis Template Help

Test - 123456 - (no DOB)

Treatment Date	Treatment Information
2021-06-14 15:38	-- Collection on 2021-06-14 15:23 --
2021-06-14 15:22	Thymatron System IV S/N: 44313
2021-06-14 15:20	Treatment at 6/14/2021 3:22:19 PM
2021-06-14 15:16	Program Selected: 2X DOSE
2021-06-14 15:15	% Energy Set: 1
2021-06-14 15:11	Charge Delivered: 0.0 mC
2021-06-11 19:06	Current: 0.00 A
2021-06-11 19:02	Stimulus Duration: 0.8 Sec
2021-05-28 07:51	Frequency: 10 Hz
2021-05-28 07:51	Pulse Width: 0.50 mSec
2021-05-28 07:50	Static Impedance: >3000 Ohm
2021-05-18 15:49	Dynamic Impedance: N/A
2021-05-18 14:31	Baseline is not available
2021-05-18 14:28	EMG Activity is not detected
2021-05-18 14:27	Base Heart Rate: N/A
2021-05-18 14:25	Peak Heart Rate: N/A
2021-05-18 14:24	Maximum Sustained Power: N/A
2021-05-18 14:23	Maximum Sustained Coherence: N/A
2021-05-12 16:13	Early Ictal Amplitude: N/A
2021-05-12 16:12	Midictal Amplitude: N/A
2021-05-12 16:11	Post-Ictal Amplitude: N/A
2021-05-12 16:10	Post-Treatment Start Marker #1: 2.22 s
2021-05-12 16:09	CHANGES MADE TO MEDICATION: No
	MEDICATION_CHANGES 1: None
	MEDICATION_CHANGES 1 DOSE (MG): N/A
	MEDICATION_CHANGES 2: None
	MEDICATION_CHANGES 2 DOSE (MG): N/A
	MEDICATION_CHANGES 3: None
	MEDICATION_CHANGES 3 DOSE (MG): N/A
	SEIZURE EVALUATION (1-INSUFFICIENT, 2-SUFFICIENT, 3-IDEAL): 1

TREATMENT: [START COLLECTING] [RESTIMULATION]

[Search] [Return to Patient List]

- If a treatment is missed (i.e. not entered in GPD), it should be entered manually using the THYMATRONS paper print-out. Even in the case that no information is obtainable for this specific treatment, a treatment should be added manually to ensure correct number of treatments for this patient

5. Restimulation:

- In case of restimulation wait until the Thymatron has transferred all data and fill in the requested information. Then, click on «**RESTIMULATION**» --> GPD prepares a new treatment for restimulation, e.g. takes over data from the previous treatment etc.
- After GPD has taken over medication etc. from the previous session, click on **!!«START COLLECTING»!!** and press «**IMPEDANCE TEST**» on the Thymatron. Afterwards, proceed as described under 2.

The screenshot shows the Thymatron software interface. The window title is "TREATMENTS: Test - 123456 - (no DOB)". The menu bar includes "File", "Treatment", "Patient", "Analysis", "Template", and "Help". The main window is titled "Test - 123456 - (no DOB)" and is split into two panes.

The left pane, titled "Treatment Date", contains a list of dates and times:

- 2021-06-14 15:38
- 2021-06-14 15:22
- 2021-06-14 15:20
- 2021-06-14 15:16
- 2021-06-14 15:15
- 2021-06-14 15:11
- 2021-06-11 19:06
- 2021-06-11 19:02
- 2021-05-28 07:51
- 2021-05-28 07:51
- 2021-05-28 07:50
- 2021-05-18 15:49
- 2021-05-18 14:31
- 2021-05-18 14:28
- 2021-05-18 14:27
- 2021-05-18 14:25
- 2021-05-18 14:24
- 2021-05-18 14:23
- 2021-05-12 16:13
- 2021-05-12 16:12
- 2021-05-12 16:11
- 2021-05-12 16:10
- 2021-05-12 16:08

The right pane, titled "Treatment Information", displays details for the selected treatment (2021-06-14 15:22):

```
-- Collection on 2021-06-14 15:23 --
Thymatron System IV S/N: 44313
Treatment at 6/14/2021 3:22:19 PM
Program Selected: 2X DOSE
* Energy Set: 1 ↓
Charge Delivered: 0.0 mC
Current: 0.00 A
Stimulus Duration: 0.5 Sec
Frequency: 10 Hz
Pulse Width: 0.50 mSec
Static Impedance: >3000 Ohm
Dynamic Impedance: N/A
Baseline is not available
EMG Activity is not detected
Base Heart Rate: N/A
Peak Heart Rate: N/A
Maximum Sustained Power: N/A
Maximum Sustained Coherence: N/A
Early Ictal Amplitude: N/A
Midictal Amplitude: N/A
Post-Ictal Amplitude: N/A
Post-Treatment Start Marker #1: 2.22 s

CHANGES MADE TO MEDICATION: No
MEDICATION_CHANGES 1: None
MEDICATION_CHANGES 2 DOSE (MG): N/A
MEDICATION_CHANGES 3 DOSE (MG): N/A
MEDICATION_CHANGES 3 DOSE (MG): N/A
MEDICATION_CHANGES 3 DOSE (MG): N/A
SEIZURE EVALUATION (1-INSUFFICIENT, 2-SUFFICIENT, 3-IDEAL): 1
```

At the bottom of the window, there is a "TREATMENT:" section with two buttons: "START COLLECTING" and "RESTIMULATION". Below these buttons is a large blue number "2." with a red arrow pointing left to a smaller blue number "1.". To the right of this section is a "Return to Patient List" button.

6. Possible Errors:

I. Data transfer from Thymatron to GPD does not work after successful stimulation

The current treatment data is stored on the Thymatron until

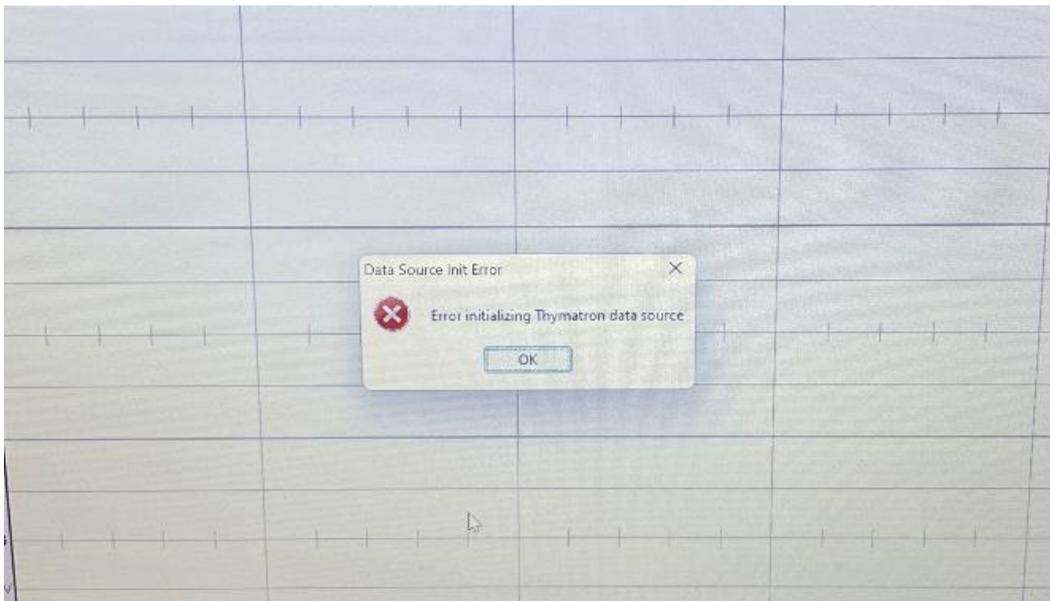
- a) it is switched off or
- b) the impedance key is pressed or
- c) Start/Stop is pressed.

Please check if

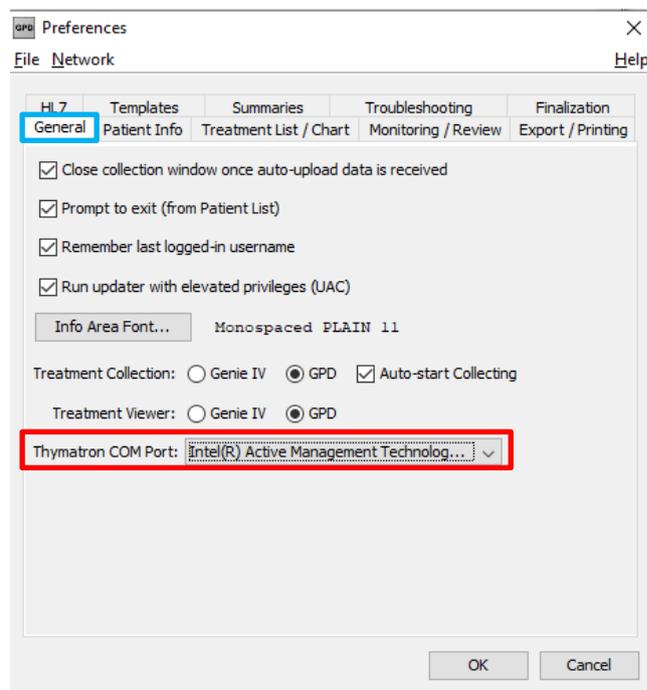
- 1) Cable is connected correctly?
- 2) COM-Port is detected?
- 3) In case of doubt, close GPD and open again or even shut down the laptop and start again.
- 4) Then open the corresponding treatment again (double click on patient -> select and click on the particular treatment) and click on START COLLECTING. The window displaying the EEG graph should appear.
- 5) Press the FLEXDAIL button (red), turn right until «--- DATA OUT» appears. Press FLEXDAIL and turn right again until « --- RAW DATA» appears, press FLEXDAIL. Data of the last session should then be transferred.



II. Error initiating Thymatron data source



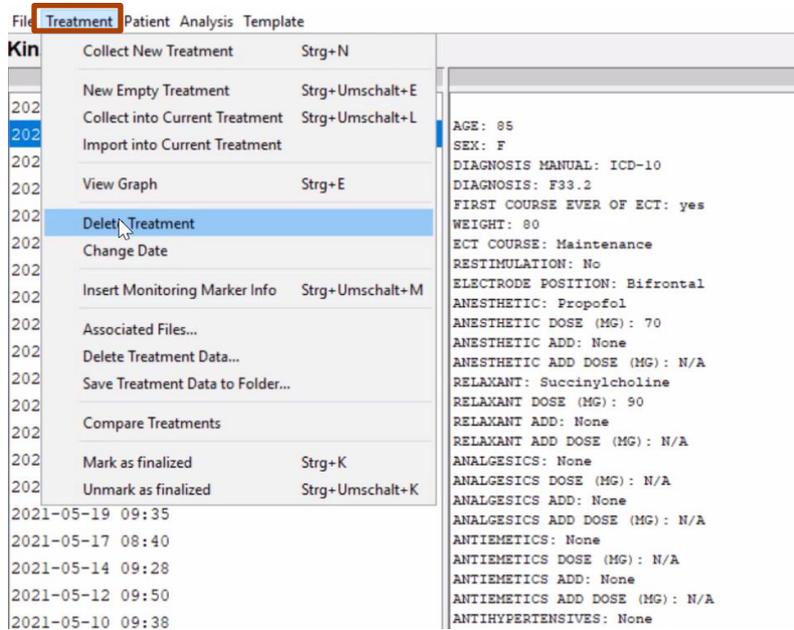
Find the correct port name for the cable you use by right-clicking on *This Computer* in the windows menu -> Manage -> Device Manager look for the cable name and memorize the COM Port otherwise just type in the search bar *device manager* and then proceed as just described. As soon as you have memorized the COM Port, open GPD and go to File -> Preferences, then a window will pop up (see picture below). Here go to the tab *General* (blue) and select the correct COM Port, you memorized before, for the Thymatron COM Port (red). Then, the error should be solved.



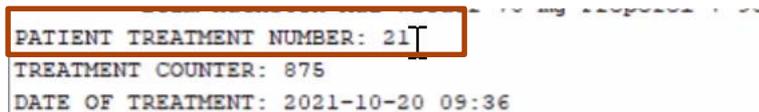
III. Treatment abortion

If a treatment is cancelled before stimulation (i.e. if no stimulation and seizure parameters were recorded), the treatment should be deleted in the GPD immediately:

click/mark treatment--> Treatment in the task menu--> Delete Treatment



However, if another treatment including a stimulation was performed and collect before the previous treatment (without a stimulation) was deleted, the Patient Treatment Number of the current treatment must be corrected after the previous treatment was deleted. This means that the patient treatment number must be subtracted by one in the current treatment (e.g. 21 -> 20).



IV. Further support

In case you need any further support, visit this website

[Home · elektriika-inc/GPD-wiki Wiki · GitHub](#)

or contact us via email:

contact@genet-ect.org