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# GPD

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User Manual

26. JANUAR 2023

VERSION 1

# Content

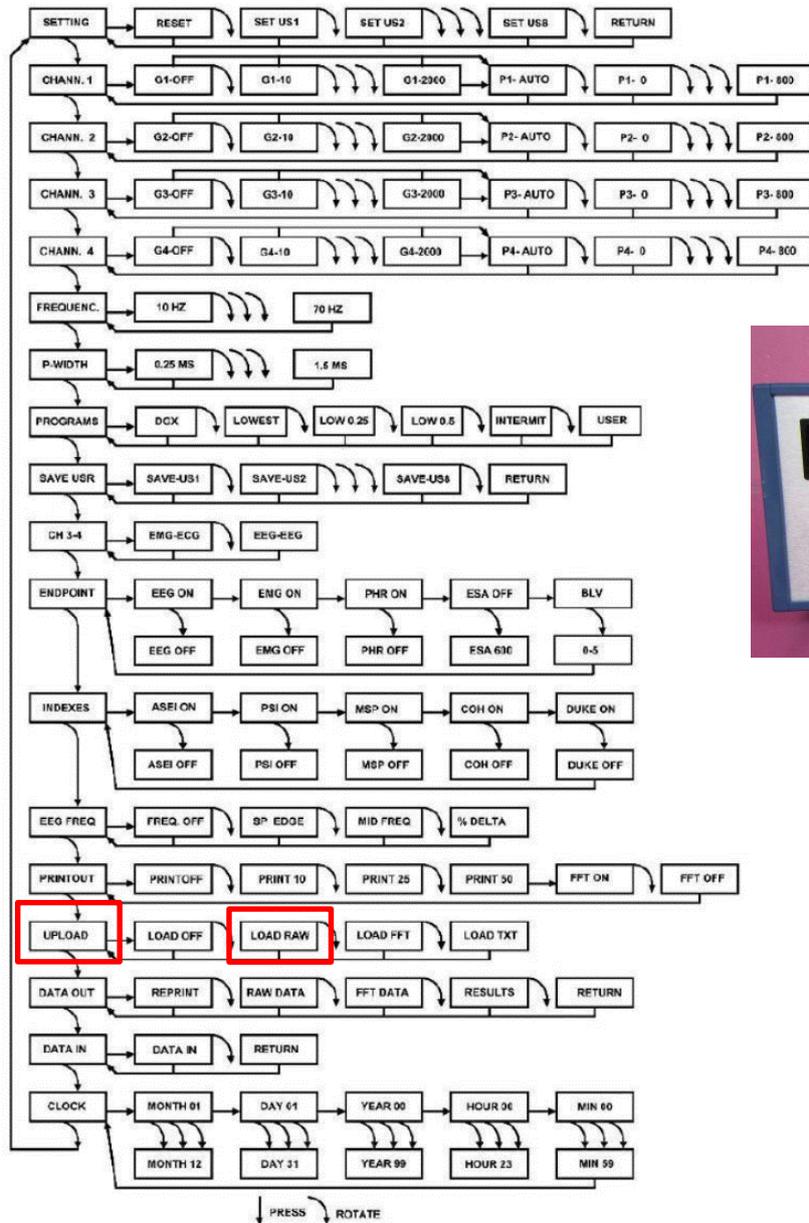
- 1. Setting up THYMATRON 4 to automatically transfer data to GPD ..... 2
- 2. Installing GPD ..... 3
- 3. Create new patients: ..... 4
- 4. Enter a new ECT treatment: ..... 5
- 5. Restimulation: ..... 8
- 6. Possible Errors:..... 9
  - I. Data transfer from Thymatron to GPD does not work after successful stimulation ..... 9
  - II. Treatment abortion ..... 10
  - III. Further support ..... 12

**!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.

# 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 FLEXDIAL. Then, the data should be automatically transferred after each stimulation.



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

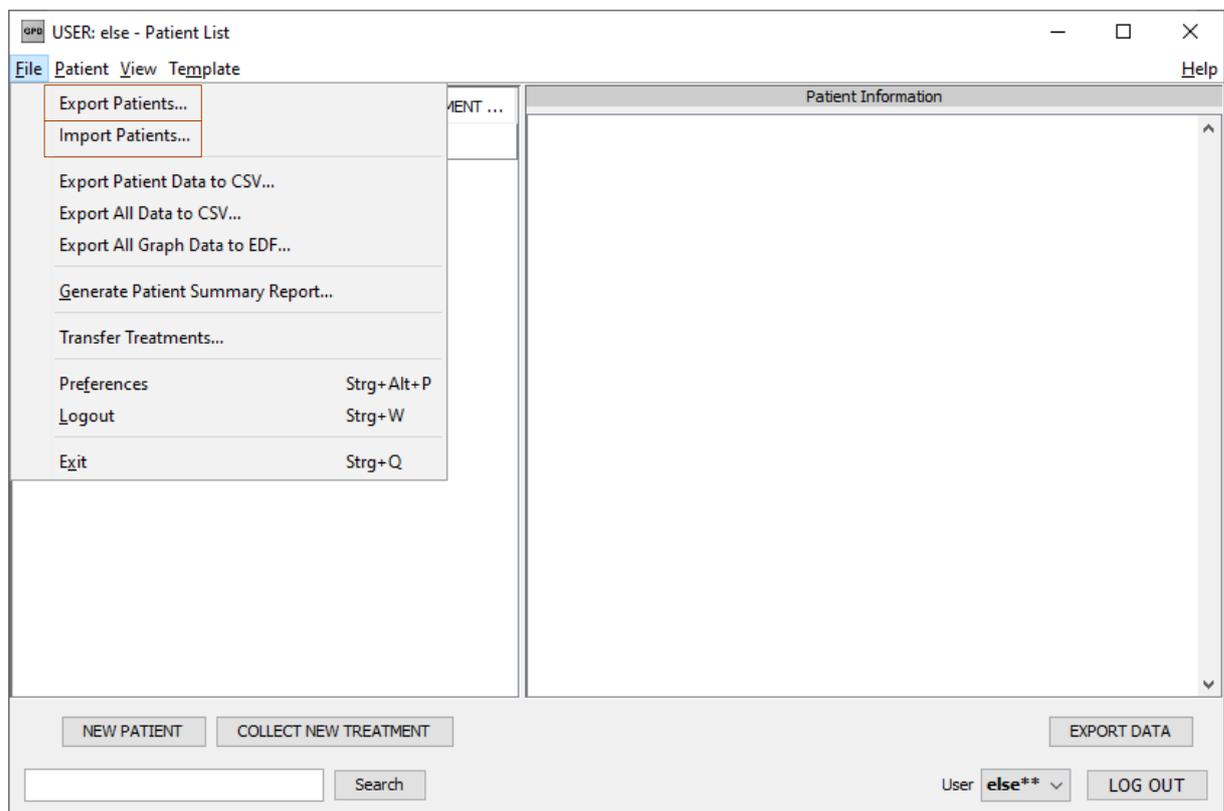
## 2. Installing GPD

### a) If no previous GPD version exists:

- Download the portable and configured GPD version *GPD\_Genet* from our website (use the link we sent).
- Connect your laptop with the Thymatron using this cable: [https://www.amazon.de/UGREEN-RS232-Seriell-PL2303-Chipsatz-Grau/dp/B00QUZY4UG/?language=en\\_GB&th=1](https://www.amazon.de/UGREEN-RS232-Seriell-PL2303-Chipsatz-Grau/dp/B00QUZY4UG/?language=en_GB&th=1)
- At the very first installation, a license key is needed. Just push the button “generate license key”. Next, you need to create a user profile. Push “create/manage user” and define ONE user for the whole ECT team, since you cannot share patient data between users.
- 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)
  - 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'. The window is divided into two main sections. On the left, there is a table with the following columns: 'LAST NAME', 'PATIENT ID', and 'LAST TREATMENT DATE'. The table contains one row with 'N/A' in all three columns. On the right, there is a 'Patient Information' window. It contains 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: 70', '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 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 and a user dropdown menu showing 'User upk\_ekt\*\*'.

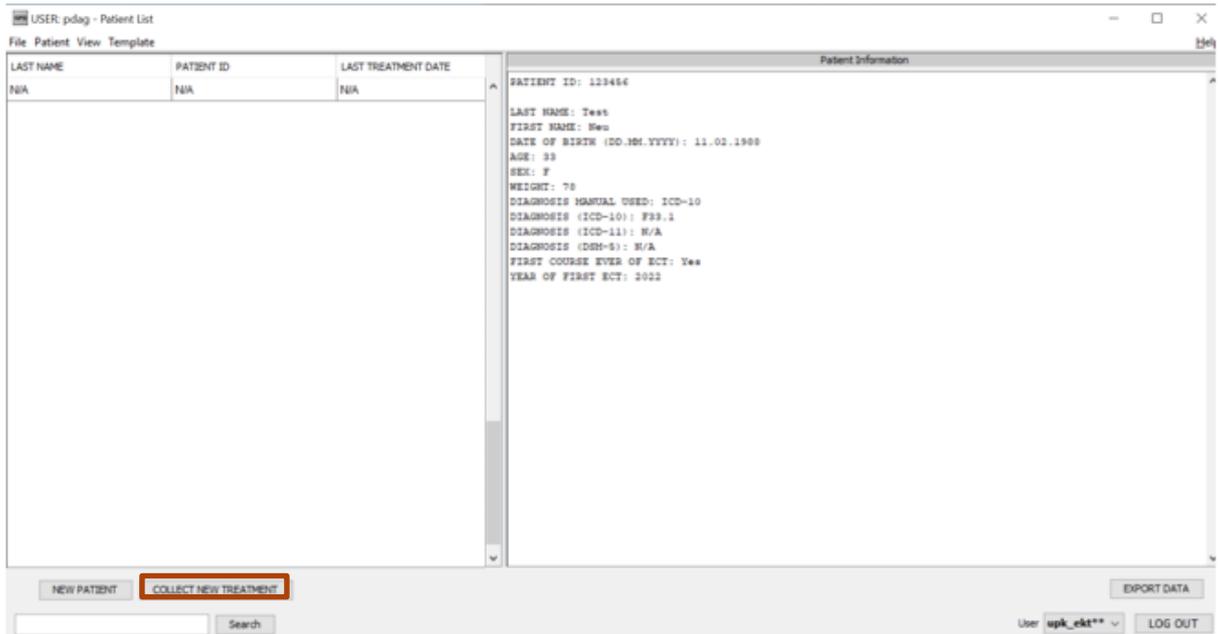
#### NOTE:

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.

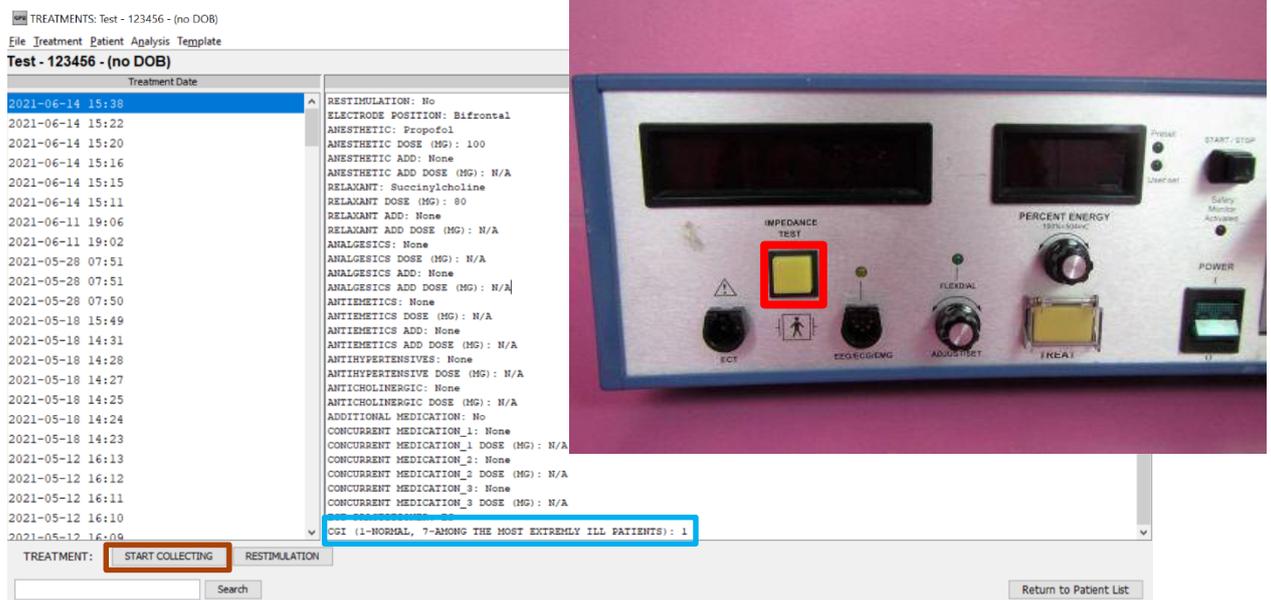
EXCEPTION: Weight is queried every sixth treatment in order to document the course of it during treatment. In addition, Patient Status is asked every fourth treatment to document any changes during treatment.

#### 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)



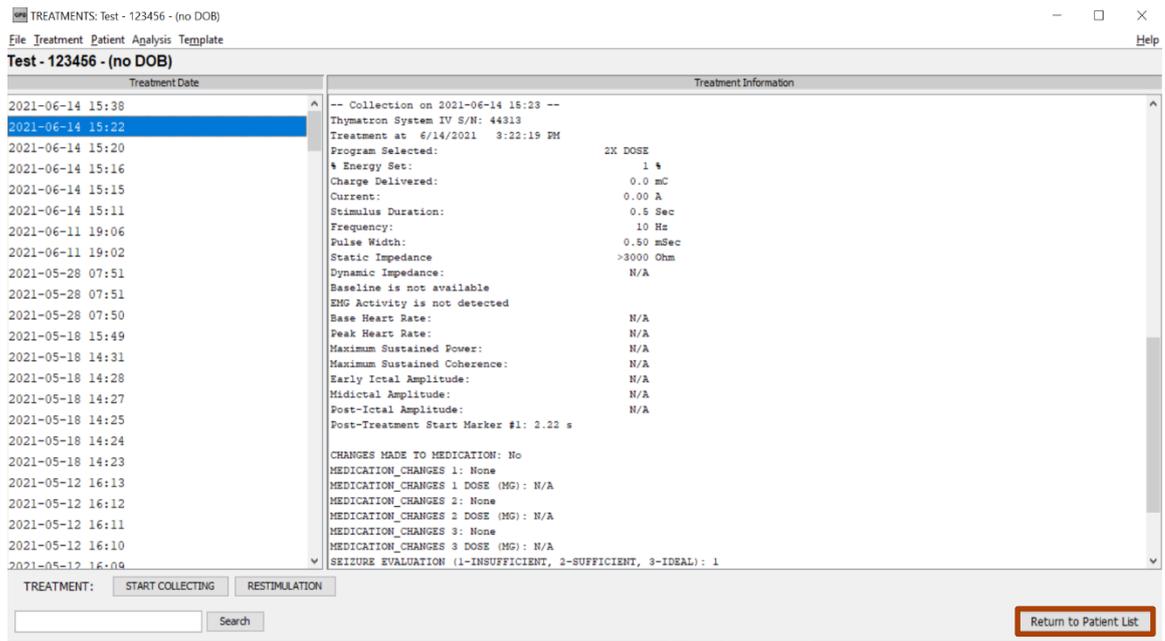
- After the treatment and after all data have been transferred (Thymatron flashes “OUT->->->” during data transfer), continue to fill in the corresponding fields:

**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»



- 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 displays the Thymatron software interface for a patient named 'Test - 123456 - (no DOB)'. The window is divided into two main sections: 'Treatment Date' and 'Treatment Information'.

**Treatment Date:** A list of dates and times from 2021-06-14 15:38 down to 2021-05-12 16:00. The entry '2021-06-14 15:22' is highlighted in blue.

**Treatment Information:** A detailed log for the selected treatment. It includes the following data:

- Collection on 2021-06-14 15:23 --
- Thymatron System IV S/N: 44313
- Treatment #6 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 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

At the bottom of the window, there are two buttons: 'START COLLECTING' and 'RESTIMULATION'. Below these buttons is a search bar containing the number '2.' and a red arrow pointing left towards the number '1.'. A 'Return to Patient List' button is located in the bottom right corner.

## 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

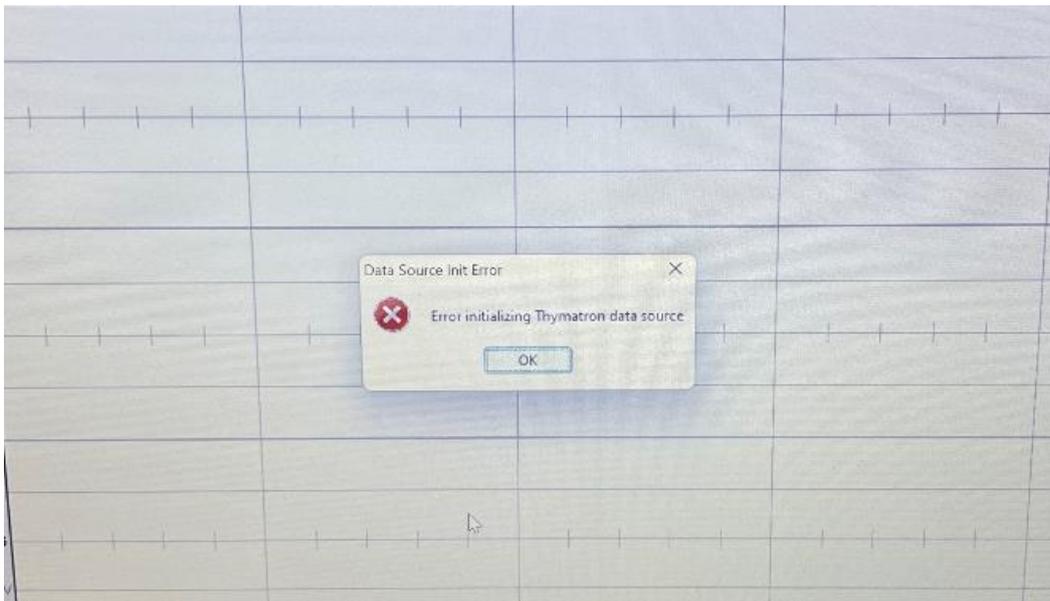
- a) it is switched off or
- b) the impedance key is pressed or
- c) Start/Stop is pressed.

Please check if

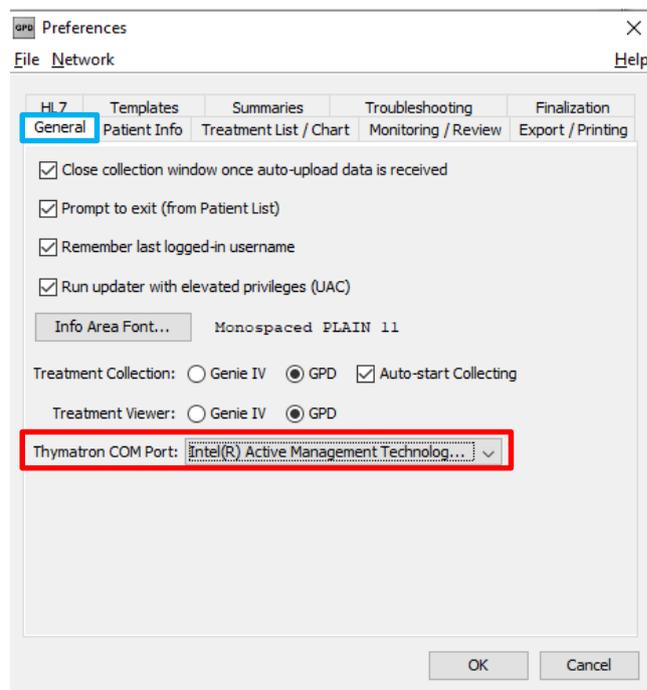
- 1) Cable is connected correctly?
- 2) COM-Port is detected?
- 3) In case of doubt, close GPD and open again or even shut down the laptop and start again.
- 4) Then open the corresponding treatment again (double click on patient -> select and click on the particular treatment) and click on START COLLECTING. 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



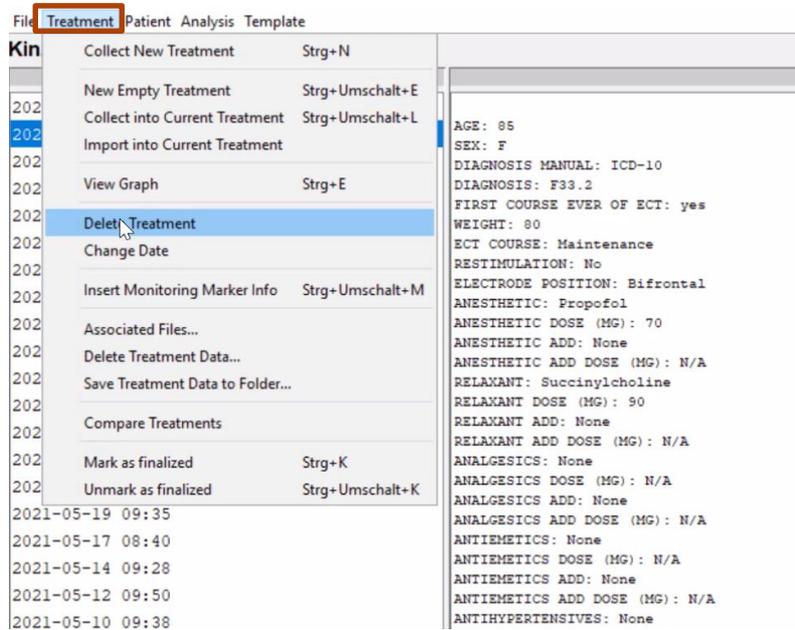
Find the correct port name for the cable you use by right-clicking on *This Computer* in the windows menu -> Manage -> Device Manager look for the cable name and memorize the COM Port otherwise just type in the search bar *device manager* and then proceed as just described. As soon as you have memorized 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.



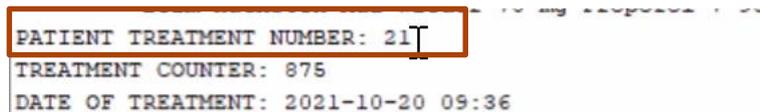
### III. Treatment abortion

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:

[genet.steeringcommittee@gmail.com](mailto:genet.steeringcommittee@gmail.com)