# Contract for platform use in 2024

## Reference: …………………….

**Study title:**

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…………………………………………………………………………………………………………………………………………

**Study acronym (used for booking):** ……………………………………………………………………………………….

**Principal Investigator:**

Name: ……………………………………………………………………………………………………………………….

Affiliation: …………………………………………………………………………………………………………………….

**Qualified MRI users* (if applicable):**

Name: ………………………………………………………………………………………………………………………

Affiliation: ……………………………………………………………………………………………………………………

**Authorized MRI users* (if applicable):**

Name: ……………………………………………………………………………………………………………………

Affiliation: …………………………………………………………………………………………………………………..

** Please refer to the authorization and qualification procedure below*

**Services:** *(please refer to pricing rules below for details)*

| Equipment / Services | Price per unit | Quantity | TOTAL |
|---|---|---|---|
| 3T MRI | 330 euros per hour | | |
| 7T MRI | 550 euros per hour | | |
| PET (ECAT HR+) | 330 euros per hour | | |
| EEG, TMS, EGI, Biopack | 45 euros per hour | | |

| | | | |
|---|---|---|---|
| Night of sleep under EEG/PSG (access to equipment, with no technologist) | 110 euros per night | | |
| Acquisition by a technologist | 75 euros per hour | | |
| Neuropsychological testing | 75 euros per hour | | |
| MRI qualification | 330 euros per person at 3T<br>550 euros per person at 7T | | |
| Basic support | 300[a] / 600 euros | | |
| Medium support | 2000 euros | | |
| Advanced support | 8000 euros | | |
| | | | |
| | TOTAL | | |
| | TOTAL with overheads and taxes[b] | | |

[a] For core members only

[b] Overheads and taxes apply for payment made from outside ULiège

The executive secretary of the platform will request a purchase order covering the estimated costs based on the present contract. **No study can start or continue without the corresponding purchase order**. Invoicing will be issued every 3 months until the end of the year or until the total amount of the purchase order is reached. The following year or when the current purchase order is complete, a new contract and purchase order will be issued.

**By signing, the PI certifies that he or she has read and approved the documents below:**

**- The pricing rules**
**- The authorization and qualification procedure**
**- Good practice guidelines.**

PI signature: Date:

Platform director signature: Support team member:

LIÈGE université
GIGA
In vivo imaging

# Invoicing of services in 2024

## Rates[1, 2]

| Equipment / Services | GIGA members & ULiège researchers + Non-ULiège researchers (for non-Uliege, 5% extra costs apply – see [3]) |
|---|---|
| 3T MRI | 330 euros per hour<br>*1st hour in full; then by 30 min* |
| 7T MRI | 550 euros per hour<br>*1st hour in full; then by 30 min* |
| PET (ECAT HR+) | 330 euros per hour |
| EEG, TMS, EGI, Biopack | 45 euros per hour |
| Night of sleep under EEG/PSG (access to equipment, with no technologist) | 110 euros per night<br>220 euros for a constant routine protocol |
| Acquisition by a technologist | 75 euros per hour |
| Neuropsychological testing | 75 euros per hour |
| Room for testing | No charge[4] |
| MRI qualification | 330 euros per person at 3T<br>550 euros per person at 7T |

Notes:

[1] These rates do not include special consumables (e.g. oxygen bottles) for which an additional fee applies (cost price).

[2] Rates will increase by 10% in 2025.

[3] A 5% increase is added in 2024 to Non-ULiège Researchers paying through funds external to ULiège. In such cases funds cannot be transferred directly on a ULiège account and invoices must include VAT (21%) and overheads (15%) leading to an effective loss both for the platform and the funded scientific project. Invoices will therefore include a 5% contribution to overheads in 2024. The contribution will increase to 10% in 2025 and then 15% in 2026 (I.e. to fully cover overheads, still leaving VAT uncovered). To avoid such situation, we encourage Non-ULiège users to make joint funding applications with CRC-IVI/ULiège members.

[4] Use of any of the above services includes access to basic consumables (earplugs and table paper in MRI, electrodes for EEG), bed linen for sleep unit, and testing rooms under booking, with reasonable use.

# Methods support for studies using the human imaging facilities

General remarks:

- Requesting support (and paying for the related fee) is not mandatory. This service is available upon request for new as well as ongoing projects. Support schemes for new projects are detailed below. For ongoing projects, support will be discussed on a case-by-case basis; please contact the platform at humanimaging.crc.giga@uliege.be
- When engaging in support, the methodological team commits to putting effort into the tasks and to provide solutions as quickly as their other duties as researchers allow. But there is no commitment to success (the methodological team has an obligation of means but not of results).
- Publications including data collected within the GIGA-CRC facilities must at least include the platform in their acknowledgment section, using the following sentence "This work was conducted at the GIGA In Vivo Imaging platform of ULiège, Belgium".

## For GIGA-CRC core members

For each study using one of the imaging facilities at GIGA-CRC (MRI, PET, EEG, TMS), the researcher can ask support from other CRC members if they wish to ensure that the methods, data, organisation, and analytic pipeline are sound before acquisition starts.

This support fee of **300 euros** includes:

- Advice on the design and data description (with a biomedical engineer)
- Advice on the means of task administration (e.g., presentation software for MRI, peripherals) (with an MR physicist and/or IT manager)
- The set up of the MR sequences and selection of the coil (with an MR physicist)
- Help for the planning of data BIDSification and organisation (with an IT manager)
- Help for the preparation of the analysis pipeline (scripts for spatial processing and statistical analysis) (with a biomedical engineer)
- Advice on electrophysiology protocols and analyses
- The consultancy for selection of cognitive tasks
- Advice for open science practice
- One session of data acquisition for quality check
- Two hours of pilot acquisition

The researcher presents the project to obtain further suggestions from the CRC members.

Support is not limited in time but requires the contribution of the core member. Support is considered as within-centre collaboration, considering that the core member will also contribute to the management and financial support of the platform and will also provide support to colleagues.

Moreover, all members of the CRC who contributed to the project will be included as co-authors of the publication.

## For researchers who are not GIGA-CRC core members

For each study using one of the imaging facilities at GIGA-CRC (MRI, PET, EEG, TMS), researchers can request support following 3 possible schemes: basic, medium, and advanced support packages.

***Basic support package***

This package costs **600 euros** (+ **5 % of contribution to taxes if non-ULiège funds – cf. above[3])** and includes:

- Advice on the design and data description (with a biomedical engineer)
- Advice on the means of task administration (e.g., presentation software for MRI, peripherals) (with an MR physicist and/or IT manager)
- The set up of the MR sequences and selection of the coil (with an MR physicist)
- Help for the planning of data BIDSification and organisation (with an IT manager)
- Help for the preparation of the analysis pipeline (scripts for spatial processing and statistical analysis) (with a biomedical engineer)
- Advice on electrophysiology protocols and analyses
- The consultancy for selection of cognitive tasks
- Advice for open science practice
- One session of data acquisition for quality check
- Two hours of pilot acquisition

The package represents approximatively 1 hour of support by each specialist and requires the contribution of the researcher in charge of the project.

The researcher presents the project to obtain further suggestions from the CRC members.

***Medium support package***

This package costs **2000 euros** (+ **5 % of contribution to taxes if non-ULiège funds – cf. above[3])** and includes the items listed in the basic support package + the set-up of MR sequences (with an MR physicist) not yet available on the platform that requires more than 1 hour of work. The contribution of the researcher in charge of the project is also required.

This package corresponds to services that require dedicated support and working times from the methodological team for tasks estimated to require less than 2 months of work.

The researcher presents the project to obtain further suggestions from the CRC members.

***Advanced support package***

This package costs **8000 euros** (+ **5 % of contribution to taxes if non-ULiège funds – cf. above[3])** and can include:

- Verification of the design and data description (with a biomedical engineer)
- Verification of the means of task administration e.g., presentation software for MRI, peripherals (with an MR physicist and/or IT manager)
- The setup of the complex MR sequences and selection of the coil (with an MR physicist)
- Practical support for the data BIDSification and organisation (with an IT manager)
- Advanced support for the preparation of the analysis pipeline (scripts for spatial processing and statistical analysis) (with a biomedical engineer)
- Set-up of electrophysiology protocols and analyses
- Selection of cognitive tasks
- Advice for open science practice
- One session of data acquisition for quality check
- Two hours of pilot acquisition

This package corresponds to services that require dedicated support and working times from the methodological team for tasks estimated to require more than 2 months of work and less than a year. The contribution of the researcher in charge of the project is also required.

The researcher presents the project to obtain further suggestions from the CRC members.

***Additional support***

Specific requests that do not fall within the above packages can be discussed and will be subject to a quote (~150€/h of work by platform specialist).

# Contract

For each study, a contract specifying the requested facilities and/or services and their respective ci-costs, an estimation of the number of hours of data acquisition, the commitment to issue a purchase order to cover the costs, and the type of support package that is requested will be signed by the PI responsible for the study, by the members of the support team whose help is requested and by the platform director.

Once the contract is established, the executive secretary will request a purchase order covering the estimated costs based on the contract.

# MRI authorization and qualification procedure

**The MRI qualified user is responsible for the steps of the data acquisition protocol (including participants and staff safety and quality of data acquisitions).**

If the PI in charge of the study has no qualified user in his/her team, there are 3 possibilities: (1) a member of his/her team trains to become a qualified user. Consider s/he will need at least 20 supervised acquisitions to be qualified; (2) a qualified technologist from the GIGA-CRC in vivo imaging runs the study for the PI, accompanied by an authorized member of his/her team; (3) the study is a collaboration with members of the GIGA-CRC in vivo imaging. A researcher from another team, who is a qualified user, acquires the data and is listed as an author on the subsequent publication. Mohamed Ali Bahri organizes basic training and qualification to this end.

The qualification procedure involves 4 steps that must be documented and signed on the ad-hoc document.

1) Authorization:
    a. Safety video from Siemens
    b. Read the wiki
    c. A training session of 2 * 1.5 hour at the console with Mike or Mohamed
2) Practice with a qualified user for at least 20 sessions. A minimum of 75% must be done on the scanner for which the candidate requests a qualification.
3) When the candidate feels comfortable with the protocol they want to use for their own study, the PI certifies that they are ready to go to the exam by signing the document.
4) Exams:
    a. Theoretical exam (with Mohamed)
    b. Practical session with a participant (with Laurent or Mike)

Important notices:

- A user will be qualified for the type of protocol they practiced only (e.g., structural scans, fMRI, CEST…). If they want to use another protocol, a few practice sessions and a new practical exam must be done.

- One is qualified for only one scanner (the one we practiced on for at least 75% of the sessions)

- The practical exam is charged one hour of scan to the PI (i.e., 330 euros for 3T and 550 euros for 7T).

# Good practice guidelines for MRI facilities

***Please refer to the wiki for complete description of rules and procedures.***

## 1. Before starting the study

**- Insurance and ethics:** Once the study project is established, request an **insurance** that will cover participants of your experiment and submit the project to the approval of the **Ethics Committee** (Comité d'Ethique Hospitalo-Facultaire Universitaire de Liège).

**- Funding:** Make sure that **funding** is available to cover the costs of your experiment (MRI scanning time and payment of volunteers).

**- Project presentation:** You may present your project in the presence of other CRC members to obtain feedback and ensure that the project is feasible and methodologically pertinent. Please contact Christophe Phillips - C.Phillips@uliege.be - for further information.

**- Authorization and qualification:** Everyone using the scanner needs to follow the **safety training**. An experiment can be conducted only by a **qualified** user, accompanied by an **authorized** user (see authorization and qualification procedure above).

**- Scanning slots booking session:** Scanning slots booked for experiments appear on a shared **Outlook agenda**, one for each scanner. Please ask Annick Claes - Annick.Claes@uliege.be – to give you access to the agenda. To **book a slot**, write to crc-imaging@lists.ulg.ac.be > by specifying the date, times, study acronym, name of qualified user and name of PI. If you must cancel a slot, please inform the other users as soon as possible via the same email address.
In case of intensive use of a scanner, around the 15$^{th}$ of each month, a meeting will be organized to book the scanning slots you will need during the following month in agreement with other users.

**- Subject appointments:** When a subject is to come to participate to your study, please **inform Annick** Claes by email (annick.claes@uliege.be) and specify the name of the subject, the date and time of the appointment and your name. Hence Annick is aware that you are expecting someone and she can call you to inform you that the subject has arrived or that the subject cancels the appointment.

## 2. Acquisition: before scanning

**- Medical support:** For each acquisition, a **physician** needs to be on call. Please refer to the outlook agenda to see who the MD on call is.

**- Check-list to operate the MRI scanner: Only qualified user** can operate the scanner. Check that the **parameters** of the scanner are working properly (Helium level, chilled water, and helium compressor) before starting it.

**- Coils:** If you must **change the coil** be **extra-careful** when handling them, as they are fragile. Mind the cable and the connectors. **Store** the unused coil in its designated place.

**- Metal check and informed consent:** When the subject arrives at the scanner, most of safety issues must have been discussed and checked. When first contacting the subject, you must check that the subject is fully **MRI-compatible**. In case of doubt, it is recommended not to scan the subject.

After receiving information about the scanner and the study, the subject must sign the **informed consent** document that has been approved by the ethics committee. The subject must indicate the name of his/her general practitioner to send information if brain abnormality is observed. Informed consent is also signed by the qualified researcher who is responsible of the study. Signatures must be obtained before the beginning of the experiment (at the beginning of the experiment if other acquisitions (behavioral...) are planned before the scanning session).

**- Equipment:** Always handle the equipment (mirror, headphones, computers, pulse meter…) carefully and report any malfunction immediately. If you notice that there is no table paper, earplug, or medical scotch left (including in the reserve), inform Annick who will place a new order.

## 3. During scanning

**- Presence:** The qualified and authorized users must **never leave the control room** when a subject is in the scanner.

**- Check data quality:** While functional data are acquired, view them with the online display in order to check their quality. Check also the quality of other types of data straight after acquisition.

**- Patient log file:** In the **patient log**, write down the date, the ID of the scan, the anonymized code of the participant, her/her year of birth, the name of the study, the equipment you are using, the type and the parameters of the sequences used, and any information about incidents or specific characteristics of the acquisition. NB.: if there are very few sheets left in the patient log, please print new ones double-face and place them in the file.

**- MRI log book:** Write down any incidents or problems regarding the parameters of the scanner or its operation in the **MRI log book**: nature of the problem and what has been done to solve it. Even an incident that seems insignificant should be reported. Also inform the MRI physicist (Laurent.Lamalle@uliege.be).

**- Troubleshooting:** As a qualified user, you know the rules and procedures to follow in case of any problem. It may be useful to **refresh your knowledge** by reading regularly the wiki.

**- Ethics committee: Upon inclusion of the first participant**, inform the ethics committee that the experiment has started.

## 4. After scanning

**- Data transfer:** After the acquisition, **export the sequences** to the server. All your data will be available after a few hours on fmriserver2/nifty for Prisma and fmriserver3/nifty for Terra.

**- Ventilation:** If you switched on the ventilation when the subject was in the scanner, do not forget to switch it off.

**- Scanner use log:** The Outlook agenda serves as the **scanner use log**. This log is used for the billing of the slots. If a technical incident prevented you from completing the acquisition, please ask Annick Claes to update the slot on the agenda.

**- Clean up:** Make sure that you **clean up the MRI and control rooms**. In particular,

- remove the used table paper,
- put in the appropriate dustbins all used equipments (e.g., earplugs, scotch…) and other wastes,
- attach the coil,
- remove the scotch from the alarm button and cables,
- clean and disinfect the MRI table, the coil, and other devices (alarm, pulse…)
- tidy up the control room (desk, chairs, cables)
- put away the laundry.

**- Switch off the scanner (PRISMA only): If you are the last person to use the 3T scanner** that day (NB.: even in the morning), switch off the scanner and lock the rooms.

**- Database maintenance:** For the scanner to work properly, the host computer database should always be **under 50%.** Once your data have been exported and you have checked that all sequences have been transferred properly, store them safely and **delete the data from the database**. As a rule, it should take **no more than 2 weeks between the acquisition and the deletion** from the database.

**- Results presentation:** Once the data are analyzed and you are ready to present the study in a conference or to submit the paper, you are encouraged to **present the results** during a CRC-seminar. You will receive constructive and friendly feedback that may help you to improve your paper/talk/poster.

**- Ethics committee:** Once a year, the ethics committee wish to receive a **report about the course of the study** (how many participants have been included…). In case of an **undesirable event**, the ethics committee should also be informed. A final report is to be sent **when the experiment is finished** (ideally, after the results have been accepted for publication).