The Hitchhiker's Guide To IRAP

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with the help of their fellow PhD students

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Note to the future edition teams

The present document contains information amenable to updates on a yearly timescale. The authors have put a lot of effort in designing and writing the guide, and wish to see it evolve in the best way possible. For these reasons, they have decided to write the following guidelines for future edition teams.

The "keys" (i.e. the source code) will be transmitted to the new PhD representative at the beginning of her/his term. The representative will have to check that the document is up to date, or delegate this duty to a chosen member of the team.

Rule number one

The representative should **under no circumstance** give access to the source code to all PhD students or to any person not involved in the edition of the document. A safe copy of the original edition will be kept by the authors and can be provided on request. Always keep references to the original document.

Rule number two

Updates made to the document should be incremental. Do not remove information unless it is absolutely outdated. Add information only if it significantly improves the guide. All modifications to the document should be briefly described in a dedicated annex at the end of the document.

Rule number three

Always ask permission to add someone's name and/or email address to the guide. The present work is published with the authorization of people whose name are mentioned.

Rule number four

People who have actively participated to improve an edition should be mentioned on a dedicated page after the current one.

The authors give **no warranty** as to the accuracy of the information found in this guide.

Contributions

Name	Date	Description
Alix Nouvel de la Flèche	September 9, 2021	Added a paragraph on the use of *"timechef"* in Sec. 4.7 advertising its use to put money on the restaurant card.
Manon Jarry	September 1, 2022	Update of contact email addresses and website links, update of the Toulouse urban network plan.
Manon Jarry	March 10, 2023	Update of contact email addresses.

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Chapter 1

Introduction

Dear fellow PhD student,

If you are reading these lines, you are most likely a (soon-to-be) PhD student at the *"Institut de Recherche en Astrophysique et Planétologie"* (IRAP). We hope you will find what you are looking for in these pages.

Discovering a new laboratory, possibly a new city, perhaps a new country, can be extremely overwhelming. Whether you are French or not, when you arrive at IRAP, guidance is mercy. Numerous students have gone through complex registration processes, got lost in the corridors, and have struggled to find a kettle or a coffee machine. In addition, not all students have supervisors with enough spare time to give them a proper tour, or help them through all the administrative steps they have to take. If you do not speak French, your arrival in the laboratory may be even more challenging: most of the emails you will receive, most of the documents you will have to sign and most of the information you will find online are exclusively edited in French. In this guide, we, current PhD students of the laboratory, wish to act for future generations of IRAP PhD students.

We have tried to design a document that regroups different sources of information you may need, redirects to web-pages you may have to visit, and clarify what we believe is worth clarifying. Here, you will find information about the laboratory, the doctoral school, life in Toulouse and, for foreigners, about life in France. This immense task was motivated with one goal in mind: trying to make a unique document to guide you through every step you may encounter when undertaking a PhD at IRAP.

So if you are at loss, feel no fear, hold on to this guide, and do not forget your towel ![1]

Sincerely yours,

The Edition Team of the Hitchhiker's guide to IRAP.

PS: If you find mistakes or typos in this document, or if you wish to provide feedback, please contact your current PhD representatives Jonathan Oers[2] and Alexei Molin[3].

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[1] Reference to 'the Hitchhiker's Guide to the Galaxy' by Douglas Adams.
[2] jonathan.oers@irap.omp.eu
[3] alexei.molin@irap.omp.eu

Chapter 2

Laboratory description

2.1 IRAP, OMP, CNRS, CNES, where am I?

You might have noticed numerous names when searching for information about the laboratory. Let us try to better understand what they refer to, and where **you** stand in relation to them.

2.1.1 Research organisms in France

There are a few major research institutes in France, each with slightly different missions.

CNRS

Internationally renown, the *"Centre National de la Recherche Scientifique"* is the biggest public research organism in France. It was created after the Second World War to coordinate French scientific research and answers directly to the French ministry of higher education, scientific research and innovation. This organism is implicated in probably every research fields you could think of. Depending on your grant agreement, your employer might be the CNRS. Permanent researchers hired by the CNRS do not have teaching requirements.

University

In France, the University has three missions: conservation (through libraries), education, and research. French universities answer to the ministry of higher education. They are divided in faculties; for instance, subjects such as Astrophysics are taught at the *"Faculté des Sciences et Ingéniéries"* (FSI). Universities award diplomas such as undergraduate degrees, master's degrees, and doctorates. Researchers hired by the universities often hold a position of *"enseignant-chercheur"* (teacher-researcher) and are therefore usually those who teach in undergraduate and master's degree programs.

CNES

The *"Centre National d'Etudes Spatiales"* is a public organism. It is the French equivalent of the American NASA. It differs from the CNRS in that it is exclusively dedicated to spatial studies, and carries out an industrial mission.

OMP

IRAP is a member of the Observatoire Midi-Pyrénées (OMP[1]). OMP is what we call an *Observatory* and more specifically in French an "Observatory for Sciences of the Universe" (*" Observatoire des Sciences de l'Univers"*). This sort of super-structure federates multiple research laboratories, and answers to multiple research organisms, including the CNRS, the CNES and the University. Other laboratories that are part of the OMP include LEGOS, LA, GET, *"Laboratoire Ecologie Fonctionnelle et Environement"* and CESBIO.

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[1] https://www.omp.eu/

IRAP

The *Institut de Recherche en Astrophysique et Planétologie* (IRAP[2]) is the reason this document exists. **This is your laboratory**. IRAP regroups a great number of researchers from the University, CNRS and CNAP, and with various research interests from planetology to cosmology. IRAP maintains collaborations with several institutes and answers to the Université Paul Sabatier, the CNRS and the CNES.

As a member of IRAP, you will have access to both the facilities of the laboratory, and or the observatory. You will for example be able to obtain an account to IRAP's computer clusters, and book OMP's vehicles for your professional activities. For information on how to set up your accounts, refer to Chapter 4.

2.1.2 Representation

To handle the complex organization of the laboratory, a number of commissions and a council meet on a regular basis to address issues and vote on aspects that define the future of the laboratory. As a PhD student, you will be represented in the commissions and in the laboratory council.

Laboratory council

Each year, IRAP PhD students elect a representative and a vice-representative. The representative sits at the laboratory council to defend the interests of PhD students and raise concerns or issues. Even if it is not an official requirement, it is strongly recommended that the representatives speak both French and English fluently, in order to communicate both with the international students and the other members of the council (given that the meetings are entirely held in French).

The PhD representative serves as an intermediate between PhD students and the administration. If at any point you have an issue and are not sure of the procedure to follow, you should not hesitate to contact your current representative Jonathan Oers[3].

Computer equipment commission

The computer equipment commission discusses every hardware-related issue and need. PhD students are represented by Matteo Loche[4].

Web commission

The web commission has to edit and update the IRAP website. The PhD representative for this commission, among other things, handles the PhD students webpage[5]. If you want to add or update information to your profile, contact Alix Nouvel de la Flèche[6], the representative for this commission.

Office and work spaces commission

The Office and spaces commission handles issues related to offices affectations. We are represented by Claire Guilloteau[7].

OMP council and doctoral school councils

The OMP and the doctoral school also have councils similar to the laboratory council. PhD students regularly elect representatives for those councils as well.

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[2] https://www.irap.omp.eu/
[3] jonathan.oers@irap.omp.eu
[4] matteo.loche@irap.omp.eu
[5] https://www.irap.omp.eu/doctorants-irap/en/phd-webpage/
[6] alix.nouvel-de-la-fleche@irap.omp.eu
[7] claire.guilloteau@irap.omp.eu

2.2 Belin vs Roche: not a war

2.2.1 Description and access

IRAP is divided between two sites commonly referred to as Belin and Roche, and respectively located *"avenue Edouard Belin"* and *"avenue du Colonel Roche"*. Historically, the two sites hosted two different research entities, later merged to form the laboratory we know today. When working at IRAP, you will be given an office on one of the two locations. To access the buildings, you will be issued a badge which, by default, will probably only open the doors at the site where it was issued. While this is the expected behavior, you might want to have access to both buildings, as you could be interested to attend seminars, conferences, team meetings, or simply visit a fellow researcher on the other site. Therefore, we recommend that you write an email to Selim Benguesmia[8] to request access to the site your badge cannot open (access will be granted remotely and within short time).

2.2.2 Thursdays casual after-works and other events

The geography has a tendency to part PhD students in two groups. We have tried to act to rebuild unity within the laboratory in spite of distance between the groups. We hope you will perpetuate this action by taking part in shared events with PhD students from both sites.

In the spirit of creating a community of IRAP PhD students, the said PhD students gather every week on Thursdays around 6:30pm in one of the cafeterias. The PhD representative will usually send a kind reminder of the event (see Section 2.1.2 for the representative official duties).

Additionally, the representatives inherit the mission to organize events for PhD students. The traditional Christmas dinner with secret Santa is an example, but they could also include Halloween, summer celebrations, gathering around a *"Galette des rois"* and any event the representatives feel like organizing. These are obviously not part of the official nor mandatory duties of the representatives, who often ask for help from the PhD students community for every event. Additionally, we leave you with a number of tips on our favorite places to go out in Toulouse (see Chapter 6).

2.3 PhD students networks

WhatsApp

Many PhD students use WhatsApp groups to communicate within the laboratory. There is no official list of those groups, and none regrouping all the PhD students. Do not however hesitate to ask to be included in the groups you may be interested in.

Slack

A slack[9] for the IRAP PhD students was created on the initiative of Sujay Mate, a fellow PhD student. We recommend you join this slack group as soon as you obtain your IRAP email address. We also suggest you download the slack app and open it at login, so you do not miss anything. PhD students use slack to ask questions on technical aspects (latex, python, ...), to chat with friends, and to organize seminars.

2.4 How to get to IRAP?

The laboratory is located in the south-east area of Toulouse. You can reach IRAP in different ways:

- By bike or by foot, which is ecologic, healthy and allows you to easily go around the city. Keep in mind that IRAP is located along the *"canal du midi"* which crosses the whole city north to south and is suitable for bikes and pedestrians. If you do not have your own bike, you can use **VélôToulouse** which is the official public bicycle sharing system of Toulouse (see Section 6.2.3).

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[8]logistique@irap.omp.eu
[9]irapdoctorant.slack.com

- By car, since IRAP (both Roche and Belin sites) have parking lots. These close at 8:30pm, but if you park your car at CESBIO (on the Roche site) you can open the gate even after 8:30pm; you should contact Selim Benguesmia in order to get access. We highly discourage to leave your car during the night and especially during the weekend in those parking lots, since some owners have come back to find their vehicle damaged.

- By public transports, using the Tisseo network (see Section 6.2) The closest subway station to IRAP is **Faculté de pharmacie** and the closest bus stations are **LAAS**, **ENAC** (to Roche) and **CNES - IAS** (to Belin).

Chapter 3

Contacts directory and emergency numbers

3.1 Directory

If needed, here are some contact email addresses:

- rh@irap.omp.eu – To reach the IRAP Human Resources department

- gestion@irap.omp.eu – If for some reason you need to contact the department handling finances

- direction@irap.omp.eu – If you need to contact the direction team

- supportlogistique – If you need support from the logistics department.

- secretariat.sdu2e@obs-mip.fr– To contact the SDU2E doctoral school.

- jonathan.oers@irap.omp.eu or alexei.molin@irap.omp.eu – To contact your current PhD representative Jonathan Oers or Alexei Molin.

- egalite@irap.omp.eu or sylvie.brau-nogue@irap.omp.eu or rkieokaew@irap.omp.eu – To reach the equality referents if you feel under any kind of discrimination or harassment.
  Also see the dedicated webpage: https://www.irap.omp.eu/egalite/

3.2 Emergency numbers

Here is a list of emergency contacts.

- 15 : SAMU (*"Service d'Aide Médicale Urgente"*) – For medical emergencies (cardiac arrest, severe bleeding wound, etc.)

- 18 : Firefighters – In case of fire, car accident etc.

- 17 : Police – To signal an infraction (burglar breaking into a house, fight, etc.).

- 112 : European number – Can be used in any country of the European Union, will transfer you to the proper authorities.

CAUTION: These numbers should be used without hesitation for any relevant situation. **However**, calling for fake emergencies can be severely punished (up two 2 years incarceration and a 30000 euros fine)

Chapter 4

Setting up your workspace

A lot of information is available on the OMP intranet (in French), so it is a good reference point.

4.1   How do I connect to the IRAP network?

To connect to the IRAP network, you should be fully registered and have signed your employment contract with IRAP. Once all those steps are completed, head for the computer desk.

Accessing the wifi network

For any request regarding network access, please contact supportinfo@irap.omp.eu. Alternatively you can go to the J29 office (Roche building) and ask for your webmail credentials. Please beware that IRAP has a wired network, but you **must** make a formal request **before** using it.

If you have a guest who needs to use the IRAP network, it is possible to create a ticket from the IRAP intranet. Do not hesitate to ask for help to your current representative (Jonathan Oers) if you do not speak French.

Eventually, you can always use the European eduroam[1] network with your university credentials.

Accessing the OMP intranet

The first time you connect to the IRAP/OMP intranet[2], you will have to request a password. Click on the *"Récupérer vos identifiants OMP"* button to be redirected to a webpage where you need to provide your IRAP email address and choose IRAP in the *"entité d'exercice"* field. You will receive your credentials by email.

Accessing the wired network

This will be done through the IRAP/OMP intranet. Go to the website, and log in. Once online, you will be presented with a friendly interface with shortcuts everywhere. Notice the second horizontal list of buttons at the top. This is where you will find *"Informatique IRAP"*. Click on it. This will bring you to a new section, with cathegories. Find the section that reads *"Réseaux"*, and click on *"Demande de connexion d'un ordinateur sur le réseau filaire IRAP"*. There you will have to log in again, select your name from the list in *"Identifiant"* and enter your OMP intranet password. Now you have access to the request form. You **must** at least provide the following information:

- *"Adresse MAC"* (your MAC address). There are multiple ways to find this. One solution is described on the intranet[3], but you can also google it.

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[1] https://cat.eduroam.org/
[2] https://intranet.obs-mip.fr/
[3] https://intranet.obs-mip.fr/Informatique-IRAP/reseaux/adresse-mac

- *"N° de prise"* is the number of your socket. This number is written on every Ethernet socket you will see. If you wish to use a new socket at some point, you will have to submit a new request.

- *"Site"* to specify whether you are in Belin or Roche.

- *"Type"* to specify whether you have a macintosh computer or not, and whether it is a laptop (*"portable"*) or not (*"fixe"*).

You will receive an email confirming that your request was taken into account, and you will be able to use the wired network! Note that the process is not automatic, so rely on the wifi while waiting.

4.2   I need access to TITAN

TITAN is the IRAP computer cluster running SLURM job scheduler. It will be useful to you if you wish to run long and/or parallel programs. You can use TITAN from within the laboratory and from outside. In the first case, you should send an email to supportinfo@irap.omp.eu.

From outside the laboratory, you will have to additionally require an access to the ssh gateway. This can be done either by contacting the email address mentioned above, or through the intranet[4]. On the intranet, you will have to click on the *"Connaitre et modifier mes informations personnelles de l'annuaire"* link, connect, check the box regarding the *"passerelle ssh"* at the bottom of the form, and click on send. To connect to TITAN, you will need to access the gateway via ssh, and then connect to the cluster. It will be significantly slower than connecting from within the laboratory. Do not forget you can use a jump host[5] for simplicity.

4.3   Where can I print?

In order to print, you need to find and set up one of the available printers. The first step is to log in the OMP intranet (see Section 4.1) and follow the instructions under *"Informatique IRAP → Gestion du parc → Impression, Reproduction → Installation des HP via le serveur d'impression pour windows, linux or mac osx"*, depending on the operative system you are using. The same webpage lists all the available printers, based either in Belin or Roche. If you struggle with French, do not hesitate to contact the PhD students representative (see Section 2.1.2).

In Belin

There are five printers available at the IRAP laboratories in Belin. Four of them print in black and white (see Figure B.2 and Figure B.3 to help you with directions):

- hp600fax : HP Laserjet 600 M602 is located in the mailboxes room, on the 1srt floor (ground floor), room B072

- hp600etage : HP Laserjet 600 M602 is located on the second floor in the corridor just on your right when walk up the stairs from the main entrance of Belin

- hp600plan : HP Laserjet 600 M602 is located on the second floor

- hp600plan-rdc : HP Laserjet 600 M602 is located on the first floor

And one of them supports color printing:

- hp750fax : HP Color Laserjet M750xh located in the mailboxes room, on the 1srt floor, room B072, next to hp600fax.

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[4]https://intranet.obs-mip.fr/Informatique-IRAP/reseaux/passerelle
[5]https://wiki.gentoo.org/wiki/SSH_jump_host

In Roche

In Roche, three printers can be used for your black and white documents (see Figure B.4):

- improche1 : HP Laserjet 600 M602 – second floor next to the administration

- improche2 : HP Laserjet 600 M602 – second floor next to the building central staircase

- improche3 : HP Laserjet 600 M602 – (ground level 44, in front of the white hall)

And three of them support color printing:

- improche4 : HP Color Laserjet 4700 DTN, – second floor next to the building central staircase

- improche5 : Multi-Fonction Toshiba e-studio-361c – Algécos hall. This printer also allows to send scanned files to @irap.omp.eu email addresses

- improche6 : HP Color Laserjet M750xh located on the second floor next to the building central staircase

Printers access

All printers are accessible through the IRAP network, but you will have to configure the printers on your computer. The OMP intranet has a dedicated page[6] to help you. Click the tab *"Installation des HP via le serveur d'impression pour windows, linux, mac osx"* to obtain information on how to set up the printers for your OS configuration.

4.4   The OMP library

You can borrow documents from the OMP library, conveniently located on the left of the main entrance on the Roche site. The library is part of the University network and therefore benefits from all its resources. You can search for documents oline via the Archipel website[7]. Do not hesitate to ask the staff for help if you cannot find what you are looking for. They will be very happy to help you.

4.5   Vacation days, remote working, official requests

4.5.1   For CNRS agents

Janus is a centralized identification system for the CNRS. **If** you are paid by the CNRS, or if your funding goes through the CNRS, you will have access to a number of online portals.

Agate

Agate[8] will allow you to request vacation days (*"CA"*), formation days (*"Formation, CPF"*), and remote-working days (*"Télétravail"*). There again, the entire website is in French. It is however not very difficult to navigate. You will see on the top right of the website a number of buttons :

- *"Calendrier"* allows you to have an overview of the entire year with a color code associated to different 'day situations'. This will help you visualize when you were on holiday on remote-working, on training days, or away for a "mission" (*"Mission"*).

- *"Dépôt"* enables you to request vacation/formation/remote-working days. In *"Type d'absense"*, select the appropriate field. Provide a start and end date including morning or afternoon (*"Matin"* or *"Après midi"* respectively).

When you make a request, you will receive a confirmation email. Vacation days must be validated by your supervisor, or the direction.

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[6]https://intranet.obs-mip.fr/Informatique-IRAP/parc/impression
[7]https://catalogue-archipel.univ-toulouse.fr/
[8]https://agate.cnrs.fr/

Tempo time sheet

If you are paid by European funds, it is highly probable that you need to fill out a sheet every month to declare your attendance to the project you are involved in. This will be done on Tempo[9]. This webpage is available in English: click on the little British flag on the top right corner of the webpage in order to change the language settings. However, some fields will remain in French. On Tempo, you can declare your working time on a daily, weekly or monthly basis, unless your employment contract requires you to submit the form at the ed of each month. You should receive reminders via emails.

Note that when filling a week or a month, there is a shortcut at the bottom of the list which lets you complete all the fields at once. The Activity field has three options: other activity (*"Autre activité"*), time spent not working (*"Temps non travaillé"*), and the name of your project.

Also, if you are using Tempo, please remember to fill your vacation days on Agate **before** validating your Tempo time sheet. The accepted vacation days on Agate should automatically appear in your Tempo time sheet with the label *"Absence"*.

BibCNRS

BibCNRS[10] is an online application giving you access to a number of books, article and other resources. Note that while this a CNRS initiative, any PhD student can be granted access to the portal. At first login, request an access with you IRAP email address, and proceed as 'external staff' if you are not under contract with the CNRS. If the error "The information provided does not allow you to continue. Please check your entry." shows up, it is possible that your email address is not yet registered in the CNRS database. In that case, please contact your *"Directrice Administrative"* Josette Garcia[11] for help.

4.5.2 For University agents

Holidays

University agents should use the PHP platform. When you are on the main OMP Intranet page, check in the *"Services en ligne"* panel on the left and click on *"Congés - Gérer vos congés"*. Then you have the PHP service on the right panel and, after clicking on it, you will reach a page asking you for your IRAP ID and password. Keep in mind that you will need to be connected to the IRAP network (WIFI or ethernet).

Payslips

If you are funded by the doctoral school (and therefore by the University), your payslips are available online[12].

4.5.3 Special cases

If you are not among the situations mentioned above, please contact Jonathan Oers[13] to share your experience, and help us improve this guide!

4.6 Break time, where is the coffee machine?

In Belin

In Belin there are multiple break rooms and coffee machines. The main cafeteria is located on the ground floor, in room B089. There, you will find a coffee machine, a vending machine, a microwave and a kettle, as well as tables and couches. You will find similar machines in other laboratories hosted on the site.
An IRAP break room with a water fountain is also present on the first floor. There you will find a fridge, a small espresso machine (bring your own grinded coffee !) and newspapers.

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[9]https://tempo.cnrs.fr
[10]https://bib.cnrs.fr/
[11]josette.garcia@irap.omp.eu
[12]https://ensap.gouv.fr/web/accueilnonconnecte
[13]jonathan.oers@irap.omp.eu

In Roche

In Roche, there is a cafeteria with vending machines and fridges on the ground floor (Figure B.4). In addition, you will find a vending machine and a coffee machine directly at the entrance, right after the welcome desk. In front of it you will find a table and couches. From the welcome desk, take left just before the building central staircase and then the first door on the right, before office J049.

Be nice to our planet !

All the coffee machines at IRAP allow you to use your own mug. Put your mug in the compartment and the machine will typically display a message (*"Sans gobelet"*, for example). The selected drink will then be poured directly in your mug. Please help reduce our plastic waste and bring your own mug! Our planet (and your wallet) will be grateful.

4.7   Lunch time, where is the food?

Whether your are in Roche or Belin, here are your options :

- **CNRS/ELIOR cantine** : This is the most common option. Here you can choose between a full meal or a sandwich/salad. In both cases, the price will depend on your funding: from 3€ up to 8€. To have more information about how much you will pay, you can contact Josette Garcia. Note that it is also possible to invite an external person to the cantine (your date, your mom, etc), in which case they will pay full price (12€).

  There are two ways to pay at the CNRS cantine: directly with your credit card just before eating, or via the ELIOR app *"timechef"* (Fig. 4.1). The second option is the best, because you have access to the menu and prevent long waiting queues at rush hour.

  The registration to *"timechef"* is child's play. Download the app (available on Google play or Apple store) and prepare your CNRS card with all the required information. On the registration page, shown in Fig. 4.1, you need to add CNRS TOULOUSE (31055) in the *"site de restauration"* panel and the number written on the top right of your CNRS card in the *"Numéro de badge"* panel. The rest is your first and last name, email address and password. Once registered, you just need your email address and password to connect to the app.

- **ENAC foodtruck** : This is the closest foodtruck. It is in front of the ENAC site, next to the roundabout. The only thing you can get there is a sandwich with Toulouse sausages, for roughly 6€.

- **University cantine** : This is the cheapest option if you are not paid by the CNRS, you can have a full meal for less than 4€. Going there will however require to walk at least 15min from IRAP or take the bus. There are two different cantines, one is next to the *"Paul Sabatier"* subway station called *"Restau U' Le Théorème"* and the other one is next the SIUAPS and is called *"Restau U' Le Canal"*.

- **University foodtruck** : There are two different foodtrucks within the University campus to our knowledge. The first one is next to the roundabout right after the bridge crossing the *"canal du midi"*, arriving from IRAP. It is also a bit far from IRAP by foot. The second one is next to *"la Maison pour la science en Midi-Pyrénées"*, in the parking lot. For this one you will have to take the bus.

- **Bring your own meal** : This is always an option and more and more people tend to use this one. You have everything you need either in Roche and Belin to have a comfortable environment for lunch (see Section 4.6 for the break room places). You can also join people who are eating at CNRS cantine if it is outside.
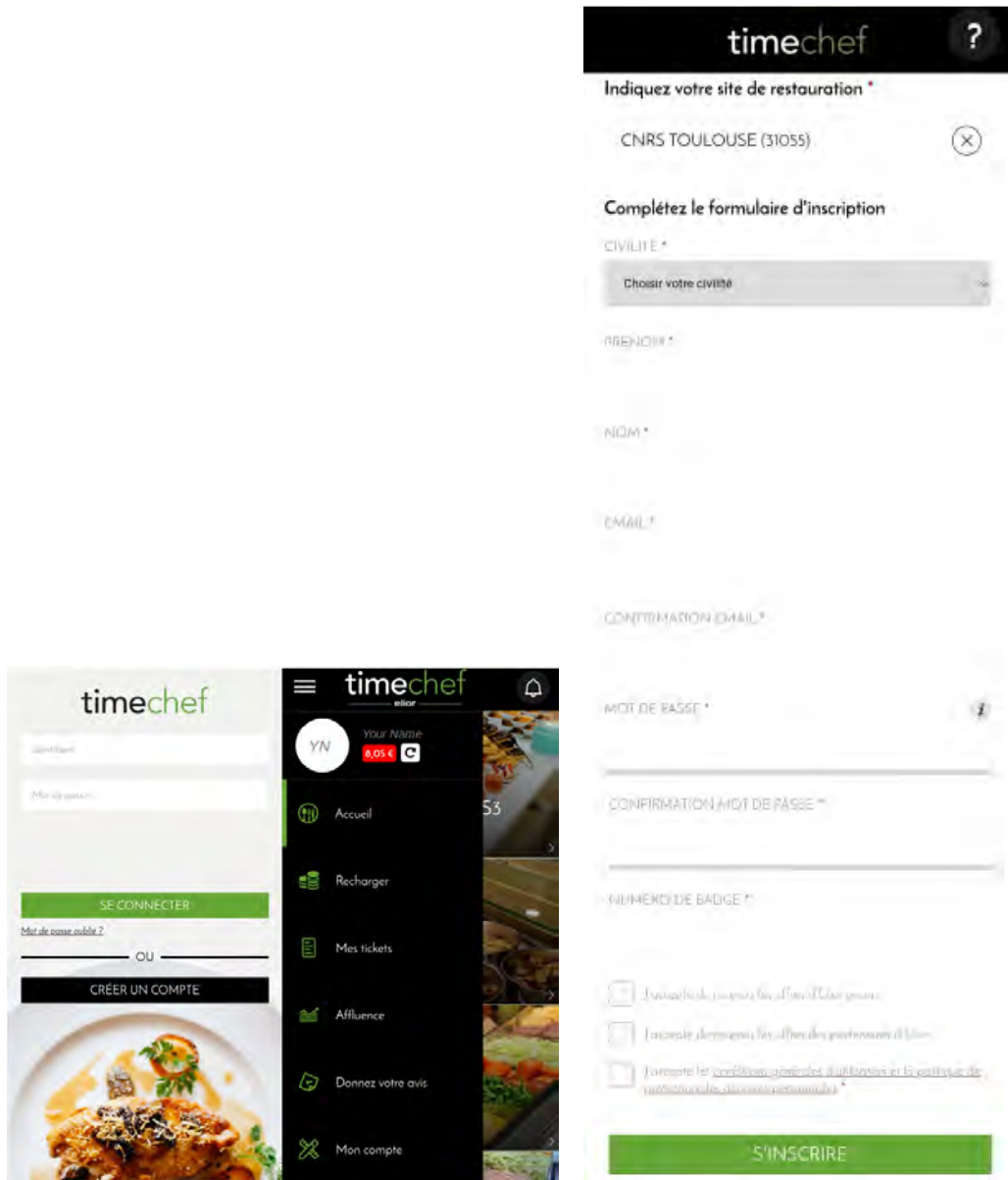
Figure 4.1: Right: Interface of the *"timechef"* app. Left: *"timechef"* registration page.

4.8   I want to recycle !

There are multiple recycling points on the two sites. For Belin, refer to the plan in Fig. B.1. In Roche, there are only bins for paper in front of the main entrance. If you need to throw away big stuff, you will need to go outside in both Belin and Roche.

Chapter 5

PhD administration

5.1 Registration

The complete registration process is divided in two steps: you will have to register to both the Doctoral School (also known as pedagogic registration) and the University, in this order. French administration has a long standing tradition of paperwork. Despite the attempts to improve its efficiency by introducing new online procedures in the last few years, the process can remain difficult depending on your situation.

We recommend you begin, in order to complete the full registration (Doctoral School + University) before the deadline, which is usually mid-October. We wish to provide you with the most up-to-date information on registration from A to Z, but this will be of the utmost difficulty since the procedure depends on your own personal situation, and tends to vary from year to year. Most of the documents you will encounter are, we are afraid, in French. We hope this chapter will help you go through all of them, whether you can speak French of not.

Most of the information reported in this chapter is also presented during the *"Reunion de rentree"*. This is a first meeting with the doctoral school and aims at welcoming PhD students. It is typically organized either in October or November.

5.1.1 The Doctoral School

If you are starting your PhD at IRAP, you will most likely be registering to the SDU2E Doctoral School (*"Sciences De l'Univers, de l'Environement et de l'Espace"*). This Doctoral School registration is carried out through the ADUM[1] website Remember that you will be officially enrolled **only after** the University registration is complete. You will find help and information in French and English on the Doctoral school website[2].

You might have already encountered ADUM when applying for your PhD position. The website offers to send applications for PhD projects, and, once accepted, to pursue your registration. ADUM is available in both French and English. You will have to fill out some forms in sequential order with compulsory information. There are roughly ten web-pages, and filling each of them might require a bit of time; no worries, you can save the current status of your registration and turn back on it later.

One of the commonly known issues on ADUM for first year registrations comes with the PhD committee (see Section 5.2.4 for a desciption of the committee's mission). ADUM will ask for the names of the members of your committee, although it has probably not been established yet. Past PhD students have had this issue; the workaround is to give the name of your PhD advisor (who will be a member of your committee) and carry on with the registration. You will be able to update information about your PhD committee later on with your advisor's approval.

When you finalize the registration, the online system will automatically generate a few documents which, in turn, will be automatically sent to your supervisor for their electronic signature. Afterwards, these documents will be sequentially sent to your co-supervisor(s), if any, the head of IRAP, and the direction

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[1]https://www.adum.fr
[2]http://sdu2e.obs-mip.fr/

of the Doctoral School. You can monitor the status of your registration directly on ADUM, and once the information you provided has been validated, you will receive a confirmation email. This email will contain instructions on how to proceed with the administrative registration at the University, which is the focus of the next section.

Among the generated documents, the *"Convention Individuelle de Formation"* (CIF) will be present. It is a legal document that mentions the parties involved (you, your supervisor, the host lab, etc.), summarizes the main aspects of the doctoral project (its structure and scope), and outlines the work and formation carried out. This document can be edited each year during the (re-)registration process and it will be required at the end of the PhD.

When finalizing your registration, you can choose whether to have a dedicated webpage on the Doctoral School website. The aim is to provide potential job recruiters additional means to find information about yourself, but it is not compulsory. It summarizes the information you provided on ADUM, including a link to your CV. The information displayed on the webpage can be edited at any time. Examples can be found on the Doctoral School website, through the "PhD students directory" linked on the left sidebar.

For second- and third-year PhD students, the procedure on ADUM is very similar, but the time needed to complete it is drastically reduced because most of the information is already saved.

5.1.2 The University

You thought the previous registration was tedious? Brace yourself, because now comes the administrative procedure of the University. In this case, there is a significant difference based on whether it is your first registration, or if you have already completed your first year.

For first-year students, you start by paying the *"Contribution de Vie Etudiante et de Campus"* (CVEC) which can be easily performed online[3] (the amount varies around 90€). You just need to create an account and follow three guided steps, that are conveniently translated in English for international students. It is very important that you print the receipt at the end of the procedure, since it will state the certificate number. This is an alphanumerical code with the following syntax: *aaan-aaaaaa-nn* where a is a random letter and n is a random number. Both the Doctoral School and the University want this number; yes, you will have to return to ADUM and provide it.

Now, you can follow the procedure described on the first year instructions website[4]. Basically, you need to fill out a form called *"Dossier d'inscription administrative"*. You can download it by clicking *"Télécharger le dossier d'inscription et la liste des pièces justificatives demandées"* in step 4 on the provided webpage. The website lists also a guide called *"Comment remplir votre dossier d'inscription en 1re année de doctorat?"* which describes how to fill out the *"Dossier administratif"*.

You will need to prepare all the attachments and send them to: `deve.ia-doctorat-depot-dossier@univ-tlse3.fr`. The object of the email should be: your family name, your first name and the year of the registration to the PhD. The list of documents to attach to the email is the following:

- *"Dossier administratif"*

- Copy of valid identity card or passport

- Copy of the translated birth certificate for non French students

- Copy of the employment contract stating your gross (before taxes) salary for three years, or a letter signed by the head of the lab stating start and end dates of the PhD as well as your gross salary, or copy of the studentship certificate

- If your PhD is under the CIFRE agreement, then a copy of the ANRT certificate

- Certificate of the CVEC **except** for *"cotutelle"* (joint supervision between two establishments) if the student is paying the tuition to the second university for the current year

- Copy of the diploma that made you eligible to the PhD position

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[3]https://www.messervices.etudiant.gouv.fr/envole/
[4]https://www.univ-tlse3.fr/inscription-en-1re-annee-de-doctorat

- Summary of the registration with the Doctoral School (generated by ADUM once all the signatures are collected and the information validated)

- Copy of the civil responsibility (*"Responsabilite civile"*) displaying the mention *"vie privée"* of *"scolaire et extra-scolaire"*. See Section 7.4 to see how to obtain one.

- A colored picture in jpg or jpeg format (for the student card). It must be an ID like picture.

If you are doing a *"cotutelle"*, the following documents are also required:

- Certificate of registration to the partner University.

- Copy of cotutelle contract, signed by all parties.

- Certificate of the studentship stating the monthly fund and the dates of your stay in France.

- If you have an employment in parallel to the PhD, copy of the employment contract.

After the University has validated your documents, you will be contacted in order to pay the tuition fees. The amount is approximately 400€ per year.

For second-year and third-year students, the registration is exclusively carried out online[5].You will again have to pay the CVEC, fill up the various registration forms, and upload the required documents. These are:

- Summary of the registration with the Doctoral School (generated by ADUM once all the signatures are collected and the information validated)

- Certificate of the CVEC

- Copy of the employment contract

- Copy of the last payslip

- Copy of the civil responsibility (*"Responsabilite civile"*)

Once the registration has been accepted, you will receive instructions on how to activate your University online account. In your private area there will be a lot of information. For example, in the top right corner you will find a mail symbol that gives you access to the University email, whose syntax is: firstname.lastname@ univ-tlse3.fr. The most important part is the *"Inscription and Rentree"* section where you can download the student certificate and monitor the status of the registration. If you are a first year PhD student, in this section you can book an appointment to pick up your student card. To do so, you will need to show your student certificate.

5.1.3 Teaching at the University – DCCE contract

As a PhD student, you have the opportunity to apply for teaching duties at the University. If selected, you will typically be responsible for some practical laboratory training or lectures at an undergraduate level. This *usually* requires to be fluent in French. The call for applications typically opens in July, and the deadline is usually early September. Teaching can start as early as October. You should receive an email with instructions on how to apply over the summer.

5.2 Requirements of the Doctoral School

Along with your research project, the PhD involves compulsory training activities aiming at improving your educational development and scientific culture. In particular, you **must** attend seminars and course which, upon validation by the Doctoral School, are part of the minimum requirements to access the PhD thesis defense. This complementary education is spread over the whole duration of the PhD, and it is up to you to set your outline. All this information can also be found at the Doctoral School website[6] (both in French and in English).

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[5]https://www.univ-tlse3.fr/inscription-en-2e-et-3e-annee
[6]http://sdu2e.obs-mip.fr/

5.2.1 Seminars

You are required to attend at least **nine** *"Grand Seminaires"*. These are monthly (usually on Tuesday at 11am) seminars organized by the OMP and which focus on inter-disciplinary topics. On the OMP website[7], you will find a comprehensive list of all the planned seminars, so that you can decide well in advance which one to attend.

The seminars are either virtual or physical, and in both cases you will typically receive a reminder by email from Yves Meyerfield, in which details on date, time and modalities are provided. In the virtual case, you will receive from the Doctoral School a link to a doodle that you need to fill up with your information, whereas in the physical case there will be a paper form to sign in the seminar room. **It is very important to sign the forms**, because they represent your proof of attendance, without which the Doctoral School will not validate your presence.

If you prefer evening sessions instead, you could attend the *"Soiree Scientifiques"*. They are equivalent to the *"Grand Seminaires"* (speaker and topic are the same), but they are held at 8pm.

5.2.2 Training hours

There are two types of training you need to undertake: 'scientific' and 'professional'. You can find the entire list of courses on ADUM under the 'Training courses list' section[8], with their associated classification and description. Remember that the list is dynamic, i.e. it changes throughout the year based on availability; so, do not worry if you cannot find a specific course, because it might pop up later in the year. We recommend you check the list regularly.

You are required to attend 40 hours of scientific training and 40 hours of professional training. Overall, these 80 hours are referred to as complementary training.

Here are examples of **scientific** training:

- Summer, winter, or thematic schools (1 week = 20 hours)

- Follow-up of a teaching unit at the Master's degree level (20 hours of minimum course)

- Course or internship to learn a technology or scientific methodology (1 week = 20 hours)

Here are examples of **professional** training:

- *"Doctoriales"* in Midi-Pyrénées (Number of fixed hours = 30)

- Language courses (Number of fixed hours per module = 20)

- Outreach activities such as interventions in high schools, or participation in non-profit organizations. Many IRAP PhD students are implicated in *"Universciel"*[9]

The following **do not count**:

- Participation in a national or international conference or workshop

- Coaching trainee by the PhD student

- Internal training within their laboratories and related to thesis work

- Any other work directly related to the thesis work

Courses are held either in class or online. In the latter case, you have the possibility to attend courses offered by other French universities. For the Doctoral School validation, you have to register the course on ADUM as 'external': make sure to fill out the evaluation sheet and obtain the certificate of attendance at the end of the course. Note that the training must be at least four hours long. Examples of online courses are MOOCs: Massive Open Online Courses and they are listed at a dedicated website[10]. In general, if you

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[7]https://www.omp.eu/missions/diffusion_connaissance/grands-seminaires-omp/
[8]https://www.adum.fr/phd/formation/catalogue.pl
[9]http://universciel.info/
[10]https://www.fun-mooc.fr/

wish to follow a formation and are not sure whether it will grant you the necessary hours, ask the doctoral school[11].

If you have a DCCE (i.e., teaching) contract (see Section 5.1.3), you will have to attend specific pedagogical courses. You can find these modules in the *"Pratiques pédagogiques pour l'Université"* part in 'Training Modules Catalogue' on ADUM. When you click on the module, check that there is the "DCCE - DCE" keyword. The number of modules you are required to attend depends on how long you teach: four, six, or seven modules if you teach one, two, or three years, respectively. Furthermore, the combination of teaching and pedagogy training will grant you hours in the complementary training: if you teach for one, two or three years, you will earn 40, 60 and 80 hours, respectively.

Note that some exceptions exist on the rules expressed above:

- Students under CIFRE contracts are not required to complete the professional training.

- Students under cotutelle or international thesis co-direction agreements are required to undertake 30 hours of training in total (not 80 hours).

- Students with full time employment in parallel to their research are exempted from training.

5.2.3   Ethics and Integrity course

You are required to attend one course on 'Ethics and Scientific Integrity', which can be found on ADUM as well. This course is independent from the previous training requirements, i.e. it is additional. Because this course is compulsory for every scientific faculty, it has a very high level of attendance, hence finding a spot could be problematic. Often, second- and third-year PhD students are granted priority in the selection because they have less time in front of them before the thesis defense. The situation is even more complicated if you are an international student, because the number of English sessions is very limited. To increase your chances of attending this course, you should consider following it online as MOOC: "Scientific Integrity in Research Professions" (offered by the University of Bordeaux) or "Research Ethics" (offered by the University of Lyon).

5.2.4   PhD committee

Mandatory in France since 2016, the PhD committee (in French *"comité de suivi de thèse"*) is meant to follow the evolution of the PhD project and assess the advancements of both the PhD student. It makes recommendations to the Doctoral School and the PhD supervisor, and sees to avoid conflicts. The organization of the PhD committee is decided by the Doctoral School.

At SDU2E, the committee is usually a few members who include your PhD advisor and an external member with strong expertise in your PhD subject. The detailed composition requirements of the committee depends on your Laboratory. For this reason, one of them must be external to the laboratory. You will be asked to make a presentation on the advancement of your research project each year, after which the committee carries out an interview with the supervisor alone, followed by an interview with the PhD student alone. This meeting with the committee is a good place to raise concerns and issues on the advancement of the project, or conflicts with your supervisors.

5.2.5   SDU2E committee

The SDU2E committee meeting takes place half-way through the PhD and a few month before the defense. It is organized by the Doctoral School and attended by IRAP direction representatives. This committee is meant to follow the PhD student as well, but in a more informal way. You will be asked to prepare a brief presentation on your past, present and future PhD scientific projects, on your ongoing and accepted articles, and to specify which training courses have been completed. Keep in mind that, in order to access the PhD thesis defense, you need at least one accepted article. Once again, this committee is a way to make sure everything is going well during your PhD, for you and your projects. This committee is independent from the PhD advisors, and is therefore a good place to raise any problem or conflict you may have.

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[11]secretariat.sdu2e@obs-mip.fr

5.3   Expenses coverage

In Section 6.2, we describe the transportation system in Toulouse (Tisseo) and how to subscribe to it. If you have an employment contract with CNRS or the University, you are eligible for a partial (i.e. half) refund. What you have to do is send a couple of emails and prepare some documents in the following way:

- Send an email to Josette Garcia[12] stating that you would like to receive the reimbursement for travel expenses. She will send you back a form to fill out with information on your address, the type of subscription (monthly, yearly), and the means of transport you have to take in order to reach the destination (e.g. bus, metro, bus + metro). You also have to specify your CNRS agent number, which can be found on your CNRS employment contract.

- If the subscription is yearly and you decided to pay it in monthly installments, you need to download the timeline of all the planned payments (called *"échéancier'"*) from the Tisseo online system. Usually, you should receive a link directly from Tisseo that gives you access to this document in less than ten days after your subscription starts. If the subscription is yearly, but you decided to pay the entire amount in one go, then you do not need this document.

- Send back an email to Josette Garcia, attaching the form, the échéancier, the scanned Tisseo card, and the receipt of the subscription. It is very important that you do not throw the latter away when you subscribe!

At the end of this process, if you, say, decided for the yearly option (510€), your payslip will contain an extra 21.25€ each month (half of the monthly installment).

If you ride a bike and/or carpool to work at least 100 days per year, you may request a *"forfait mobilités durables"*. Please note that you cannot have both the *"forfait mobilités durables"* and the reimbursement of half your bus/metro subscription.

For CNRS agents, to request the *"forfait mobilités durables"*, visit https://agate.cnrs.fr, and follow *"mes demandes"* / *"Créer une demande"* / *"Paie"* / *"Bénéficier du forfait mobilités durables"*, click the hyperlink *"le formulaire Ariane"* in the text, and fill the form.

5.4   Prime d'activité

The *"Prime d'Activité"* is a tool from the French government to increase low salaries. Every three months, you declare your net income for the previous trimester in order to receive each month up to about 500€. For PhD students earning around 1400€ net per month, it will typically be on the order of 150€ (simulation on October 26th 2020, for a PhD student with no other income, no children, and no real estate assets). You can obtain an estimate of your *"prime"* with the online simulator[13]. All requests can be done online through the CAF website[14] and are in French. International citizens can ask for the *"prime"*, as long as they work in France. It may be more difficult for non-European citizen, but not necessarily impossible. Please ask for a French-speaking friend's help!

Alternatively, it is always possible to go to the CAF welcome desk, with proof of residency, employment contract and last payslips, and get help there. However, it is highly probable that the person at the welcome desk does not speak English, so either bring a friend, or your success will depend on luck.

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[12] josette.garcia@irap.omp.eu
[13] https://wwwd.caf.fr/wps/portal/caffr/simulateurpa/
[14] http://www.caf.fr/

Chapter 6

Living in Toulouse

Toulouse, also called the pink city because of the bricks that shape the buildings, is the 4th biggest city in France. Its location in the South of France, the significant student population living there and the presence of important space industries/laboratories such as Airbus, CNES, Thalès and Safran make this city a wonderful place to live during your PhD.

6.1 Where should I live in Toulouse ?

6.1.1 Prices in Toulouse

Toulouse is clearly less expensive than Paris or London, but still requires a bit of funds if one wants to live close to the city center. Figure 6.1 represents an approximate distribution of the prices in the city.

Prices depend on several parameters: location, surface, state of the apartment, etc. Table 6.1 summarizes some of the PhD students personal experiences, with some information about the address and the prices.

6.1.2 How long does it take to go to IRAP ?

Although the Tisseo application[1] can give a useful estimate of the journey time, it is interesting to have a "door-to-door" estimate from real experiences. The route to IRAP is described in Section 2.4. Below can be found approximate times for various locations:

6.1.3 Red light districts in Toulouse

Some districts in Toulouse are well known as red light districts: they are *"Le Grand Mirail (Reynerie-Bellefontaine-Faourette-Bagatelle-Bordelongue), Empalot, Les Izards, Bourbaki and Ginestous."* The main reason why these are considered as red light districts lies in the drug traffic and high rate of muggings. The attractive prices in the area (you can find a 80 m^2 for less than 700€ in Mirail for example) is due mostly to the fact that lots of people tend to leave these neighborhoods for more expensive but safer ones. The city center is safe in Toulouse, although some people have had problems while walking home alone during the darkest hours of the night, when all the bars are closed. This is especially true close to the train station districts, the *"Bayard"* street and the *"Arnaud Bernard"* neighborhood, where some muggings have also been noticed.

Although some people might have a positive experience living there, the authors would not recommend someone to walk in these districts at night. Toulouse is far from being the 1960's Chicago, but one has to keep in mind that this is still a big city, with its quota of dangerous neighborhoods.

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[1]https://www.tisseo.fr/nos-plus/appli-mobile-tisseo

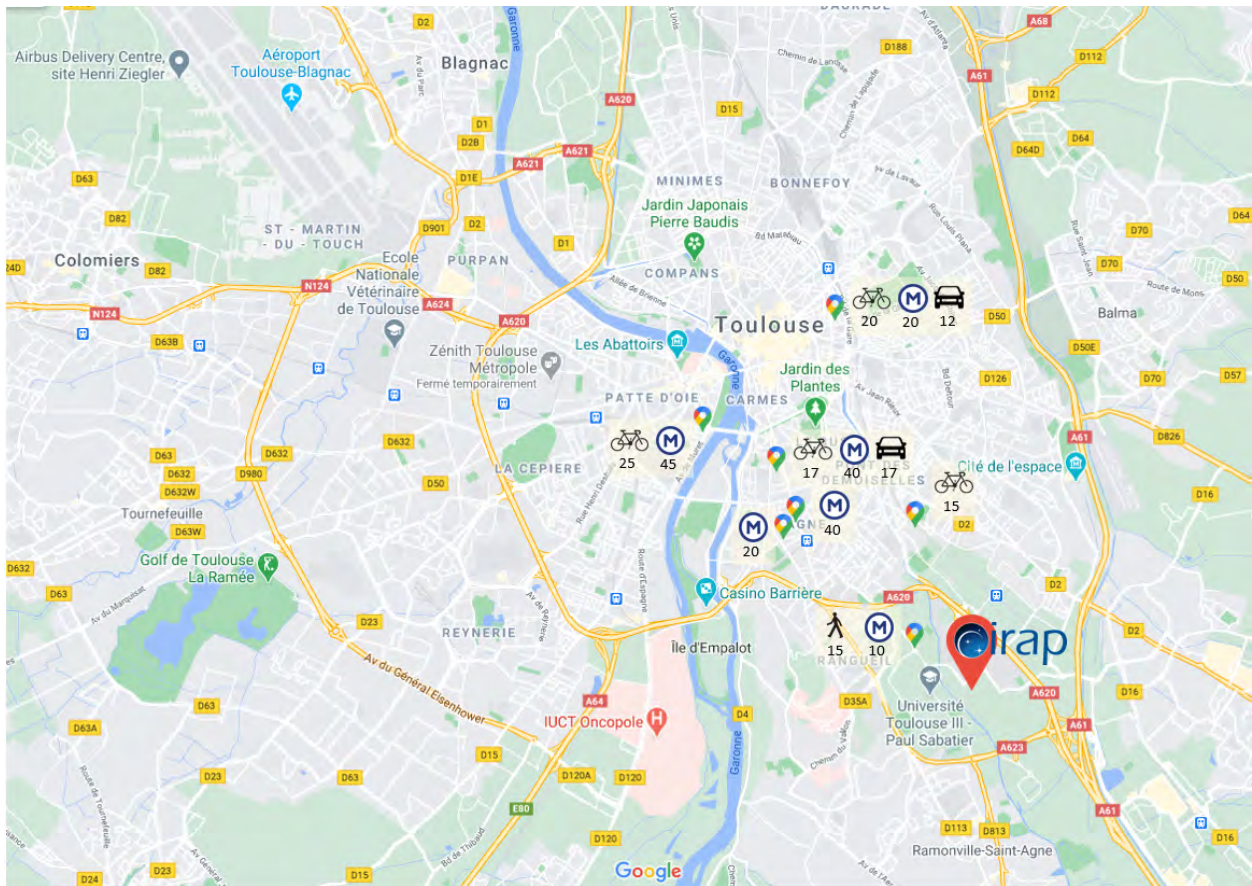Figure 6.1: Surface price map of an accommodation in Toulouse

Figure 6.2: Estimated transportation time based on the list provided.

Adress	Surface (m²) Furnished ? Shared ?	Price	IRAP by bike (min)	IRAP by Car (min)	IRAP by Metro/Bus/Tram (min)
50 Rue Achille Viadieu (St Michel Marcel Langer)	36 (not furnished)	440€ +40€ (water) +40-120€ (electricity)	17	17	40
Résidence Thalès (Faculté de pharmacie)	27 (furnished)	484€ all included	5		5-10
310 Avenue de Muret (Fer à Cheval)	36 (furnished) Shared	315€ +20€ (gas/electricity) +15€ (insurance)	25	25	40
20 avenue de l'URSS (Saint Agne)	67 (not furnished) Shared	400€ +54€ (gas) +34€ (electricity) +20€ (internet) +10€ (insurance)			40
20 Port Saint Sauveur	35 (furnished)	635€ +40-50€ (electricity)	20-25		20-25
10 rue St Thomas d'Aquin	54 (furnished) Shared	360€ +40€ (expenses)			20-25
50 rue Pierre Paul Riquet (Saint Aubin)	48 (furnished)	580€ +70€ (gas/electricity) +22€ (internet)	20	12	20
20 Avenue du Colonel Roche	25 (furnished)	400€ all included	2		
90 Avenue de Lespinet (Pont des demoiselles)	31 (not furnished)	400€ +70€ (water/gas/electricity)	15		

Table 6.1: List of accomodation examples from PhD students.

6.2   TISSEO, The transport system in Toulouse

6.2.1   The TISSEO for a PhD student

For PhD students that are below 25 years old (and 25 years old), the pass is strongly recommended as it only costs 102€/year for **unlimited** transportation. Please note that you can buy up to 2 years at once. We could recommend that you buy a monthly subscription (10€/month) until few days before your birthday, and then buy the two years directly. It will allow you to keep the student discount, as a 26 years old cannot buy the student discount **but** can still use it if it has been bought before. The standard price for someone over 25 years old (student or not) is 510€/year. Note that your employer will reimburse **at least** 50% of the price of the subscription (see Section 5.3).

If you have guests less than 26 years old, the pass is extremely advantageous (even for a week): the card itself costs 8€, and then you will pay 10 tickets for 6.10€ instead of 13.70€. The card can be edited in large agencies such as the one in *"Jean Jaurès"* or *"Arènes"* or *"Matabiau"*. They will take your picture, no need to bring one.

6.2.2   The TISSEO network

There are multiple ways to move in Toulouse: Metro, Tramway, Bus and Bikes. They can all be accessed with the holy grail, the TISSEO pass. In Figure 6.3 can be found a map of the metro and tram stations.

The metro and tramway lines are not working 24/7. The first metro departure from the terminus is at 5:15am. The last departure depends on the day:

- From Sunday to Thursday, buses stop at 9:30pm, tramway at 0:30am and the metro works until midnight.

- On Friday and Saturday, the hours are a bit extended. Tramways stop at 1am while metros stop at 3am.

You can find more information about the hours on the Tisseo Website. [2] Furthermore, Tisseo developed an app which determines the best (fastest) itinerary between two locations and suggests what transportation to use.

6.2.3   VélôToulouse

Moving around Toulouse by bike can be nice (the whole *"Canal du Midi"* is a bicycle lane), but keep in mind that this is neither Netherlands nor Sweden: some areas will only have bicycle lines on the same road as cars, if dedicated lines for bikes at all. *"VélôToulouse"* [3] is a great way to travel across Toulouse by bike, without being afraid of getting your bike stolen (which unfortunately happens a lot).

The standard price is 20€ a year, while with the student discount is only 10€. The principle is simple: there are bike stations across the city where you can directly pickup the *"VélôToulouse"* thanks to your *"Tisséo"* card (or student card). After using the bike, you need to return it at any bike station in the city. Problematic situations occur when the station at which you want to drop the bike is full, or the pick-up station is empty. However, the application *"VélôToulouse*[4]*"* will indicate in real time the state of the stations.

The conditions to use your *"VélôToulouse"* subscription are the following:

- You cannot take more than one bike at a time

- You can use the bike for free for up to 30 minutes. After that, you will pay 0.5€ per half hour. If you want to travel over a long distance, the trick is to put back the bike and take it again.

- You can take as many bikes as you want during the year.

If you consider coming to IRAP by bike, the closest **VélôToulouse** stations are at the **LAAS** and **CNES-IAS** bus stations.

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[2] https://www.tisseo.fr/se-deplacer/horaires
[3] http://www.velo.toulouse.fr/Abonnements-et-Tickets/Tarifs/Consultez-les-tarifs
[4] https://play.google.com/store/apps/details?id=com.michgauz.velotoulouse.view&hl=fr
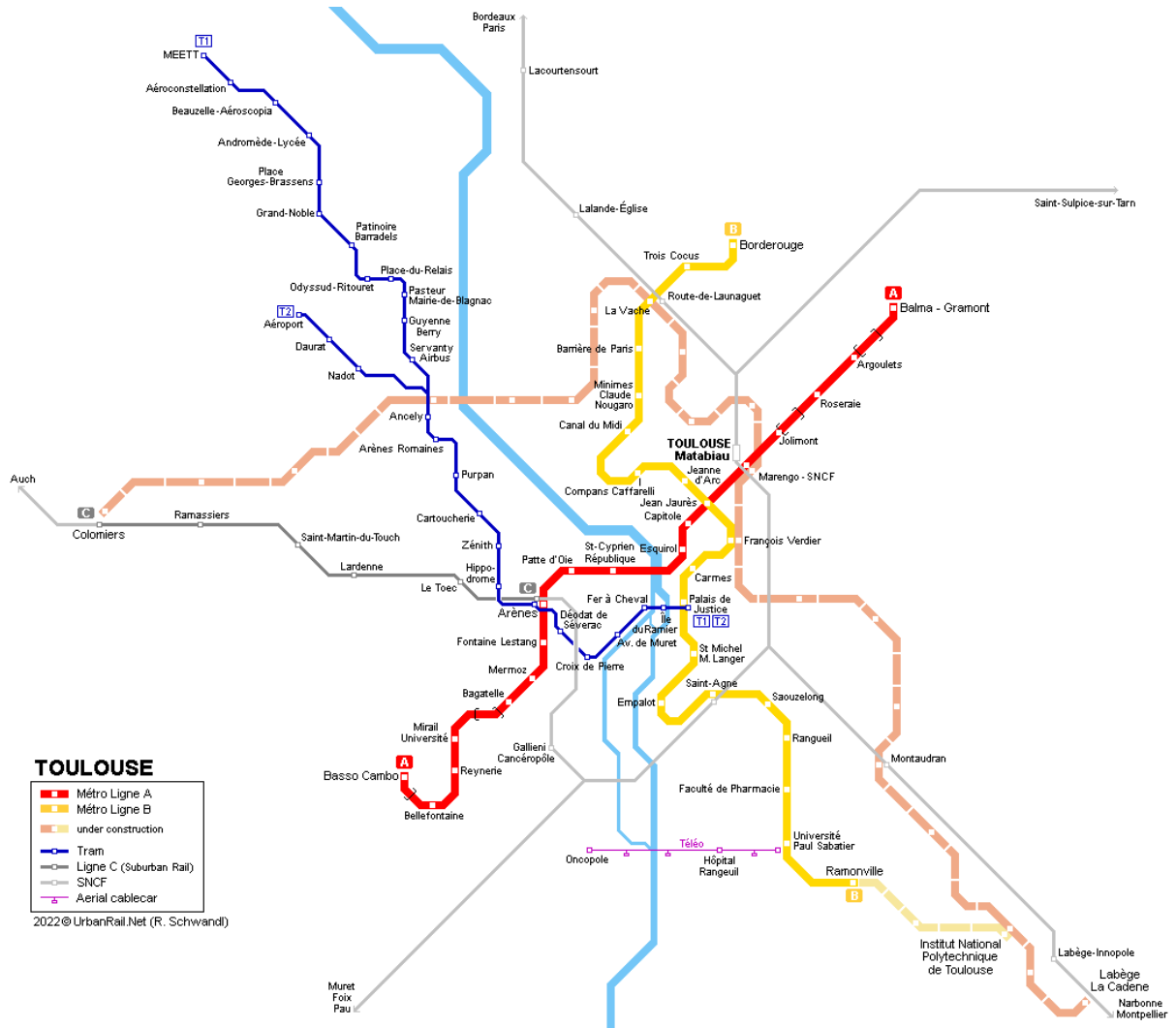
Figure 6.3: Toulouse network, including the tramway lines T1 and T2, the metro lines A, B and future line C, the cable car *"Téléo"*, and the *"Intercité"* and *"TER"* lines.

Chapter 7

Living in France

In this chapter, we describe several aspects that you will encounter when moving to France. This to provide practical information in order for you to have a clear view on how banks, healthcare and insurance work. Furthermore, it could help you plan your first steps in France, even before your arrival. For this reason, the content of this chapter is mainly addressed to international students, but it also deals with topics in which French students might be interested.

7.1 Renting an apartment, basics

This section provides general information on how to rent an apartment in France. For recommendations on where to live in Toulouse, refer to section 6.1.

7.1.1 Basics of the French laws

The French laws are very strict when it comes to rental agreements. These are designed to protect you from abusive landlords, and vice-versa. Here, we list few basic rules in a simplified version; more information can be found on the official public website *"service-publique.fr"*[1] (in French).

There are two main types of rental agreements in France depending on whether the place is furnished or not. The two types of contracts have common grounds, with slightly varying details.

Common rules

A rental agreement is signed by a legal tenant and the landlord. The landlord (or a housing agency) will typically ask about your revenue, assets, and/or the revenue and assets of the guarantor. The guarantor is a third party which agrees to fulfill tenant obligations in case the latter were to fail to meet them. In other words, the guarantor will be asked to pay your rent if you were not to pay it yourself. The guarantor will typically be a parent or a relative. Almost every landlord will require a guarantor with a monthly income at least three times the rent, or serious assets. If you do not have a guarantor, the government can become yours. See Section 7.1.2 for more details.

Once the landlord accepts you as tenant, they will usually ask for a security deposit. Please bear in mind that **legally**, the landlord **cannot** force you to pay the security deposit **before** the rental agreement is signed. However, a lot of agencies and landlords abuse of their positions, asking for the deposit before the signature of the contract. While this has become common practice (many agencies will tell you this is to "book" the apartment), you have no obligation to do so. However, the landlord could then turn to other applicants who agree to provide the security deposit early.

There are two steps to rent an apartment, both can be performed at the same time. First, you and the landlord have to sign multiple copies of the rental agreement. You **must** keep one of the signed copies for yourself (in case of disputes).

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[1] https://www.service-public.fr/

Second, you have to assess the state of the apartment with the landlord or a third party (a professional). Basically, you and the landlord have to agree on the state of the apartment and sign a specific document. This will be extremely important to handle eventual disputes at the end of the contract. Agencies will typically try to underestimate the already existing imperfections, so you should strongly insist on writing down any apparent damages you observe. Once the document is signed, you will have ten days to communicate problems that have been missed (sockets not working, broken sink, etc.), and up to one month if related to the heating system.

Once the documentation is signed, the landlord has no right to enter in the apartment without your express consent: the place is yours. The landlord can break the rental agreement **only** if they desire to sell the property, or live in it themselves. You can break the rental agreement for any reason, as a long as you give prior notice to the landlord at least one to three months before your departure, depending on your contract.

Furnished apartments

If the apartment is furnished, the landlord must provide the number of items explicitly as required by French law. The list can be found online[2].

The contract for a furnished apartment is valid for at least a year (or nine months for students). The security deposit must not exceed two months worth of rent. To break your contract, you must give prior notice at least one month before your leave.

Non-furnished apartments

If the apartment is not furnished, the landlord has no obligation to provide any item (not even cooking plates). However the apartment must be in habitable conditions according to the French laws.

The contract for non-furnished apartment is valid for at least three years. The security deposit cannot exceed one month worth of rent. To break your contract, you must give prior notice at least three months before your leave (or one month in certain cities such as Toulouse).

Shared apartments

If you choose to live in a flat-share, the contracts can be slightly different. Two possibilities exist to rent a room: an independent rental agreement, or a "solidary" rental agreement. If you have an independent rental agreement, you can refer to the previous cases. If you choose the "solidary" contract, then you will become guarantor for your flatmates. If one of the tenant does not pay their rent, the others can be asked to pay their share. Moreover, if you are the first to leave the apartment, you remain guarantor for the six months following your departure, or until another tenant takes your place. We can only advice you to sign such contract with flatmates you truly trust.

7.1.2   VISALE

As we explained in Section 7.1.1, you need a guarantor when you want to rent a studio or a room. For French students, the role of the guarantor is often played by their parents, who are both paid and resident in France.

If this is not your case, you can use the VISALE warranty scheme. With this, the government itself becomes your guarantor and ensures that the owner receives the rent for the whole duration of the housing contract. The request for a VISALE **is free** and can be done online [3]. After creating an account, you will have to follow three guided steps that mainly require you to provide personal and professional information. You will have to give an estimate of your income, because the amount of rent that can be covered by the VISALE depends on it. When the documents and the information are certified, you will receive a confirmation email, and you will be able to download the VISALE document.

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[2]https://www.service-public.fr/particuliers/vosdroits/F1165
[3]https://www.visale.fr/

Be aware that the VISALE is not compulsory. In some cases, the owners will not require one. However, obtaining one will drastically increase the chances of finding an accommodation, hence it is highly recommended.

7.1.3 Water/Gas/Electricity

In most of the rented flats, cold water is included in the rent. The landlord may ask for adjustment on the estimated fees if your water consumption exceeds the provisional monthly fees (*"charges"*) agreed upon in your contract.

The tenant is responsible for opening a gas and electricity contract with the provider of its choice. These expenses are **not** taken into account in the rent, unless the heating system is shared between flats. The main use for gas and electricity is heating water and the whole apartment. Most of the apartments in France are now equipped with a Linky meter, which monitors your electricity consumption in real time and allows to pay the exact electricity you are using.

The water boiler and your heating system will typically be responsible for the largest portion of your electricity/gas bill. If you have a gas heater, you are responsible for its yearly maintenance (100€).

Toulouse has hot summers and pretty warm winters. You should be careful about the thermal insulation of the apartment, if you do not want any bad surprises at the end of the month. This includes windows, walls, and the location of the apartment relatively to the building.

Last but not least, there are two things to consider when you chose your electricity/gas provider: the price of the electricity/gas, and the price of the subscription.

7.1.4 Which website should I use ?

There are several ways to find an apartment in Toulouse. The first one is of course to use your personal network, including your first contacts at the laboratory. In France, you can find an apartment with a real estate agency or directly make a deal with the owner. Be aware that most of the agencies will charge you (~ 1 month of rent) for the service. Multiple websites can help you find a deal, such as:

- *Le Bon Coin*[4]. Among the most famous website/application in France if you want to buy second hand products, ranging from a bike to a computer , you will also find apartments for rent. Our advise is to setup a notification to be updated on new posts.

- *Se Loger*[5]. This website/application is really practical, mostly thanks to the map they have implemented where you can see both the location and the prices of the apartments. Many agencies use this website. You should also be careful about the localization given on the website, which is sometimes erroneous.

You should always be careful while using these applications. Some people may try to extort you money. Do not pay anything before you have actually seen the apartment, and try to get some guarantees (copy of ID, contract, ...) when possible.

7.2 Bank accounts

Before signing the employment contract, the institute administration will want to know where to transfer your salary. Therefore, you **must** open a French bank account. There are two main options: an online bank, or a physical one. There are no particular advantages or disadvantages between the two, and the choice is completely up to your taste and what you are used to. In both cases, you will have to open the account **once you have found accommodation in France**.

The online case is simpler: you choose the bank you prefer, prepare/scan the necessary documentation and follow the required steps. Some websites [6] compare the best offers among online banks, and is usually up to date.

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[4]https://www.leboncoin.fr/

[5]https://www.seloger.com/

[6]https://comparatif.choisir.com/comptecourant/2-1/?tagid=belslgoebel&gclid=Cj0KCQiAjfvwBRCkARIsAIqSWlO4LMJaIydf3Gpa368NQEsjPB bONKX22heb_bwkVot3ZivzskcIaAuFoEALw_wcB

Physical banks involves human interaction, which may turn out to be a little more tedious if you are not fluent in French. There are several banks scattered all over Toulouse such as: BNP Paribas, Credit Agricole, Banque Popolaire Occitane, and HSBC. A quick google search will pop up which is closest to your location. The basic documentation that these banks require can be classified in three categories:

- Identity: national identity card or passport and residence permit if relevant.

- Address: proof of residence, which needs to be less than three months old. It can be your housing contract if you just moved in, or bill (electricity, gas, water, etc.) explicitly stating your name and your address. This is the main reason why it is very complicated to open a bank account from abroad.

- Economical situation: student certificate or employment contract. This might be a tricky point, because you are officially a doctoral student (and therefore you have access to the certificate) when the registration to the University is over. But to register to the University you need the bank account, so you enter a loop. A safe and effective way to get out of it is to ask your supervisor to write (and sign!) a very brief letter in which it is stated that you are a doctoral student along with the starting date of the PhD (better if it also says the approximate amount of your salary).

After these documents are prepared, the banks will generally ask you to sign a form on your data protection, the conditions of the credit card, and the actual contract. They might ask you to describe the context of your stay in France (i.e. why, for how long, etc.), but no worries, because their aim is to understand for how long the account is going to be open. Also, they will probably suggest you to transfer some initial amount of money on the account, so that the counter is not exactly zero. When all the documents are handled, you only need to wait the bank to effectively open your account, which takes at least a week.

Once the account is open, you will receive (or be able to download) the **RIB** (*"Releve d'Identite Bancaire"*). This document is extremely important because it contains all the bank coordinates: account number, IBAN code, SWIFT code, etc.

7.3   Cellphone providers

When you fill up a form or create an online account, it is often required to provide a phone number. Having an international number narrows down the possibility for these people to contact you, so it is highly recommended to have a French one. In particular, the bank might use your French phone number to send you security codes which, in turn, are needed to access the online banking or making substantial money transfers (such as the University tuition fees).

Several cellphone options exist in France, which can be divided in three main categories:

- Prepaid plans: prepaid packages are based on the pay-as-you-go concept, i.e. you pay what you consume. The rates for calls, sms and data are more expensive, but it is a very quick solution. You can order a prepaid sim card online, choosing the amount of money in it, or you can find one in the supermarkets (like Carrefour) with specific amounts of recharges. Then, you just have to insert the card in the phone for it to start working.

- Contract with commitment: you pay monthly for a specified amount of data, sms and phone calls, and you commit to this contract for a period of time (typically one or two years). Note that in France, even if you are committed, you could end the contract early and pay a fee that is determined by the *"loi chatel"* (a law that protects the consumer).

- Contract with no commitment: you pay monthly for a specified amount of data, sms and phone calls, but **you do not commit** to this contract. Practically, this allows you to change providers at any time, with no associated cost, or with fees that are independent to the age of your contract. We can safely recommend this option over committed contracts for our international friends.

Some of the most popular providers have divided their marketing in two subgroups: the traditional one and the *lowcost* version. These include Orange (and Sosh), SFR (and RED), Bouygues Telecom (and B&You), Free and Lebara. This list is **not** exhaustive. The typical price for unlimited phone calls and sms in France, access to dozens of Gb of data, is around 20€ per month.

A word of caution: the differences between contracts are not always obvious. In particular, some contracts may not contain the same policies regarding international phone calls. For example, some of them offer free outgoing phone calls to any country of the European Union, but only if you are yourself in France. Note that the detailed wording in the contracts can lead to confusion: "free calls from Europe" is not the same as "free calls to Europe". If this is something you need to look for in details, please to ask a French native speaker to help you with translations.

7.4 Insurance

In France, it is **mandatory** to have a *"Responsabilité civile"* insurance, which covers damages you could cause to a third party in everyday life. Very often, companies will offer packages including the *"responsabilité civile"* in the housing insurance.

Indeed, the apartment you live in **must** be insured to cover expenses in case of fire or water accidents, for instance. The cost depends on several parameters such as the value of the objects inside your flat or the flat surface, but it is typically 10€ per month. Note that as a PhD student, you are eligible to student discounts. There are several insurance companies such as MAAF [7], Macif [8], and MAE [9].

You can compare the prices and offers on websites such as `lesfurets.com` or `lelynx.fr`. Banks can also provide housing insurance, but it is usually a bit more expensive. Note that you must provide an attestation of insurance to the landlord the day of the rental agreement signature.

7.5 Healthcare

7.5.1 Mandatory regime

The French universal healthcare system (*"sécurité sociale"*) will cover part of your medical expenses. To prove your affiliation to the *"sécurité sociale"*, you will be issued a green card, called *"Carte Vitale"*. Doctors and pharmacists will ask for your *"Carte Vitale"* so that you can obtain partial reimbursement for expenses. As an example, if you go see a doctor *"conventioné secteur 1"* (see Sec. 7.5.3 for explanations), you will be reimbursed 70% of the consultation price, excluding exceptional acts that may be covered differently. Please note that **in order to be reimbursed** when consulting a specialist, you must be addressed to a specialist by your referee. Exceptions are, for instance, gynecologists and ophthalmologists, who you can consult without being addressed by your referee.

To obtain your *"Carte Vitale"*, you can ask Josette Garcia for help. They typically advice to contact one of the companies handling the reimbursement for the *"sécurité sociale"*, such as MGEN.

7.5.2 Complementary health insurance

Many companies offer complementary insurances (called *"mutuelles"*) to cover what the universal health care does not cover. This costs around 30 € per month depending on your situation and the level of insurance you choose. For example, some plans cover glasses expenses, others do not.

7.5.3 Two sectors

Doctors are affiliated to either *"secteur 1"* or *"secteur 2"*. The consultation price for a doctor in *"secteur 1"* is fixed, while a doctor in *"secteur 2"* chooses the price freely.

Regardless of who you consult, the mandatory regime of the *"sécurité sociale"* will only reimburse the amount computed on *"secteur 1"* grid, that is, the mandatory regime will not reimburse more if you see a doctor in *"secteur 2"*.

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[7]https://www.maaf.fr/fr/assurance-habitation
[8]https://www.macif.fr/assurance/particuliers/assurance-habitation-et-vie-quotidienne/residence-principale
[9]https://www.mae.fr/contrats/assurance-habitation

7.5.4   How to find a medical doctor?

Unless you know someone already, there is a practical website where you can find a doctor: **doctolib**[10]. On this website, you can browse a database of practitioners and specialists based on keys such as: medical area, medical establishment, location, etc. This way, you can select the doctor that is closest to you, and that might speak English as well.

Another benefit is that you can make appointments (*"rendez-vous"*) directly online. There are mainly two types: a virtual visit (*"téléconsultation"*) or a physical one. Naturally, the choice depends on the entity of your problem and on the waiting time.

You should choose a general practitioner as your referee, who will eventually redirect you to specialists. **When you see them for the first time**, you can ask them to become your referee. In practice, you will both sign a document that associates the patient to the doctor, and that subsequently needs to be sent to your insurance. However, keep in mind that this patient-doctor combination can only be performed if you have a Social Security number (see Section 7.5).

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[10]https://www.doctolib.fr/

Appendix A

TITAN & SLURM − A quick start guide

A.1   Mini–introduction

TITAN is the IRAP computer cluster. It will allow you to run parallel computation of your codes, and will help you work faster. The cluster is heavily used, resources are limited, and everything is handled by a manager called SLURM. A proper use of SLURM will help you 1- optimize your codes and make the most of the cluster 2- avoid blocking other users who also want to use TITAN. This small guide gives the very basic ideas of the computer cluster, SLURM, examples of use, and example scripts.

How do I get access to TITAN?

You should ask access to TITAN either through the OMP intranet, or email supportinfo@irap.omp.eu.

What is the IRAP gateway?

The gateway is a small computer that allows you to connect to IRAP servers from outside the IRAP network. If you are at home, the gateway is your only way to connect to TITAN. To request access to the gateway, go to the OMP intranet or ask for help by emailing supportinfo@irap.omp.eu

How do we connect to the servers?

The connection to TITAN and the gateway are performed through the Secured SHELL (SSH) protocol.

A.2   Magic tricks with SSH

If you are not familiar with SSH, we provide here the basic commands you will need. Please note that basic knowledge of bash is assumed and we will not discuss the basic unix commands (cd, ls, rm, pwd, etc).

Three basic commands

Most user will only require basic commands allowing them to 1- connect through the terminal to TITAN, 2- copy files from and to TITAN.
   To connect to TITAN from within IRAP, open a terminal window and type 'ssh username@titan.irap.omp.eu:', and enter your password when prompted. This command will get you in your user directory, and you are good to go. To copy files from or to TITAN, you can use the `scp` command, which is analog in its use to the `cp` command. Example:

```
scp username@titan.irap.omp.eu:distantfolder/file.txt anotherfolder/file.txt
```

will copy the file located in the *distantfolder* folder located on TITAN, to the *anotherfolder* folder located on your local computer. Again, enter password when prompted.

Alternatively, you can use the `rsync` command to copy files. This can be a much faster options in case a large number of files must be copied, and/or if you wish to update changes to a folder. Example:

```
rsync -av --update A/ username@titan.irap.omp.eu:A/
```

will update the content of folder A on TITAN computer by copying missing or changed files from A located on your personal computer. the `--update` option allows to be even faster by ignoring files on TITAN that would be more recent than files on you local computer. Beware than in this case, such files would not be overwritten, and you can remove the command if you want to make sure overwrite them.

How to never use your password again

We highly recommend you use the authentification keys to connect to TITAN, so that you can connect from your professional computer without having to enter your password everytime. To create a pair of keys, on your local computer enter the command

```
ssh-keygen -t rsa
```

then copy the pulblic key with the command

```
ssh-copy-id -i ~/.ssh/id_rsa.pub username@titan.irap.omp.eu
```

You should then be able to connect to TITAN without entering your password. The same thing can be done to connect to the gateway. Once connected to the gateway, repeat the process to connect from the gateway to TITAN, and you should be able to connect from everywhere without entering your password.

ProxyJump or how to have an excuse to stay home

If you need to work from outside the laboratory, you will have to connect to the gateway before connecting to TITAN. This means that to copy a file to TITAN, you will need to first copy it to the gateway, and then to TITAN, making easy steps tedious. Luckily, you do not have to live that way, and a little magic will allow you do everything just the way you would from within the laboratory. Open the $\sim$`./ssh/config` file located in your home directory, and type something like the following:

```
Host titan
HostName titan.irap.omp.eu
User yourusername

Host gwtitan
ProxyJump yourusername@gw.irap.omp.eu
HostName titan.irap.omp.eu
User yourusername
```

With this, from now on, you will be able to replace **yourusename@titan.irap.omp.eu** by `titan`, and connect by typing `ssh titan` from within the laboratory. From outside the laboratory, simply type `ssh gwtitan` and you will be connected to TITAN *through* the gateway. A simple `scp file.txt gwtitan:folder/file.txt` will copy file.txt from your computer to TITAN, from the confort of your couch.

A.3   SLURM

What is SLURM?

SLURM is the manager that decides when your code will run, what node you will be using, for how long, and who will go first. You can think of it as an air traffic controller, handling all the departure requests from everyone at IRAP.

How do I submit things to SLURM?

You have multiple ways of submitting a job on TITAN, one of them is to use a BATCH script. They are bash scripts containing flags providing SLURM with information regarding your request. Let us look at an example for a very simple script[1]:

```
#!/bin/bash
#SBATCH -J MyFirstJobName
#SBATCH --ntasks 4
#SBATCH --cpus-per-task=10
#SBATCH --time=04:00:00
#SBATCH --mail-user=your.email@irap.omp.eu
#SBATCH --mail-type=END
#SBATCH -e slurm-%j.err
#SBATCH -o slurm-%j.out
#SBATCH --partition=irap,ps2e

export OMP_NUM_THREADS=1

for param in {1..4}
    do
        python a_python_script.py $vmac > output_param_{vmac} &
    done
wait
```

In this example, we request resources for a job that we name `MyFirstJob`. We request we specify to SLURM that we will be running 4 tasks (for example, 4 independent scripts), and that we want 10 cpus for each individual task. We are therefore requiring 40 cpus. We additionally tell SLURM that our job will not take more than 4 hours; if it does, SLURM will kill the job. Putting a limit can be useful to 1- prevent a code from running infinitely blocking other users while stuck in a loop 2- obtain priority if we need to run a short job. The above script also tells SLURM that we want to recieve an email notification when the job is finished. The `-e` and `-o` flags define where the error and output files will be stored. Finally the `--partition` flag allows to choose partitions of the cluster (i.e. a subset of nodes where we want to run our jobs). Please note that some nodes belong to certain groups, for example *spirou* or *ps2e* are primarily destined to people within these groups. Their use by other members is always tolerated for **small** jobs.

A few useful commands

- `sinfo` – This command lists the status of all nodes and partitions, and gives you information on the number of cores per nodes, etc.

- `squeue` – Returns a list of the jobs submitted by all users. This way you can see which nodes are being used, who is using them, for how long, etc. Use the [`-u yourusername`] flag to see only your jobs.

- `sbatch` – Used to submit a BATCH script.

- `scancel` – Cancels jobs. You can either specify a job id, or cancel all your jobs with the [`-u`] flag.

A.4   Mini–conclusion

This introductory guide is far from being exhaustive. If you have questions of issues, please feel free to ask a fellow PhD student, your current PhD representatives[2], or to consult the numerous guides on the internet.

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[1]Copying code from this document to an editor may sometimes lead to formatting errors. If you encounter problems while running the code, please try re-typing the example.

[2]Jonathan Oers: jonathan.oers@irap.omp.eu, and Alexei Molin: alexei.molin@irap.omp.eu

Appendix B

Plans
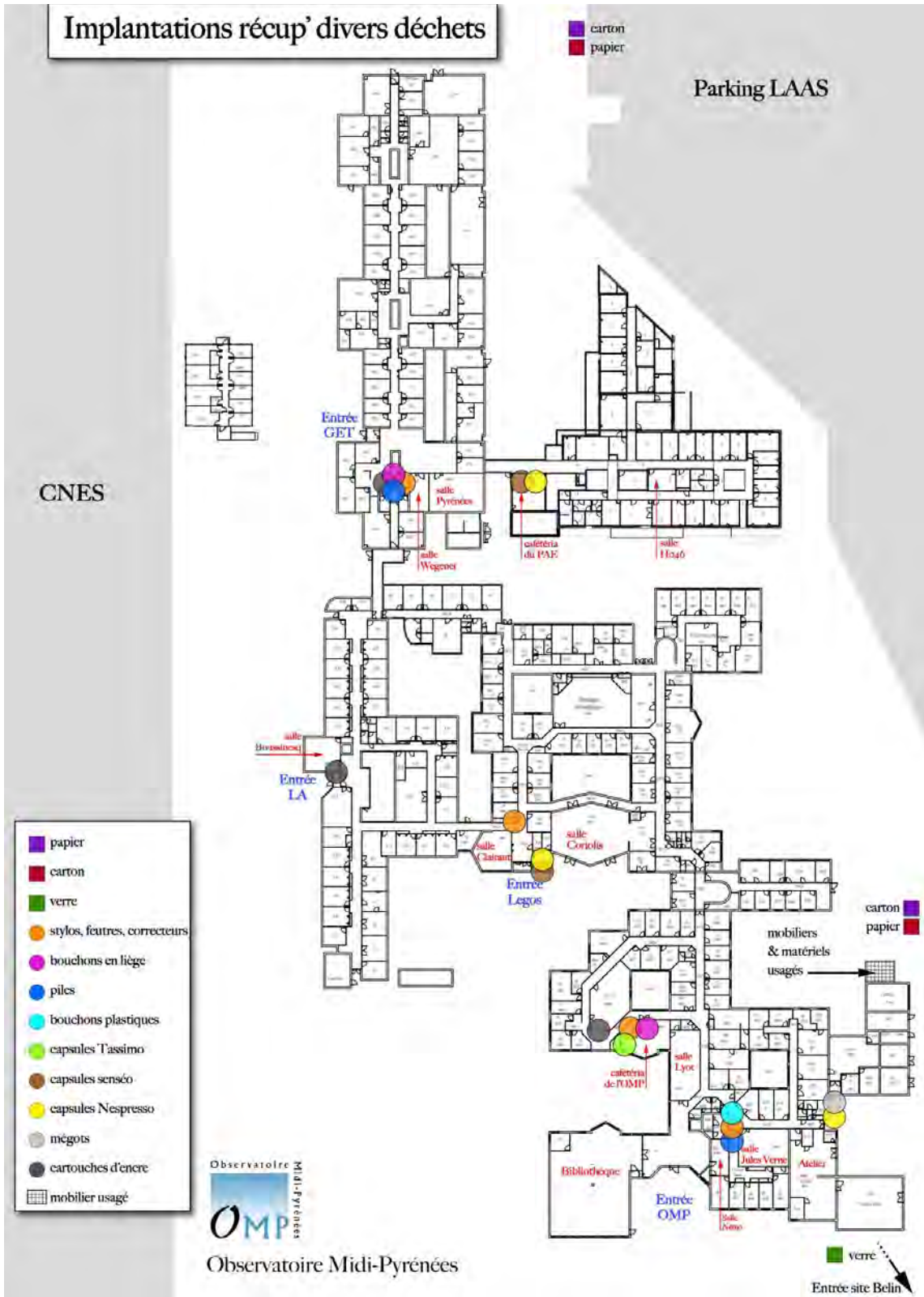
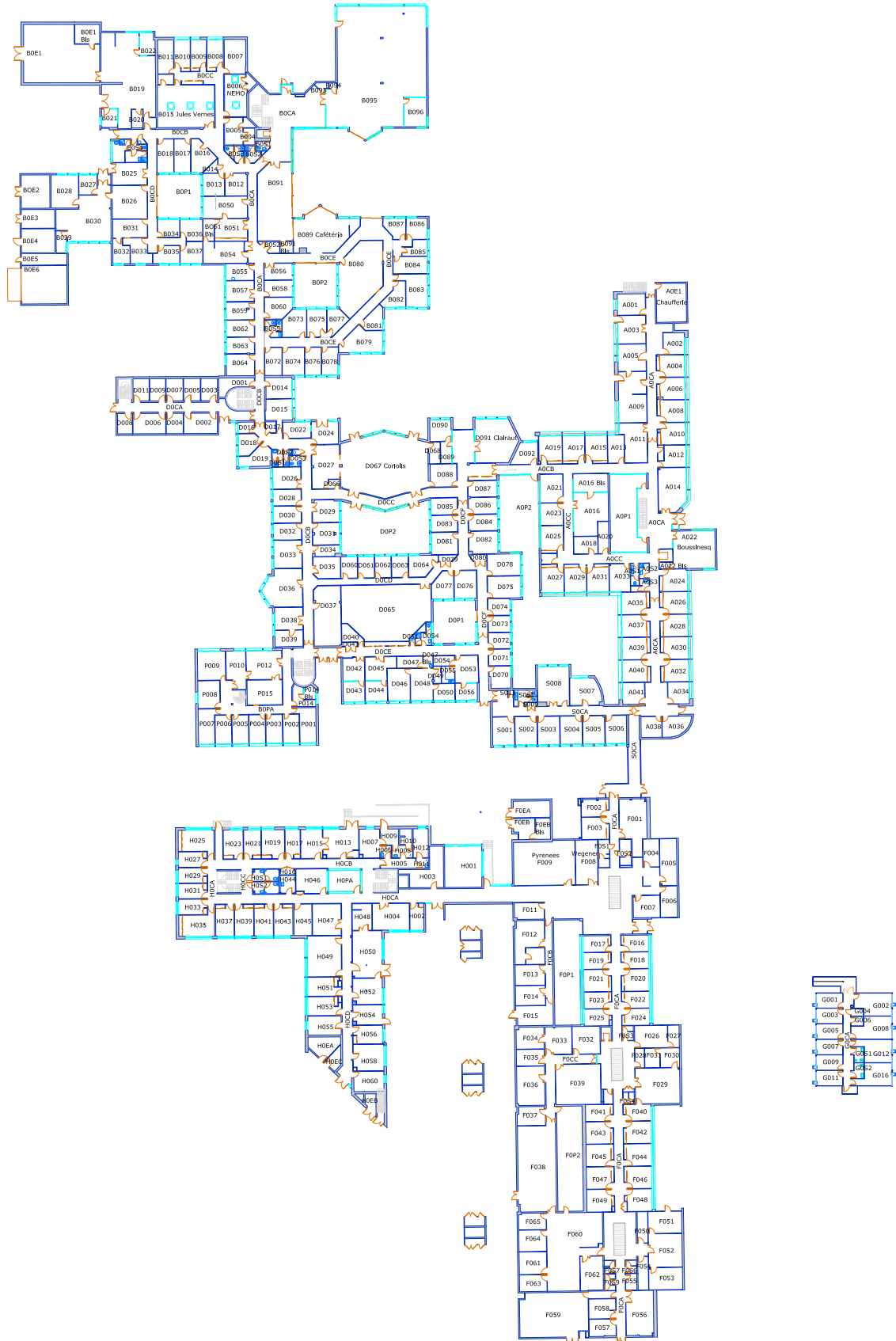Figure B.1: Ground floor map of Belin with recycling points.

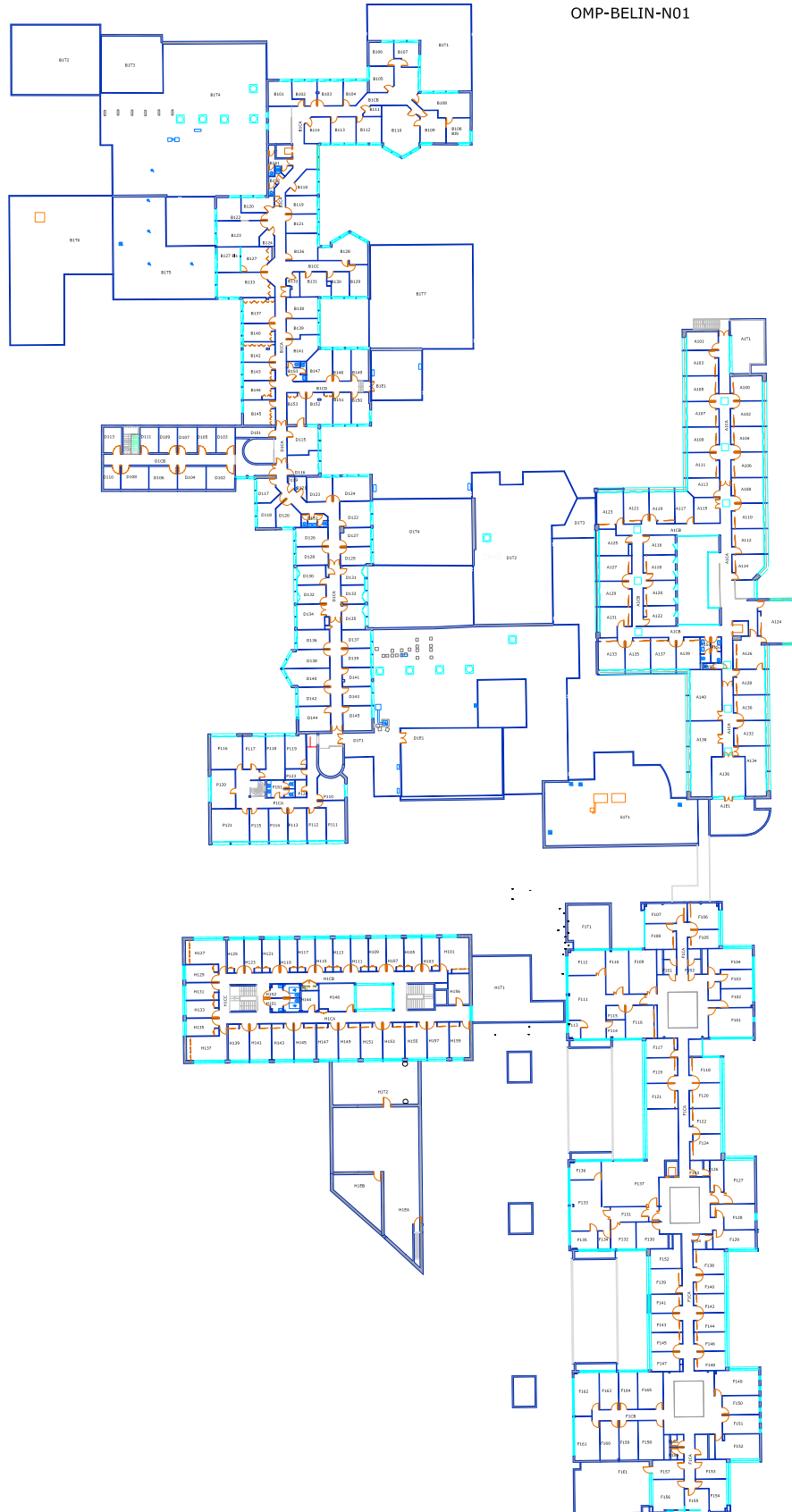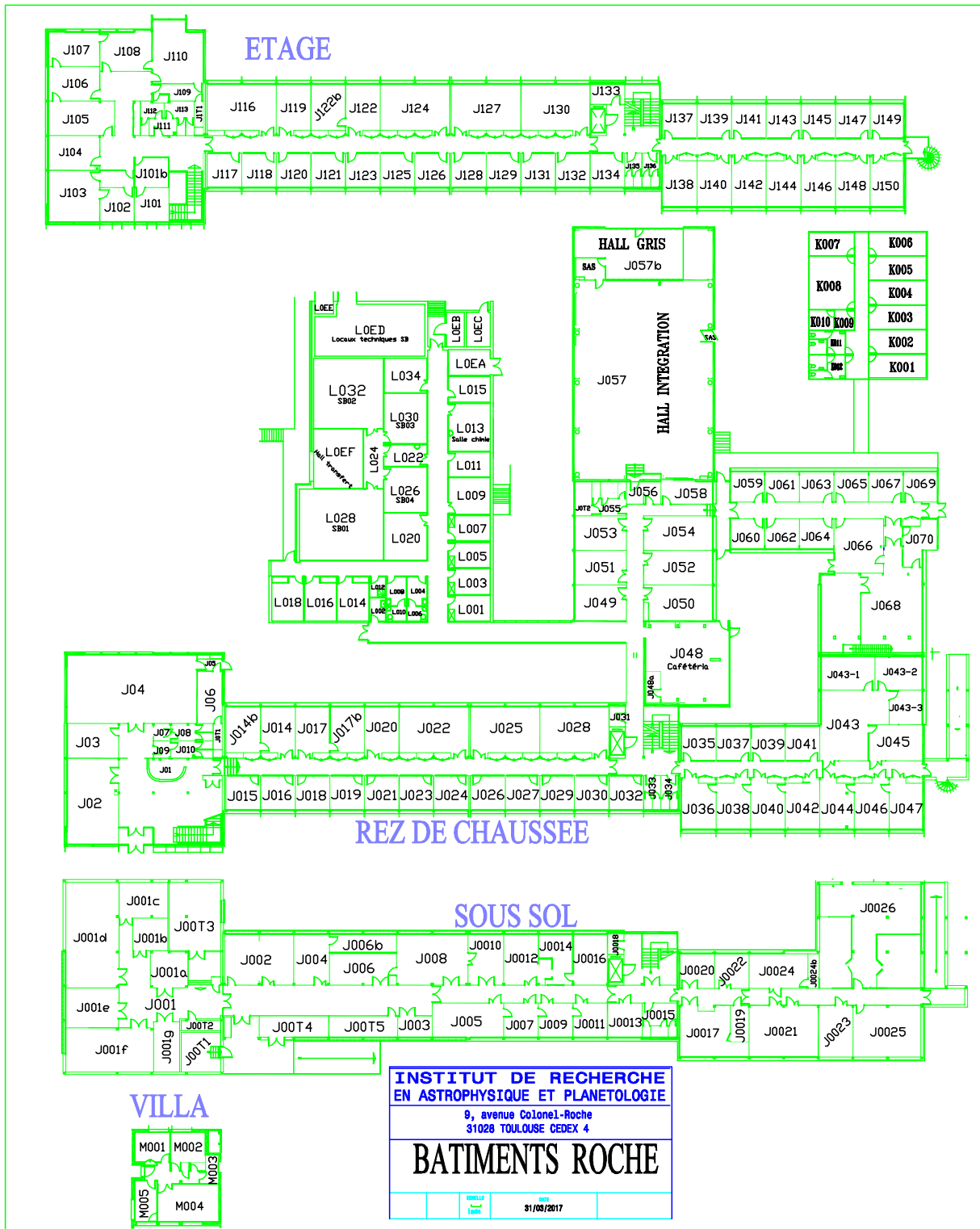Figure B.2: Map of ground floor of the Belin site.

Figure B.3: Map of first floor of the Belin site.

Figure B.4: Map of the Roche site.