

NEWS

LETTER

NOVEMBER 2021 | QUARTERLY

TLMOTO

 **TÉCNICO LISBOA**

CADERNETA

Carolina Rodrigues is a fifth-year student in Biological Engineering. She joined the team in her second year, in the Marketing area and, currently, as a Business Manager, her role is to interconnect the team's Management and Marketing areas.



HOW DID YOU FIND OUT ABOUT TLMOTO?

I found out about TLMoto when, in my second year, I saw a friend of mine at Semana Aeroespacial talking to Gonçalo (the current team leader and my friend too) at a stand. I was intrigued because I didn't know they knew each other, so I went to talk to them and they introduced me to the project. At the time, I was a member of my course's Union, but I wanted something more and I found Marketing and Management quite interesting. They were both things I had never learned before, but I thought I had the right profile. After thinking about it, I decided to join!

AND THEN YOU BECAME A BUSINESS MANAGER?

I started my journey in the team as a Marketing recruit; at that time, given the size of the team, there was no need for area leaders. With the growth in the number of people, this role became justifiable and then I became the Marketing leader. As there weren't many people in the Management areas yet, I ended up having a lot of contact not only with Marketing, but also with Management. So when it came time to renew the board members, the current team leader met with the old board and, based on the feedback they had and my experience in both areas, they decided to place me in this role.

WAS IT DIFFICULT TO RECONCILE STUDYING AND TLMOTO?

It wasn't as difficult as it could have been, because it was all gradual. Due to the recruitment, the tasks became more and more complex and demanding in terms of time, however, as everything was quite gradual, I ended up being able to adapt. What also helped, was liking what I was doing and wanting to have my tasks always organized.

CADERNETA

WHAT WAS YOUR MOTIVATION TO STAY IN THE TEAM?

There were two big factors. One of them were my teammates. It was a good experience to meet people from different places and degrees, which led to a great team dynamic helping a lot in my motivation. The other factor was the fact that I felt like I was really making a difference; when we are in college we are almost just a number, but in teams like this we feel the satisfaction and perception that our presence always makes a difference and helps to achieve results.

WHAT CHARACTERISTICS ARE NEEDED TO BE PART OF THIS TEAM?

Being an organized person is one of the most important characteristics! Motivation is also very important because we can have a lot of team related work at non-ideal times, like exam weeks, but we still have to be motivated and organized to the point where we can do both. It is also necessary a skill that any good engineering student must have, knowing how to solve problems, because plans may not always go right the first time and we have to find alternative solutions with the resources available.

DO YOU THINK THESE CHARACTERISTICS MADE YOU REACH YOUR CURRENT POSITION?

I think so. Through the feedback given to me by the previous Team Board, I realized that these characteristics made me get to where I am today. Always keeping in mind that it is important to maintain a good image of the team and do our best so that everything runs smoothly.

HOW DO YOU DEAL WITH THE PRESSURE OF BEING THE BUSINESS MANAGER?

I admit that it's not always easy, but it's also not a pressure that I feel constantly. However, there are situations where things don't go so well and I wonder if it was my leadership that influenced those failures, if there was something I could have done differently. Despite this, knowing that I am not alone helps me to remain calm, I always have the other members of the board to talk to and also the team members.

CADERNETA

WHAT PROJECTS CAN WE EXPECT FROM TLMOTO IN THE FUTURE?

At the moment everything is very open but one thing you can expect from us is, of course, the construction of the next prototype. We are also betting on participating in other different competitions!

PERSONALLY, WHAT WAS YOUR BIGGEST SUCCESS AND BIGGEST FAILURE WITHIN THE TEAM?

I think one of my biggest successes was the growth of the team, of course it's not just because of me, but because of the new board. We were already a project that had a good foundation, due to our previous leaders, and we managed to fill the team with members who make a difference within the team! In addition, it was very important that this exponential growth was healthy, to maintain a good relationship between members and also our excellent team dynamic. In terms of failures, I certainly must have had some but I don't remember, with the exception of one publication that was giving a lot of work and that took a long time to get well!

IN WHAT WAYS DO YOU THINK TLMOTO WILL HELP YOU ON YOUR PROFESSIONAL PATH?

Firstly, it will help me to understand what I like to do, because despite being in an engineering course, it was through TLMoto that I realized that I really like work where there is a more direct interaction with people. Another favorable aspect is the experience I received in the team, the soft skills I developed and the contacts I established.

WHAT DO YOU LIKE TO DO MOST WHEN YOU'RE NOT ON TLMOTO?

I really enjoy being with my friends, reading, watching movies and series, dancing, watching YouTube videos, playing Sims (I know people don't take it seriously but it's great). I love drawing too! Also, I really enjoy learning new things, even if it's random stuff.

CADERNETA

CAN YOU GIVE US ANY MUSIC AND MOVIE RECOMMENDATIONS?

In terms of music, I recommend Queen, Beatles, Fall Out Boy and Bring Me The Horizon. For movies, I'm a big fan of anything at Studio Ghibli! I also like Mamma Mia, Schindler's List, Atonement and Edward Scissor Hands.

AND INSTAGRAM ACCOUNT/YOUTUBE CHANNEL?

On Instagram and Youtube I really like to see East Asian cooking channels! I adore it! On YouTube I also really enjoy watching videos of restorations, whether they are bags, furniture, shoes, whatever. I like vintage stuff a lot, so the idea of taking something that's already broken or old and giving it a new life appeals to me. On top of that now, that consumerism and textile waste are at such high levels, I think it's a great initiative.

WHAT'S ONE THING YOU DO EVERY DAY?

Put on sunscreen every day and washing my face! Everyone should do this!

FAVORITE MOTOGP RIDER?

Miguel Oliveira, obviously!

WHICH SOCCER TEAM DO YOU LIKE BEST?

Football is not for me! The football team I like the most is our national team. I only care about football when it's the national team playing.

SOMETHING NOBODY KNOWS ABOUT YOU?

There are some people who know, but it's not a very popular opinion... I don't like Ferrero Rocher at all! I really don't like it at all, I'd rather they bring me Raffaellos!

RETURN TO IN PERSON EVENTS

In the last quarter, the team was present at various face-to-face events, namely at FIC.A - International Science Festival, where we were able to make our project known to the younger public, whose interest in motorcycling was notable.

TLMoto was also present at "Feira dos Núcleos", organized by AEIST, which took place at the Alameda and Taguspark campuses. In this, we were able to make the project known to new IST students and showcase our last two prototypes, TLM02e and TLM03e.

More recently, the team was also present at Taguspark's anniversary, where, in a festive atmosphere, it was possible to present our project to Taguspark students who, once again, gave very positive feedback.



PARTNERSHIP WITH ALTAIR/ALTHIMA

Althima and Altair are our newest partners. Althima is an engineering software company that provides technology solutions and services for the most diverse industrial and engineering applications. Specialists in the field of computer graphics, application integration and creation of process automation for product development. Althima also includes the most advanced CAE (Computer-aided engineering) software solutions.

Altair is a global technology company, providing software and cloud solutions in the areas of simulation, high-performance computing and artificial intelligence.

With these partnerships, TLMoto intends to bring more innovation to the team's work, seeking to increase efficiency in all its areas and thus create an even more competitive and sustainable prototype than the previous one. We thank Altair and Althima for their confidence in our project and we hope that together we can achieve many successes.



AERODYNAMICS AND COOLING

Last quarter, the Aerodynamics and Cooling area started the research phase for TLM04e.

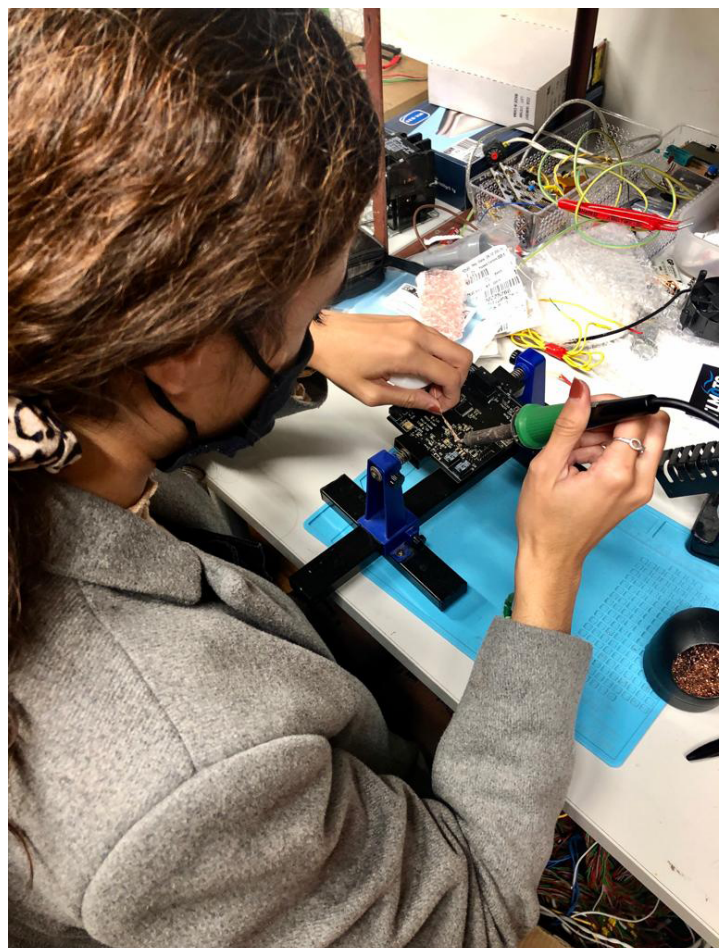
One of the focuses was the design of new fairings, starting by looking for new CAD programs that could be more efficient. The same was done in relation to the analysis of the air flow around the motorcycle. In addition, research was carried out on CFD programs and the main parameters, in order to obtain the most appropriate results for the simulations carried out. A survey was also carried out on experimental tests in the area of cooling to experimentally determine some physical quantities, such as dissipated power.

Regarding manufacturing, the focus was on fairings, both in carbon fiber, for the current prototype, and in fiberglass, for future experimental tests.

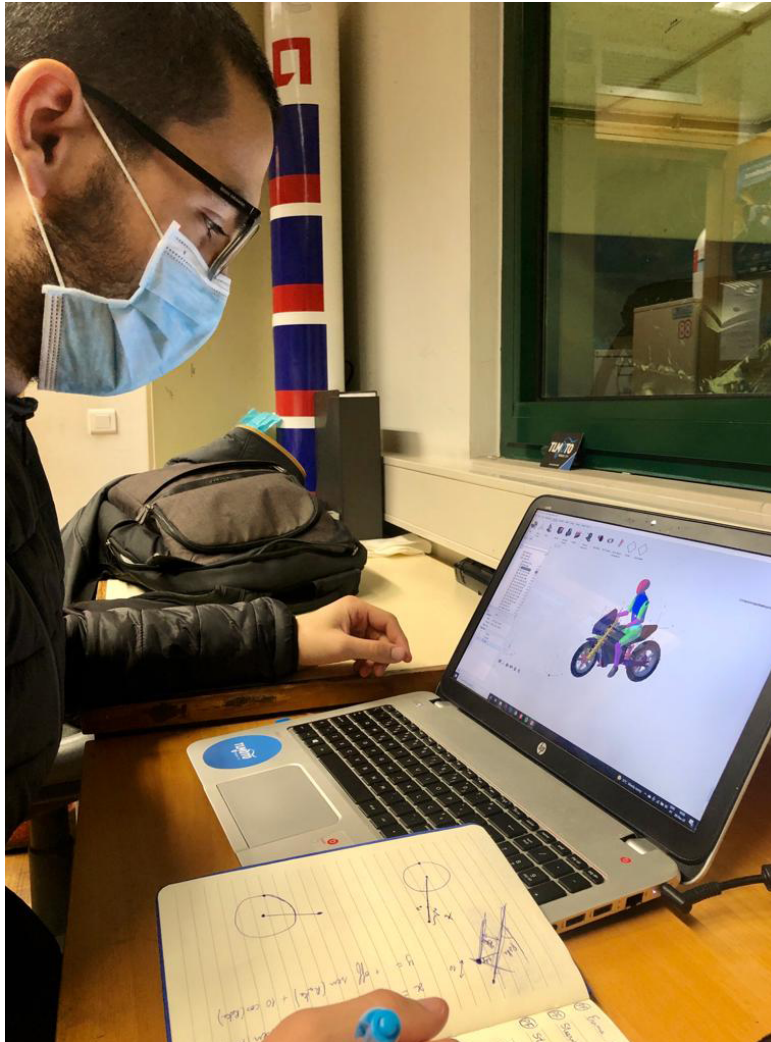
ELECTRONICS

In Electronics, the area has been busy looking for improvements for the next prototypes. The research involved, above all, the BMS (Battery Management System) and interfaces for the Telemetry program.

In addition, work was also carried out on the TLM03e, namely on the charger, where the focus was on making it functional again and thus preparing this prototype for further tests, which will also serve as the basis for the TLM04e.



DYNAMICS



In recent months, the Dynamics area has dedicated itself to the development of a Lap-Time Simulation model. This allows you to understand, with a certain level of certainty and with the current setup of the TLM03e, how long it takes to make a turn on a circuit chosen by the user, in addition to allowing other data to be saved, such as maximum speeds and inclinations in each of the sections of the circuit.

Adding to this, the area is in a phase of research and documentation of the entire theoretical basis of the area, that is, elaboration of dictionaries of geometric parameters, motorcycle movements and forces applied to the prototype, so that when elaborating the models nothing be forgotten.

MARKETING & DESIGN

Over the past three months, the Marketing and Design area has been more focused on promoting the team and increasing its reach. In this way, it has been investing in new digital marketing techniques and studying different strategies that will allow for better results.

This month a new rubric was started, Behind The Wheel, which consists of a series of interviews where the opportunity has been given to meet the leaders of each area and other team members, and their path within this area.



STRUCTURES

The Structures area started the research phase this quarter. The focus was on the prototype's parts, in which the most important aspects to consider when manufacturing a component were analyzed, such as constraints, which materials to use and which configurations to choose.

Complementary research was also carried out on tools that could be useful in the future for the success of the next prototype, as well as the design of components to be improved on the TLM03e.

MANAGEMENT

The focus of the Management area was the application to CA2, where our team submitted 3 different applications in order to obtain support based on the different projects carried out by TLMoto.

A new booklet was also made with our classes of sponsors, together with the Design area. The team is also changing its internal organization and the way registration is done.

We also continued to hold meetings with sponsors, marking the return to face-to-face meetings with them, which was an enriching experience for the team, requiring further preparation, but with greater connection.

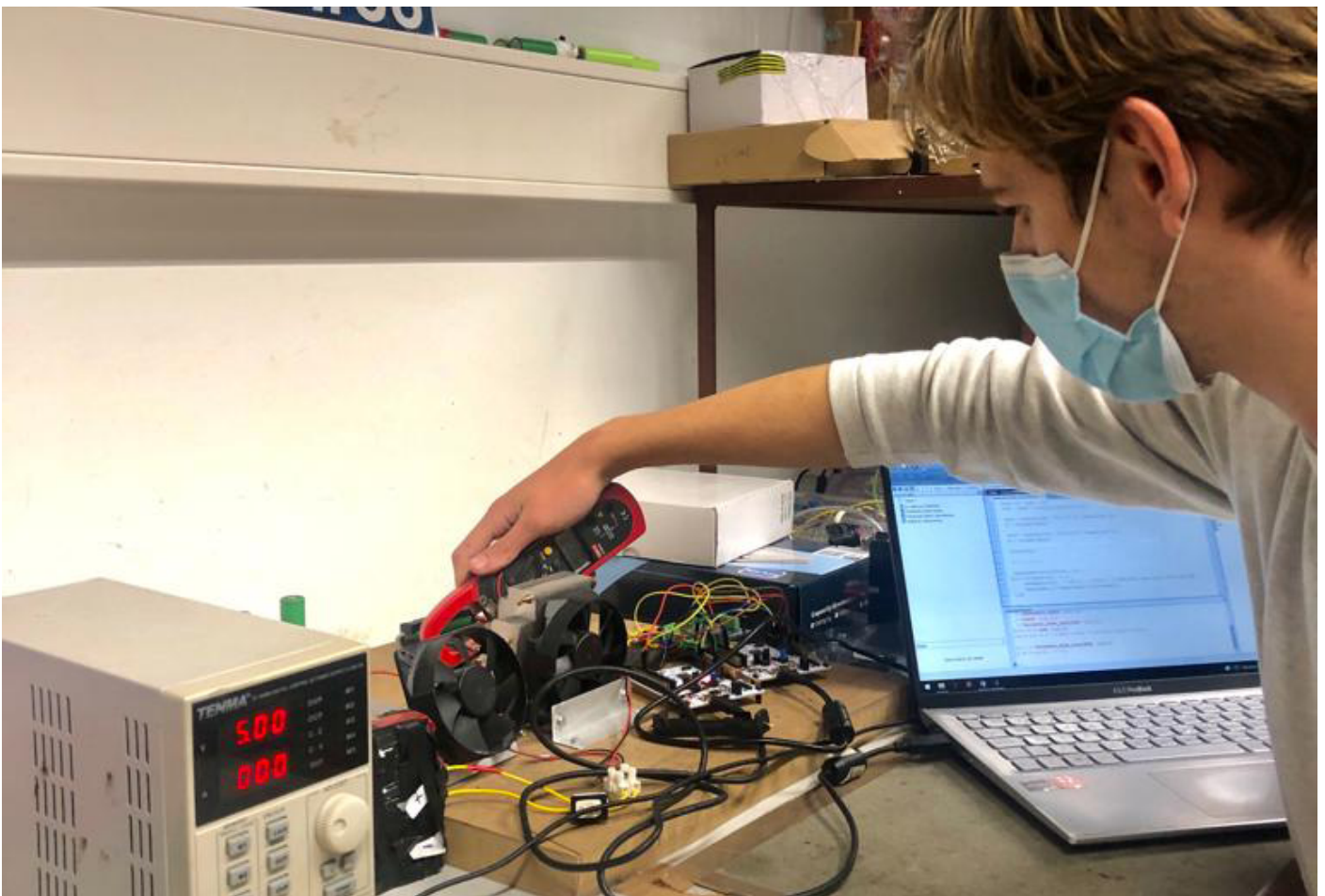
The activities of transition from recruits to members were also carried out by the management area.

POWERTRAIN

In recent months, the Powertrain area was responsible for assembling a battery test bench that will allow continuous and automated discharge; this allows inputting discharge curve data and electrical parameters into the current simulation model in order to compare the performance of different types of batteries. For this, the area had the help of suppliers who provided some battery samples.

New simulation software is also being explored, such as Activate and Compose by Altair, which could significantly improve simulation results. The possibility of creating a hybrid battery pack, that is, made up of different types of cells, is being studied.

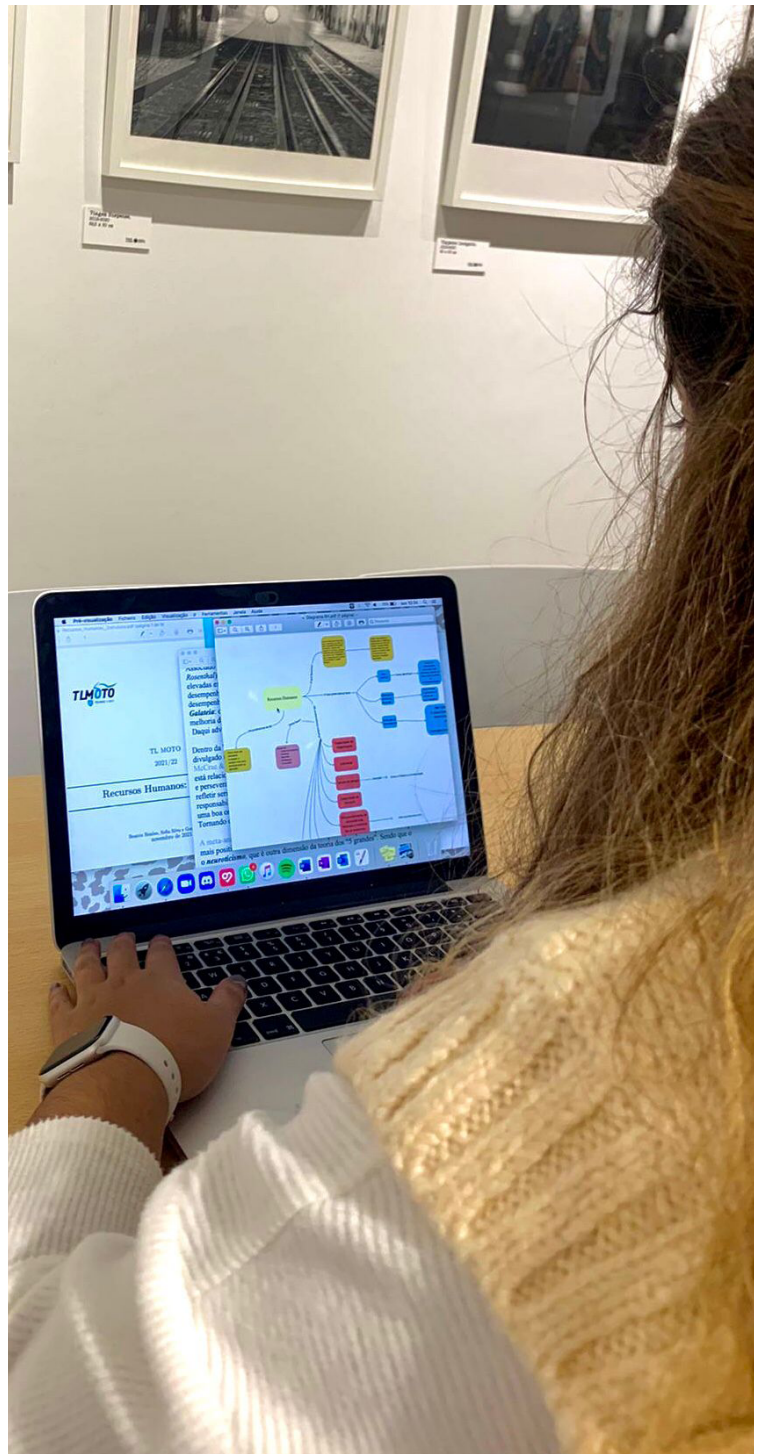
More recently, as the controller used in our latest prototype, TLM03e, had to undergo changes and adjustments, it was decided to adapt the controller of the TLM02e, having carried out bench tests on the engine in the Energy Laboratory.



HUMAN RESOURCES

The most recent area of TLMoto has been focused on team motivation. For this, a form was made to understand the team's level of motivation, which was an important source of essential information for the team's work. In addition, a training on feedback was being prepared, which will be given to each area.

In terms of follow-up, regular meetings have been held with team leaders and some teambuildings have also been carried out. More recently, a session on Mental Health was prepared, the success of which by the team was notorious. We are grateful to Dr. Isabel Gonçalves for the session that gave an important topic that is often neglected.



RECRUITMENT

Our past recruitment has come to an end and as such former recruits have become members. It was the culmination of several months of learning and integration into the team and project. The new members carried out teambuilding activities where they had the opportunity to finally get together, after months of mostly remote work.

However, at the end of the previous recruitment, TLMoto opened a new recruitment in this month of November for the areas of Marketing and Design, Human Resources, Structures, Aerodynamics and Cooling and Dynamics. Recruits will soon have the opportunity to meet the team members and begin their first introductory tasks.





FOLLOW US ON SOCIAL MEDIA AND FIND OUT MORE ABOUT OUR STORY!



tlmoto.tecnico.ulisboa



TLMotoStudent



@tlmotostudent