ENGINEERING PORTAFOLIO

First Tech Challenge
Team numberZTGC01003
Team name: Lluny - CiberEdu

Granollers, 12 of may of 2021

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1. THE TEAM

1.1 TEAM INTRODUCTION

Hy! We are Team Lluny, we are a robotics team, and last year we decided to present ourselves in the First Tech Challenge. Last year we did the First Lego League and we dealt with it well.

We want to make the maximum we can and we don't have really big objectives this year, as this is our first year with REV and we can't make the robot with the same conditions because of COVID-19.

Our team is composed by, Eloi Prat, Ferran Maraña, Adria Garangou, Adriel , Pol Fernández and finally Ester Prat and Narcís Planellas as our mentor. Some of us have done other competitions like First Lego League, RoboCat (catalan competition), and we have done some robotic camps. We like to stay together and work a lot!

1.2 TEAM MEMBERS

ADRIEL ORTEU

Hi, my name is Adriel and I had never done any robotics before but I did read some Arduino books and was really interested in the subject. This is my first competition and I have been trying my best to help in any way I can.

ADRIÀ GARANGOU

Hello, I am Adrià Garangou and I am 13. I did robotics in 2nd grade but I decided to take a break. Now I start again at 3 ESO. I am specialised in construction and designing robots.

I like playing and watching sports, but I also like mathematics and robotics. I love playing videogames with my friends.

ELOI PRAT

I'm Eloi Prat, I am 14 and I like music: I play the piano, the organ and the drums. I'm quite a drone geek and I love 3D printers and robots. Me and Pol have been doing robotics and inventions together for a long time now. Our first competition was in Tona in 2015, when we were 9 years old, and since then we have never stopped learning robotics. We work hard to build the team and we are proud of it.

FERRAN MARAÑA

Hi, I'm Ferran Maraña, and I am 14 years old. I've been doing robotics since i was 9. I like robotics but I also like sports, mathematics and anything related to these things, and I am really into them. I've played piano for 5 years, and I still play it. I've never done any competition so I am so excited to try and to learn how this works.

POL FERNÀNDEZ

Hi I'm Pol Fernández, I'm 14 and I love playing video games. I play with my friends and I try my best to be the best Valorant player (a video game). I've been doing robotics since I was 6 years old. I have done different competitions with my friend Eloi and we won some prices!

I sometimes play the guitar and I like to talk with my friends through Discord.

1.3 TEAM COACHES AND ADVISORS

ESTER PRAT

I am Eloi's mother and I am specialized in contemporary art as a teacher in Uni (IL3- UB). I help the students achieve their objectives working with them, helping to organize and to distribute the tasks.

NARCÍS PLANELLES

ONLINE MENTOR

The world of robotics and automatization has always fascinated me. 4 Years ago I joined a competition team and I decided to specialize myself into the programming sector.

DANIEL MARTÍN

ADVISOR

Innova't director, he has been coaching teams since 2004. He loves his work and inspires us to resolve the problems that we have had. He has participated in many different robotics competitions such as Vex Robotics or First Global Challenge, as a coach and also as a mentor.

1.4 WORKING COMMISSIONS

We design different commissions to help us work properly. That helps us to work in different teams and to have different roles.

Design Commission

The Design Commission is made to work directly in the robot and construct it. From designing to building and solving new problems that occur the best way possible. Working hard from the first moment, first designing the base and then different contraptions. Then, improving them and making all possible changes to avoid internal parts hits, friction, inertia on the wheels, and other important things. Finally, without forgetting it, they also take place when removing messy cables, fixing them to bars, finding the shortest route but more secure. They are the builders of the robot!

Head of commission: Eloi Prat

Programming Commission

The Programming Commission, as its name says, it is made to program the robot. However it doesn't end here, it also works with the phone, checking the camera and preparing the controllers for the pilot. Their tool is the computer and Android Studio. Who is in this commission, started working with the program from the first day of this competition, not at the end when having a working robot because it is also needed to research data, docs, forums and everywhere possible to get ideas for a good and clean code, as efficient as

possible to improve the robot. Programming the controlled phase and the autonomous time, they are needed for sure!
Head of commission: Pol Fernández

Notebook and process commission

All information needs to be documented, all used webpages summed up, all problems written and all possible issues cleared. When those actions are missing, the Notebook Commission is ready to write all the necessary information and remove unnecessary parts that could make misunderstood the building process, all program comments, new materials used and many other cases.
Head of commission: Eloi Prat

Ideas and Research Commission

The Ideas and Research Commission is made to find the modern solutions for the modern problems. When designers have difficult issues finding a solution, this group
Ifworks non-stop to prevent losing time, modifying previous models, creating new contraptions and mechanisms or creating a possible scheme to help them. The best way to solve problems is optimism and to think hard.
Head of commission: Adrià Garangou

Materials commission

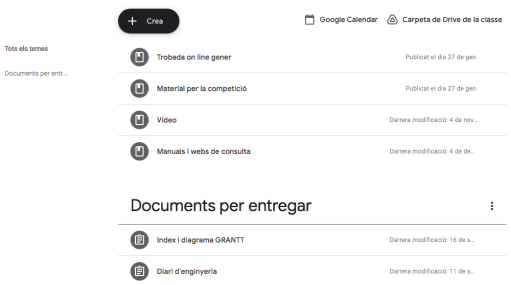
There aren't always enough robot parts created. Maybe another concrete angle fixer, or could be a perpendicular bar fixed, a wheel holder or might be the team's figure for the match! All those new pieces are documented by the Materials Commission in order to have them all together and ensure that they are allowed. A good table of contents containing important and mandatory information of every custom part is included in the notebook.
Head of commission: Adriel Orteu

Regulations Commission

The Regulations Commission is in charge of reading and analyzing all the aspects of the Challenge in order to know every detail of what we must or must not do.
Head of commission: Pol Fernández

Social Media Commission

The Social Media Commission is the one which uploads material in our accounts. For the First Tech Challenge we will be more active in our Instagram account
https://www.instagram.com/team_lluny/
Head of commission: Ferran Maraña



1.5 COMMUNICATION CHANNELS

CHANNELS

GOOGLE CLASSROOM

We create a google classroom to share information and work together.

WHATSAPP
We have a group with the parents, to inform them about logistic items and another group, just for the members of the team.

BRANDING

We have designed the team T-shirt!

SPONSORING

This year is a very difficult year for companies because of the economic crisis that the coronavirus has brought us. Therefore, despite having companies that collaborated financially last year, this year many of them have not been able to help us, only one has offered to pay for the shirts, which is the company **FAGOM,** into whom we are very grateful.

That's why we designed a reverse marketing strategy, and we thought that since companies can't support us, it's us who can give visibility to projects and help them in some way to have more followers and know their values.

That is why we have felt very comfortable asking for the collaboration of the Mona Foundation.

Fundació Mona is a rehabilitation center for abused chimpanzees and macaques .They stay there to recover from their previous lives as circus artists, television actors, and even pets. Many of them spent years living in solitude under terrifyingly inhumane conditions.

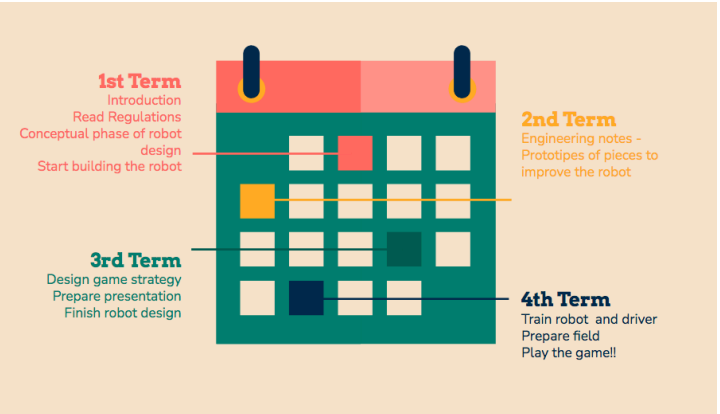
We like technologies and we like a better society!

FUNDACIÓ MONA
Centre de Recuperació de Primats

FAGOM
EFFICIENCY

1.6 WORK PROCESS

As we have finished our Vex season, we have 5 month to develop our robot for the First Tech Challenge. We try to be as organized as possible. As mentioned before, we work in different Commissions (see working Commissions section).



This system allows us to accomplish our goals working in small and different teams.
The team has planned this chronology in September, and we try to follow the table scheme the best we can. If we make sure we work as planned, we will have enough time to build the robot and program as wished.

FIRST MONTH

DESIGN: Start thinking about the design of our robot and how we could do all tests.
PROGRAMMING: Start doing basic programs for test the motors
NOTEBOOK & PROCESS: Starting with team introduction and colors palette.
IDEAS & RESEARCH: Read all the manuals of the FTC for have a clear idea of what we can do
MATERIALS: Think about the pieces that we will print on 3D
MANUALS: Read and print (if it is necessary) the manuals
SOCIAL MEDIA: Create content of Instagram

SECOND MONTH

DESIGN, Start doing the base of the robot and the type of wheels
PROGRAMMING: Keep doing test programs
NOTEBOOK & PROCESS: Finish all the team introduction and start with the robot aspects
IDEAS & RESEARCH: Always keep on researching
MATERIALS: Design the pieces
SOCIAL MEDIA: upload some robot's photos, and stories of how we work as a team

THIRD MONTH

DESIGN: Build all the robot parts (planning the design, etc.)
PROGRAMMING: Start programming the basics for the robot
NOTEBOOK & PROCESS: Search all the pieces homologation and keep documenting
IDEAS & RESEARCH: Think about the different systems
MATERIALS: the 3d printer works bad and don't print the pieces correctly
SOCIAL MEDIA: Keep being active

FOURTH MONTH

DESIGN: Improve all the specific parts
PROGRAMMING: Start testing the accessories for know if they work correctly
NOTEBOOK & PROCESS: Keep on doing the pieces' homologation
IDEAS & RESEARCH: start doing the balls-taker, the design and how it's going to work.
MATERIALS: Solve printing problems and create more pieces
SOCIAL MEDIA: Upload some videos of the most important improvements

FIFTH MONTH

DESIGN: Finish the robot
PROGRAMMING: Start and finish the final program
NOTEBOOK & PROCESS: Do the final design stuff and print all
IDEAS & RESEARCH: Change some mistakes of the robot structure
MATERIALS: Add the final printed pieces on the robot
SOCIAL MEDIA: Upload the last content before the competition

2. STRATEGIC PLAN

2.1 GAME

This is our first year in the FTC competition, so we are spectant to know how it exactly works. We want to maintain the balance between being bold and conservative.
We try to focus on the autonomous part, because we are not sure to be able to control all the pressure and the nervousness of the competition. But we also want to play and have fun so the driver controlled period scoring must be a game for all of us.
The end game scoring will raise the stress level up but we can afford that as a team!

However, some inconveniences may occur, and then we will score 55 points if we don't DO IT correctly

2.2 NOTEBOOK

In a competition like First Tech Challenge the notebook and all the project behind the robot it's very important, so we have planned some fundamental objectives:

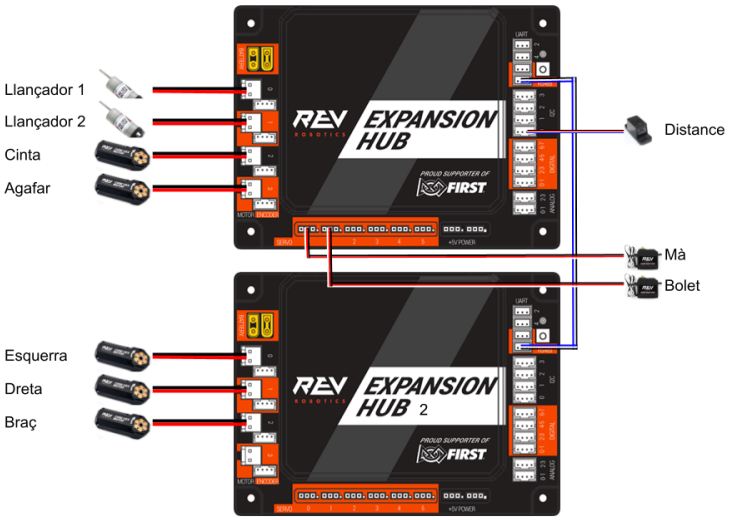
- Document everything
- Create all the 3D designs
- Organize the sessions

We have been working hard to finish the engineering project in order to have time to work last week just profiling details.

3. PROGRAMMING

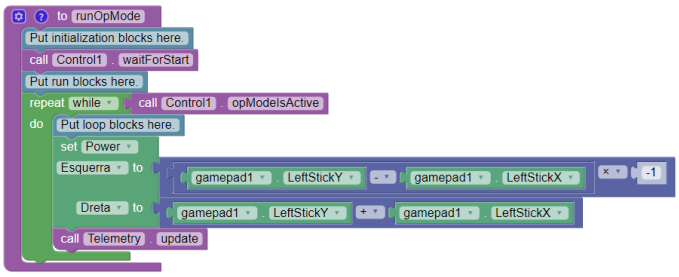
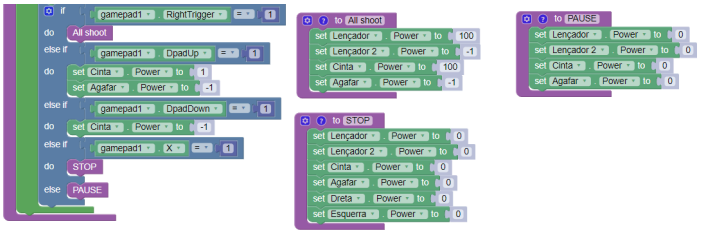
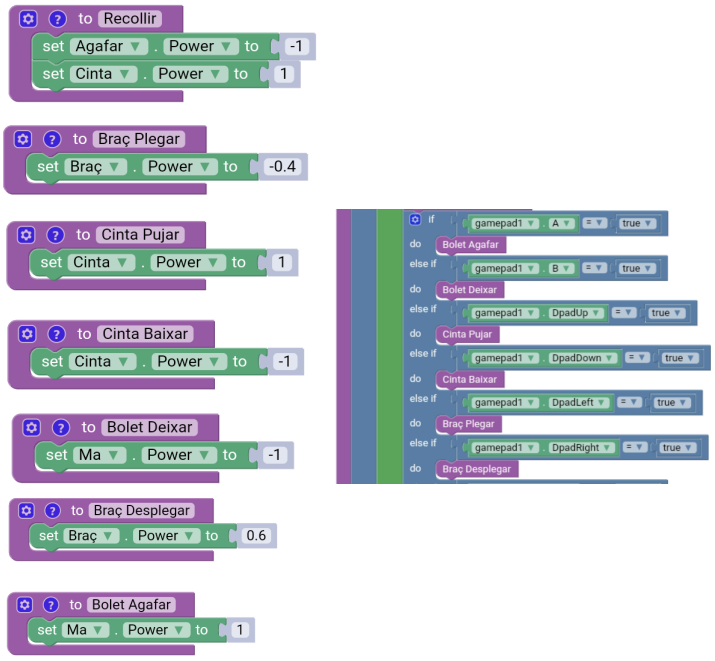
3.1 ROBOT PARTS

In this robot we have used 4 motors Core Hex, 2 motors hex 1:20, a servo and a distance sensor. Since we don't have enough space we are using an expansion hub to connect three other motors.



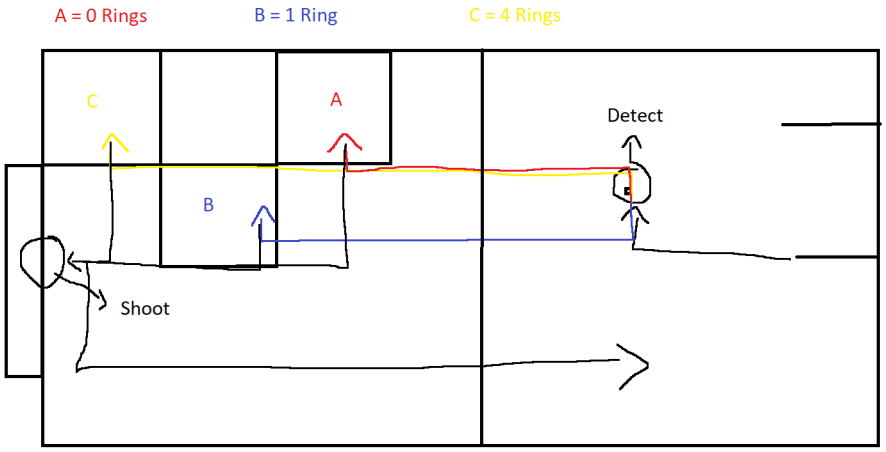
3.2 FTC - OPMODE

First of all we created a program for us to try the movement of the robot:

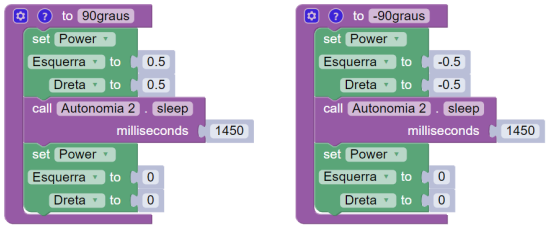
	In this program we use the joysticks of the controller to set the velocity of each motor so we can control it with just one finger.
	Then we created a second program where we controlled all the launching system: In this program we used the RT to activate all the motors related to the launch. But with other buttons you could control each part of the robot like the ramp or the motors of the launcher
	After we have done almost all the robot we joined the two programs and we created a final opmode were you could control everything: In this program we use the joysticks of the controller to set the velocity of each motor so we can control it with just one finger.

3.4 FTC - AUTONOMUS

We started doing the autonomous program creating a small plan of what the robot should make. Our first plan:

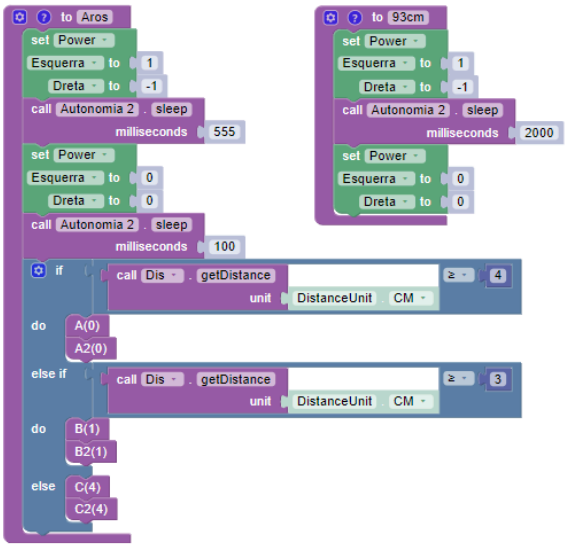


At first we created a program to know exactly how much time we should lead the motors on to make a complete 90º rotation.



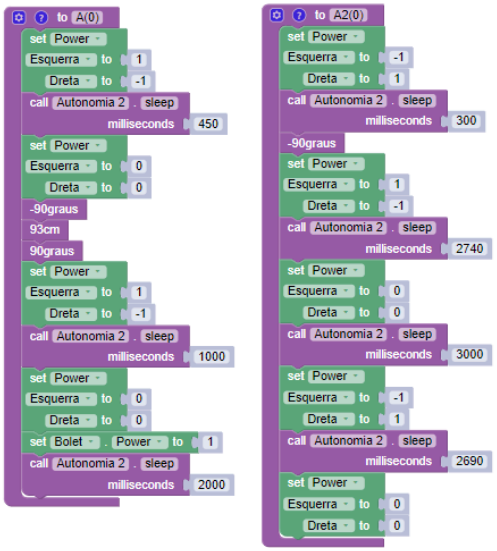
We calculated that a full 90º rotation is more or less milliseconds, with the motors at 0.5 of power.

Then we decided to do the first part of the program that goes to detect the rings with functions,



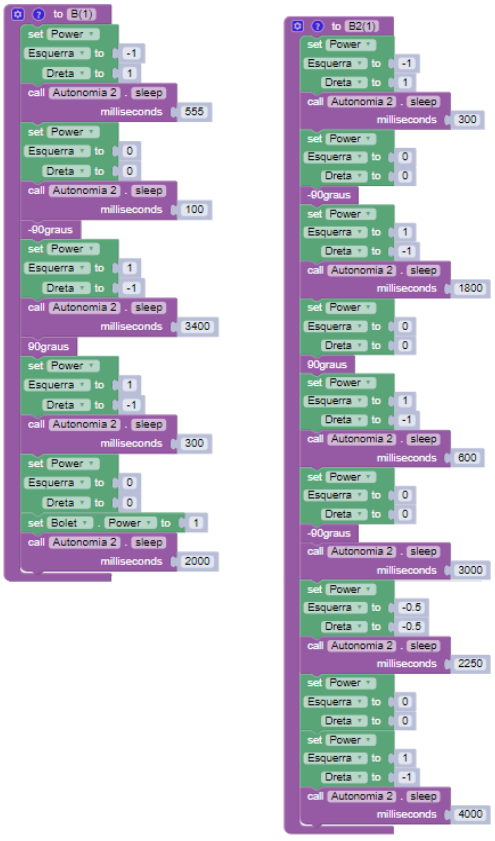
We calculated exactly how many cm it should do and we calculated that for 93cm it must leave the motos for 2000 milliseconds at 1 of power. We used the distance sensor to detect the amount of rings that there are.

After that we started creating the 3 options that are possible to leave the ###### and shoot the rings to the tower. The first we did was the option with 0 rings (A):

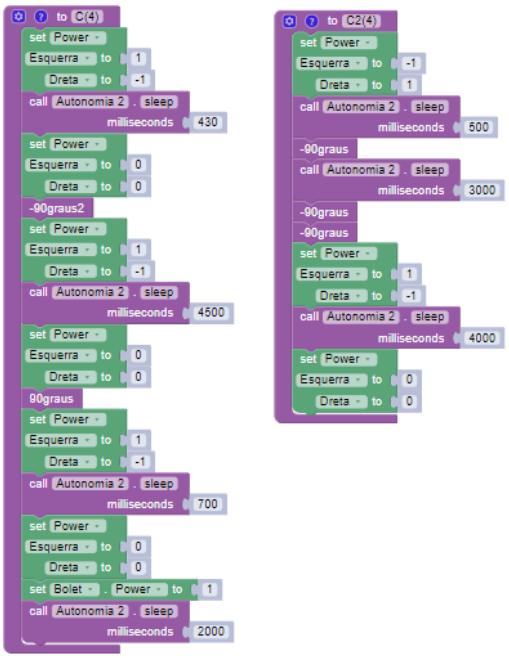


We decided to leave the Wobble Goal first of all and then try to put the rings in the goal. Finally we turn back to the base so that we get the 5 extra points.

Then we did the second option with 1 ring (B) and then we did the third option with 4 rings (C):



We decided to leave the Wobble Goal first of all and then try to put the rings in the goal. We decided not to pass through the ring and try to avoid touching the wobble Goal after we leave it. Finally we turn back to the base so that we get the 5 extra points.

	We decided to leave the Wobble Goal first of all and then try to put the rings in the goal. We decided that the best option was to pass through the ring to reduce the time spent. Finally we turn back to the base so that we get the 5 extra points.

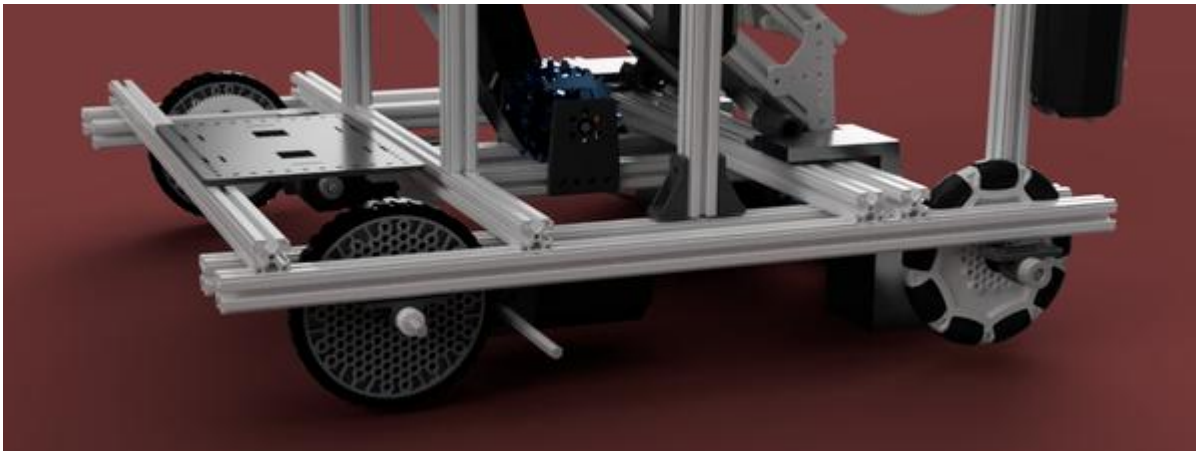
4. DESIGN

4.1 INTRODUCTION

In this section, we'll be talking about the design, render and development of the robot throughout the sessions we've had.

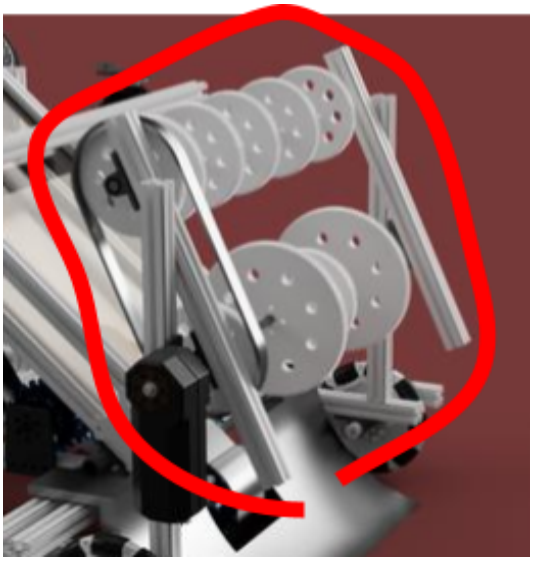
4.2 ROBOT BASE

The base is the part we build the robot on. It has to be big and stable.



All the parts of the robot have the base as the place they can use to make sure they won't move. All the robot parts are designed having the base as a reference.

4.3 CANNON



The cannon divided in two parts, the cannon, and the recollection system. When the robot moves, the recollection system unfolds itself and starts putting toruses into the cannon.

4.5 ARM

The arm is a very simple part designed to pick up the wobble goal.

4.6 FINAL RESULT

We didn't change much of the robot when we built it. The most important change we found is that the gears were different from the ones we had in the render, so we had to improvise a little bit. This are some images of what we ended up building.

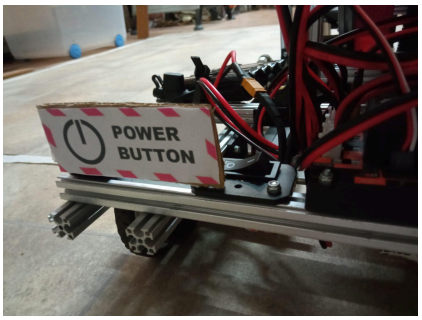
5. CUSTOM MACHINED

5.1 INTRODUCTION

This document listed and documented all custom created, designed, built parts or In on official parts from default kits (REV Robotics, TETRIX/PITSCO or MATRIX/Modern All of them are approved in the 2020-2021 Legal and Illegal Parts List. https://www.firstinspires.org/sites/default/files/uploads/resource_library/ftc/legal-illegal-parts-list.pdf)

As mentioned in rules none of the custom parts are meant to damage another Robot neither the Playing Field, injure a participant or volunteer, there is no rule prohibiting them and finally, game would be completely playable if all teams used any of these parts: they have been made to successfully join parts, prevent Robot damage, simplify contraptions, improve already official and legal parts and/or other non-abusive actions.

Legal Warning Parts that belong to other people/teams/companies or were first designed by third parties which are modified; are following their own license. Any unwanted use by third parties to their parts, pieces or components were, is and will be not intended.

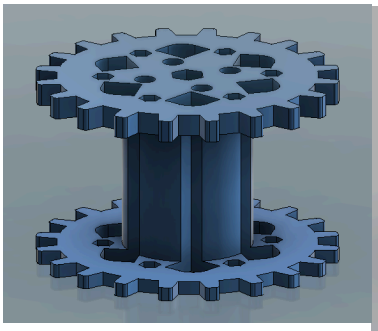
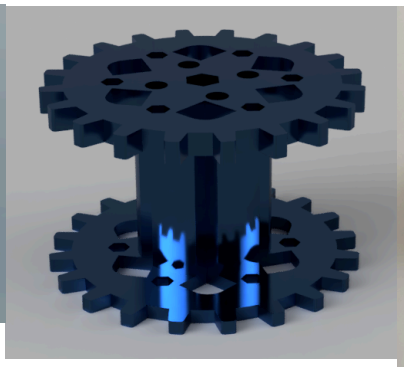


5.2 POWER BUTTON TAG SURFACE

Number of versions 2	Type of licence: Free license
Use: to collect	Building tool: scissors
Material: cardboard	Designed by: Own design

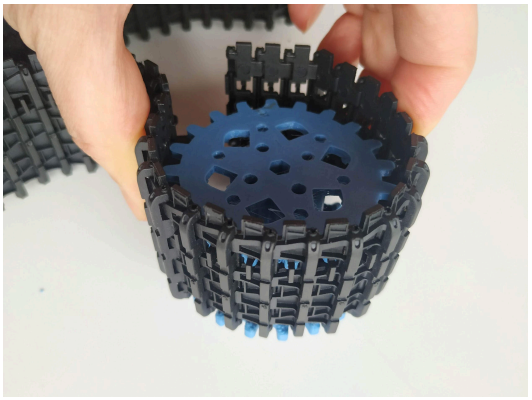
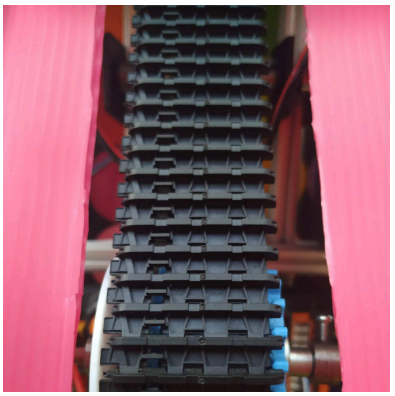
5.3 DRIVING WHEEL

Number of versions 4	Type of licence: Free license
Use: It is a driving wheel. It has 20 keys and is made out of PLA blue BQ plastic.	Building process: Plastic extrusion (FFF) Building tool: 3D printer, ender 5 PRO
Material: PLA	Design specs: Autodesk Fusion 360 Design process: Modification Designed/edited by: Eloi Prat Padró

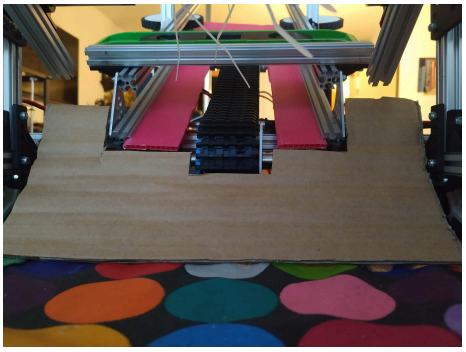
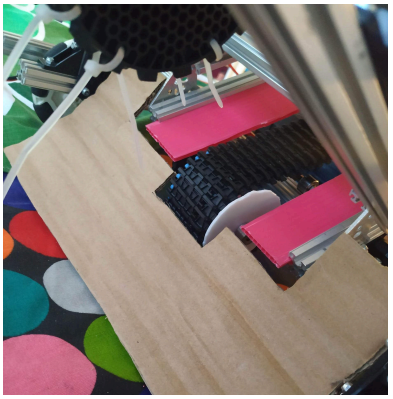

5.4 CONVEYOR BELT

Number of versions 2	Type of licence: Free license
Use: to collect	Building tool: scissors
Material: cardboard	Designed by: Own design

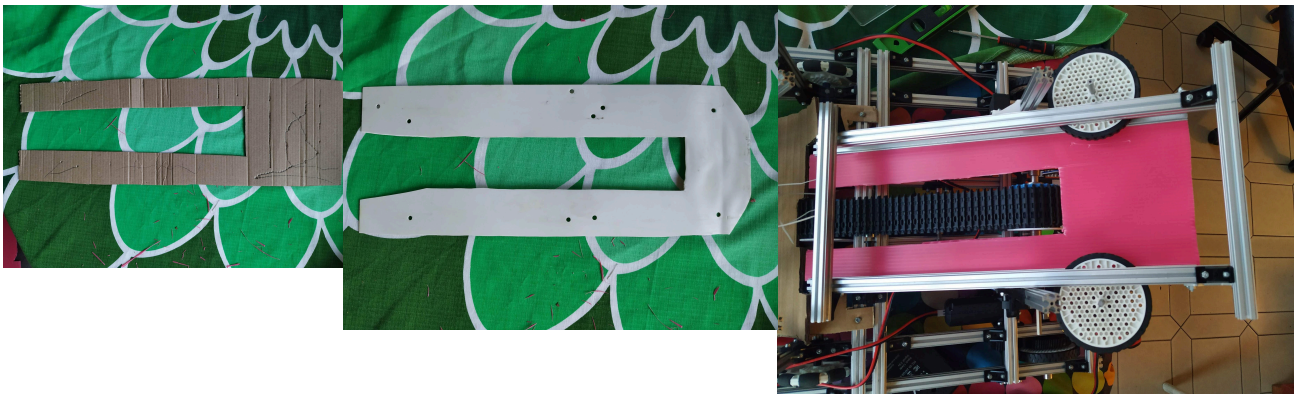
5.5 COLLECTOR

Number of versions 2	Type of licence: Free license
Use: to collect	Building tool: scissors
Material: cardboard	Designed by: Own design

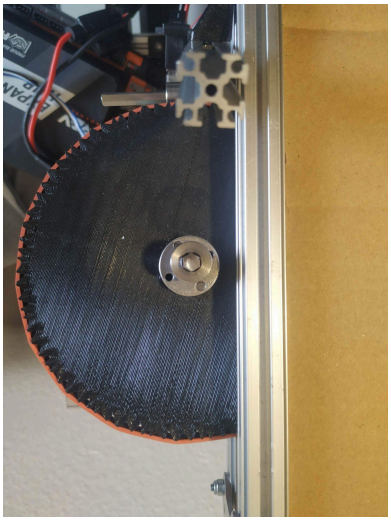
5.5 ACCOMPANYING SURFACE

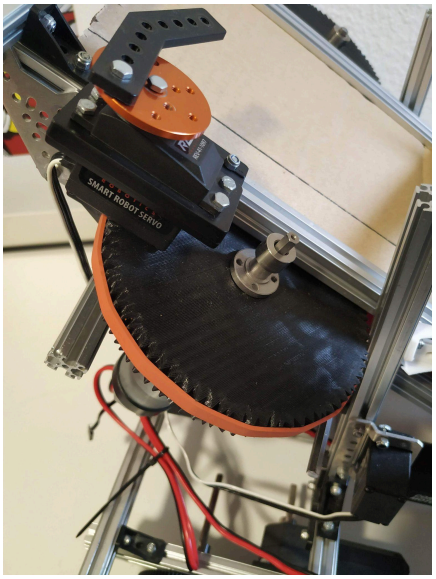
Number of versions 5	Type of licence: Free license
Use: to accompany the materials to be shuttled	Building tool: scissors, cutter
Material: plastic, cardboard	Designed by: Own design



5.6 SHUTTLE WHEELS

Number of versions 2	Type of licence: Free license
Use: to give the rotation to accompany the materials to be shuttled	Building tool: cd
Material: PLA + gum	Designed by: Own design by Fusion





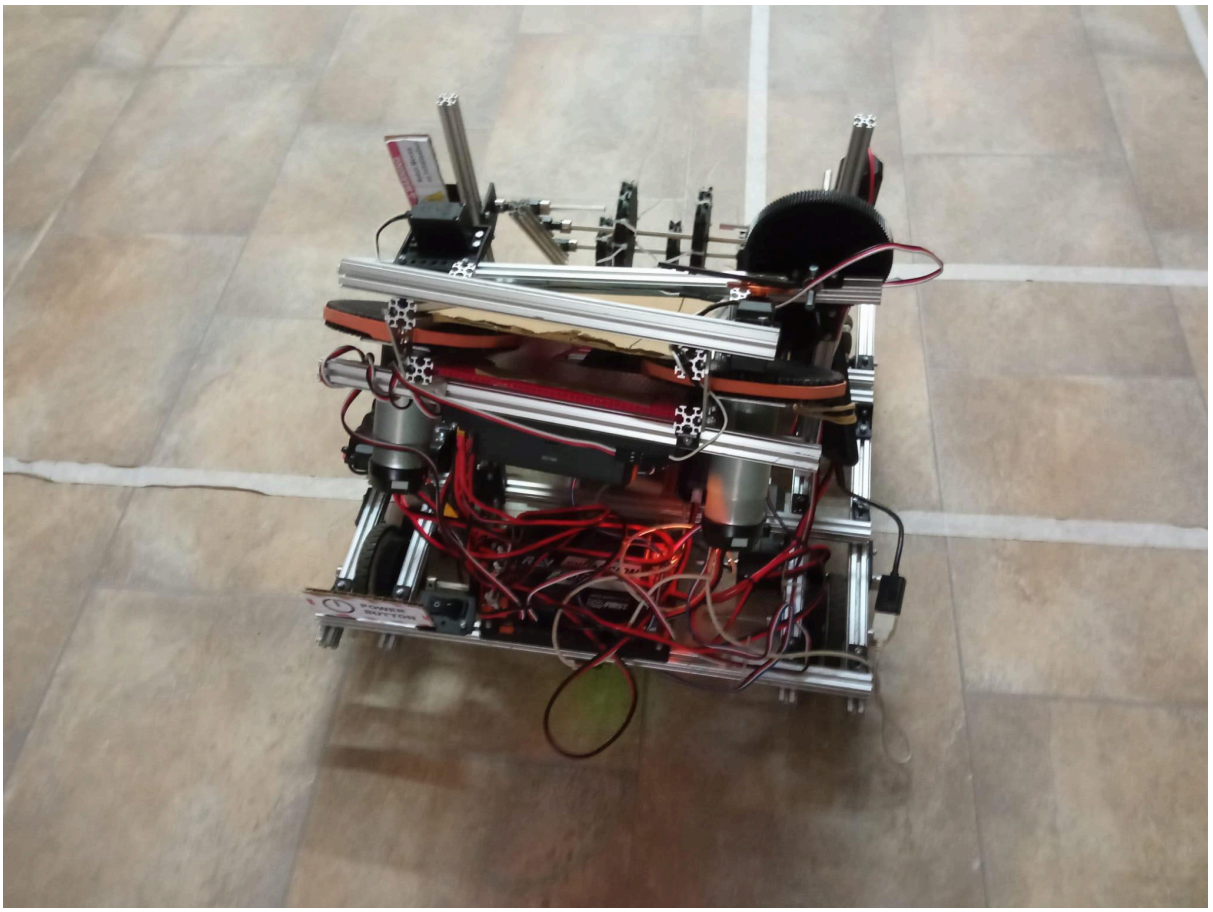
ENGINEERING NOTEBOOK

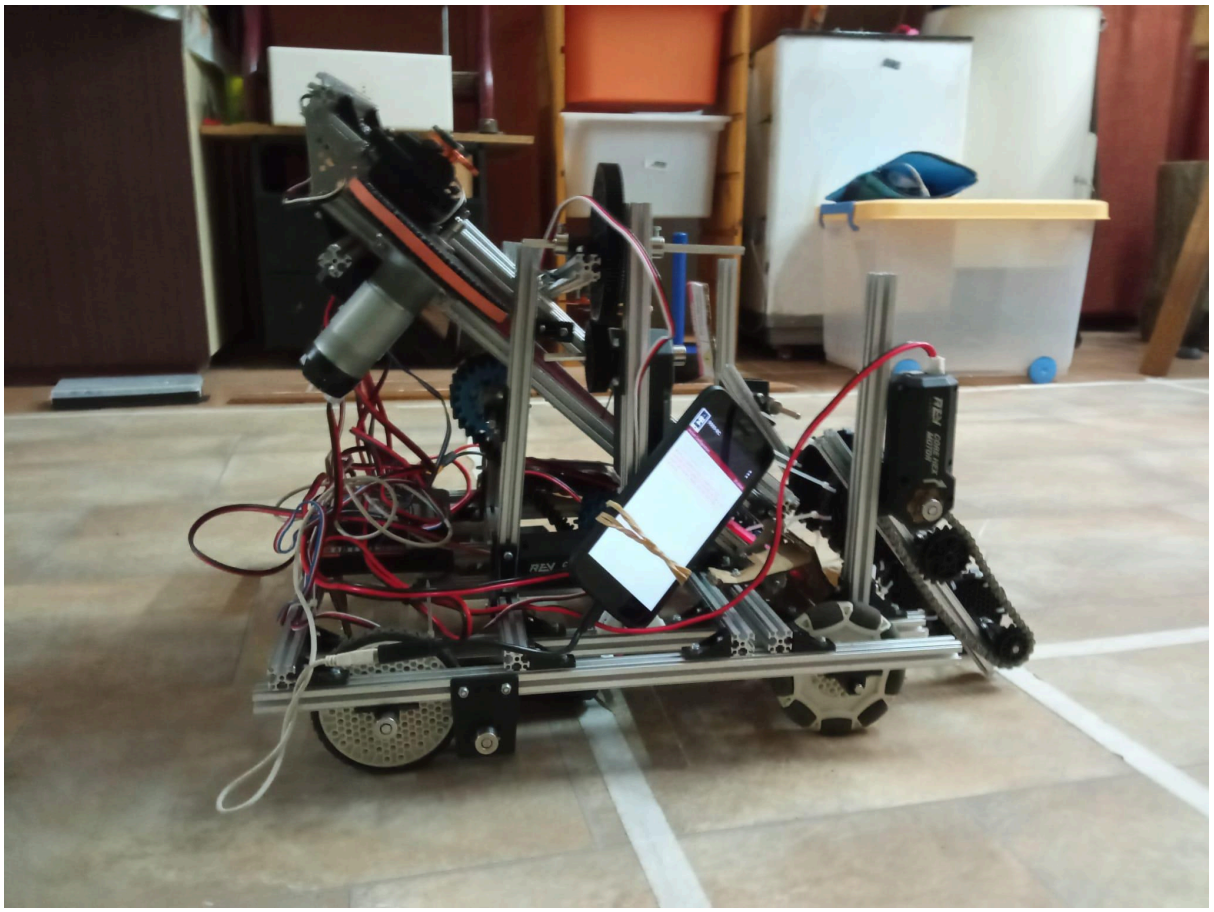
ANNEX

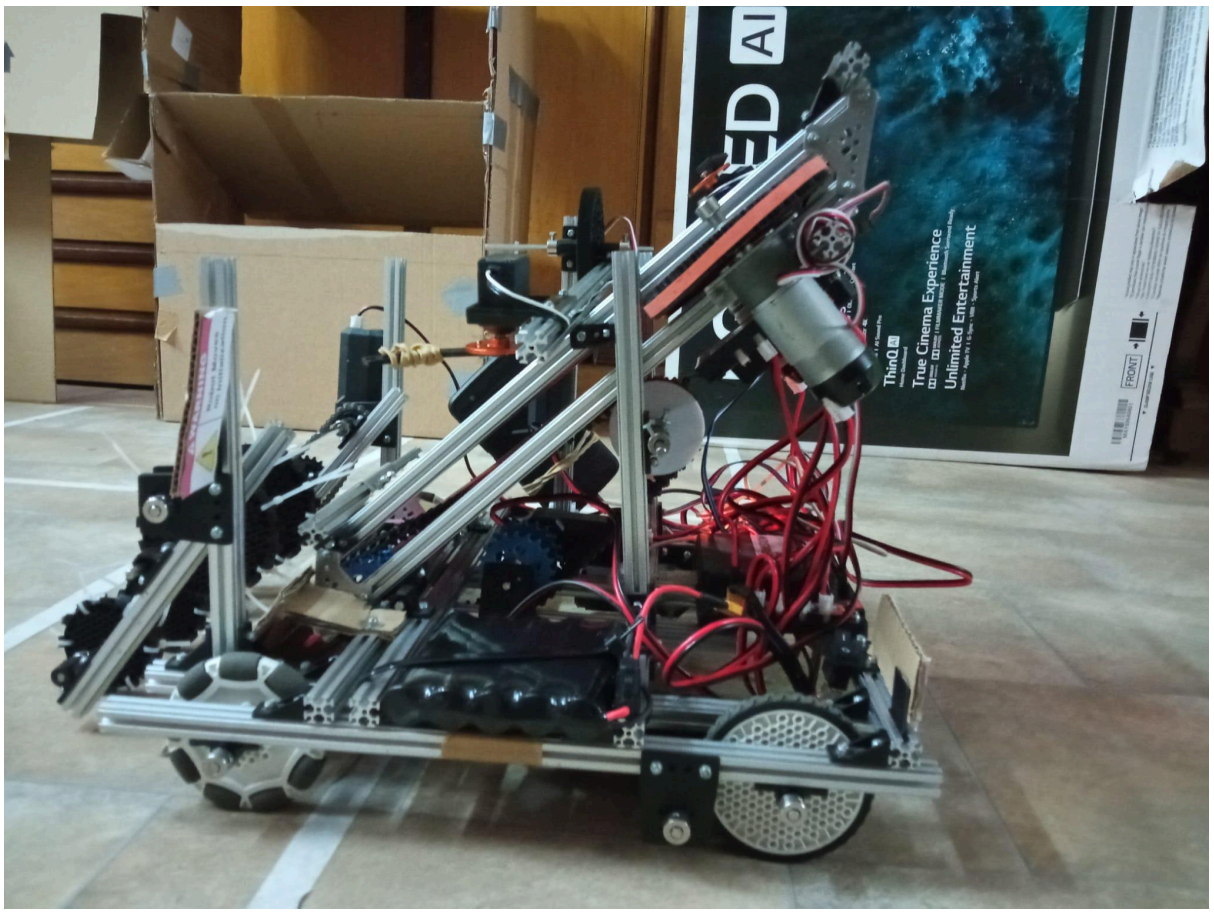
PHOTOS AND RENDERS

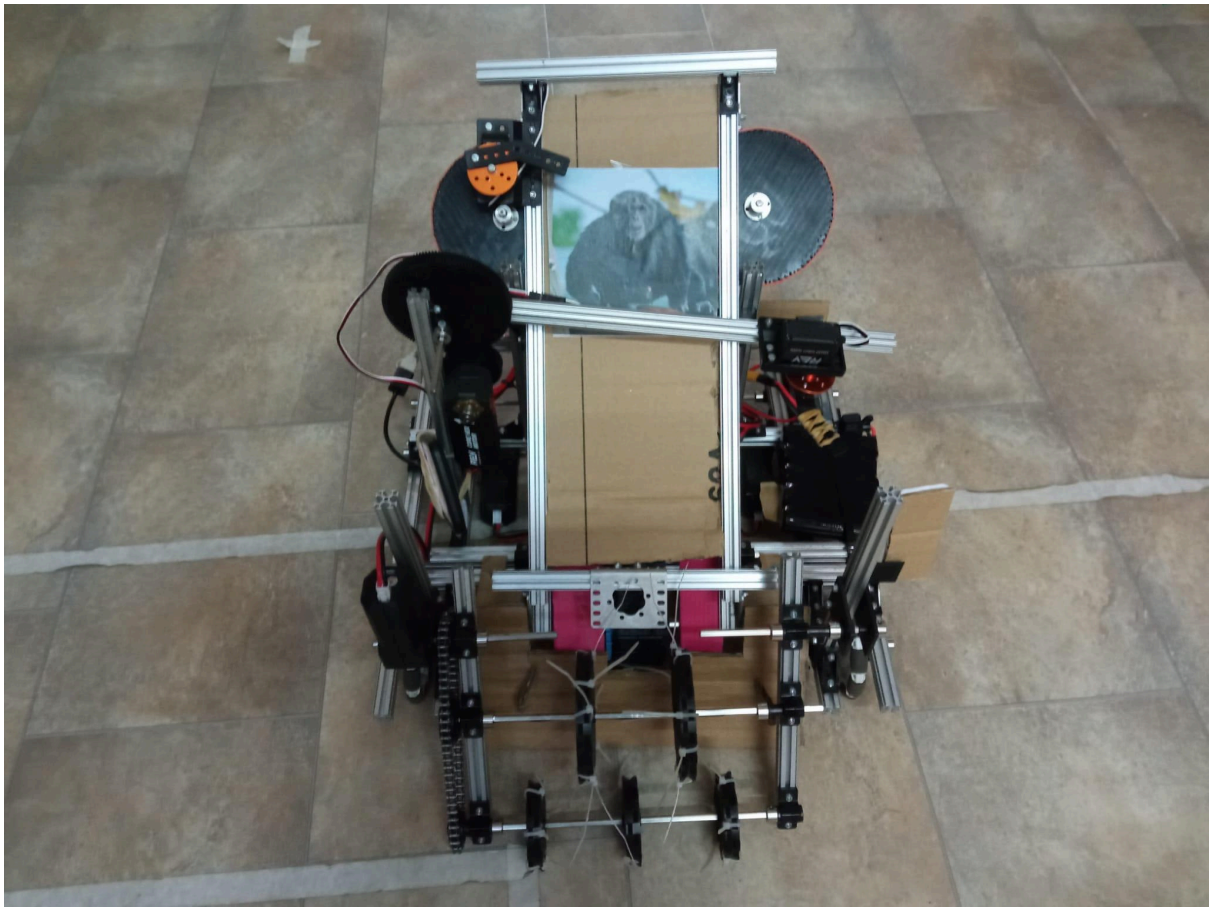
First Tech Challenge
Team numberZTGC01003
Team name: Lluny - CiberEdu

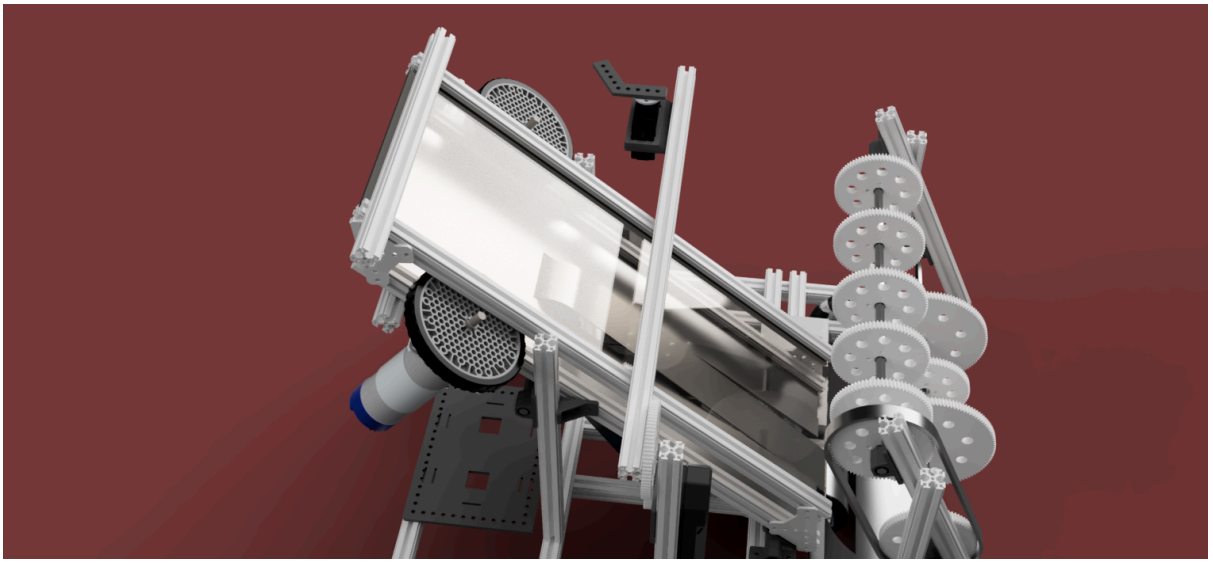
Granollers, 12 of may of 2021

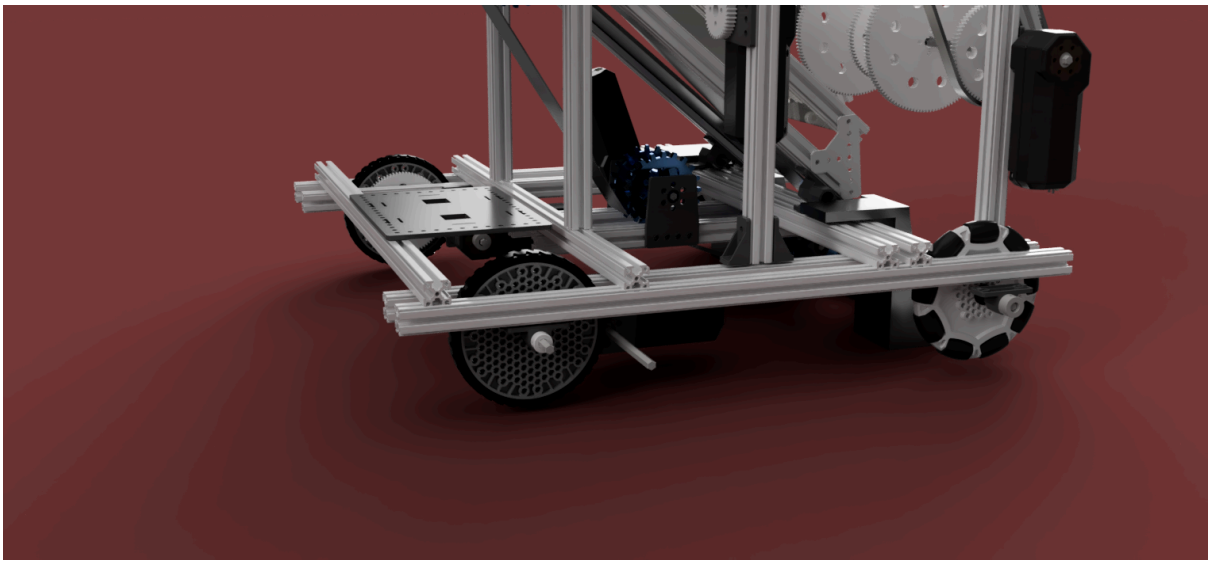


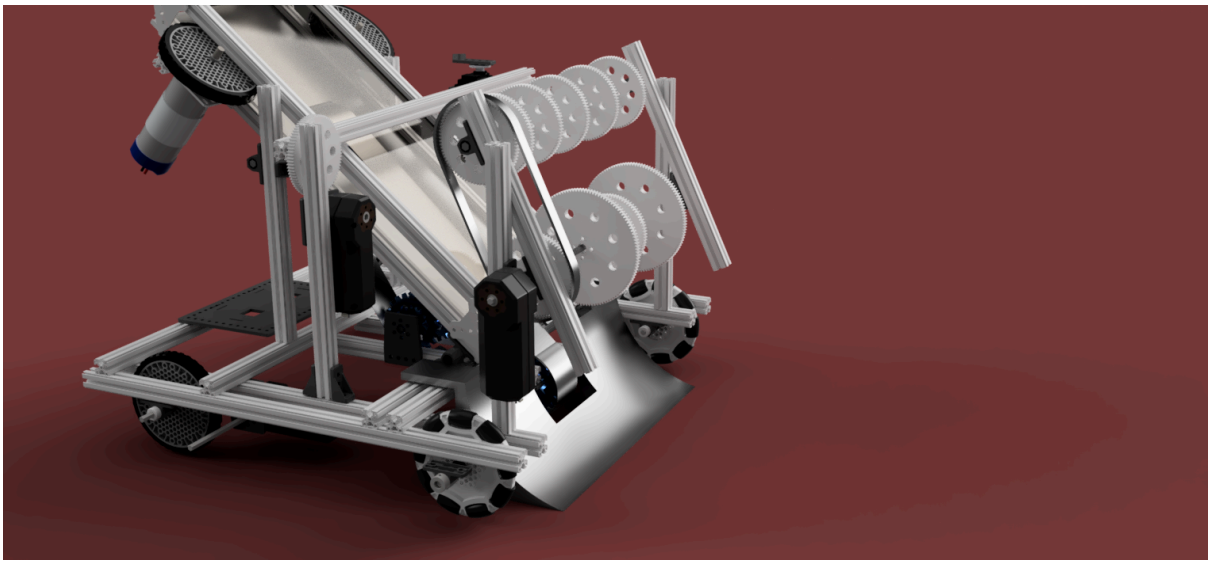


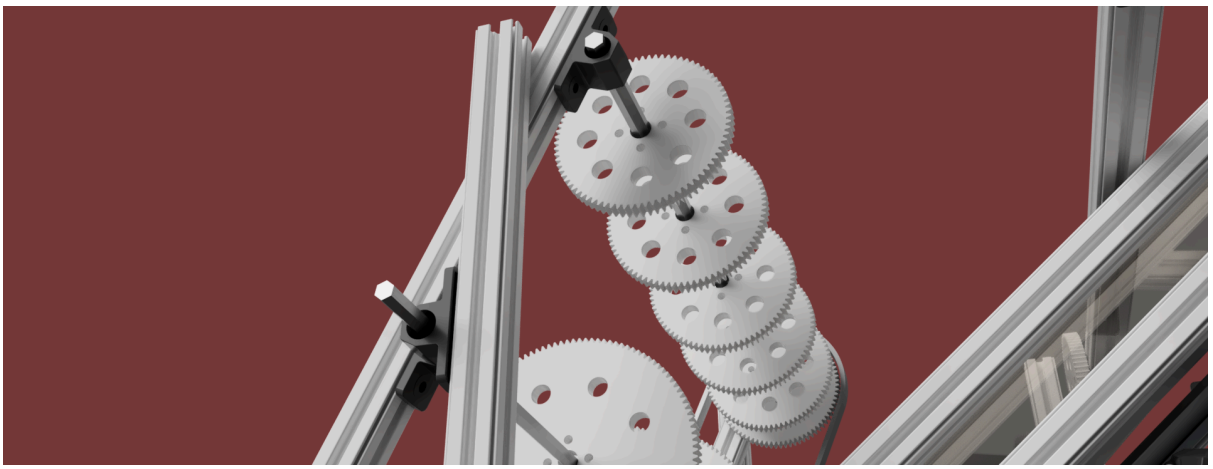

True Cinema Experience
Unlimited Entertainment
FRONT

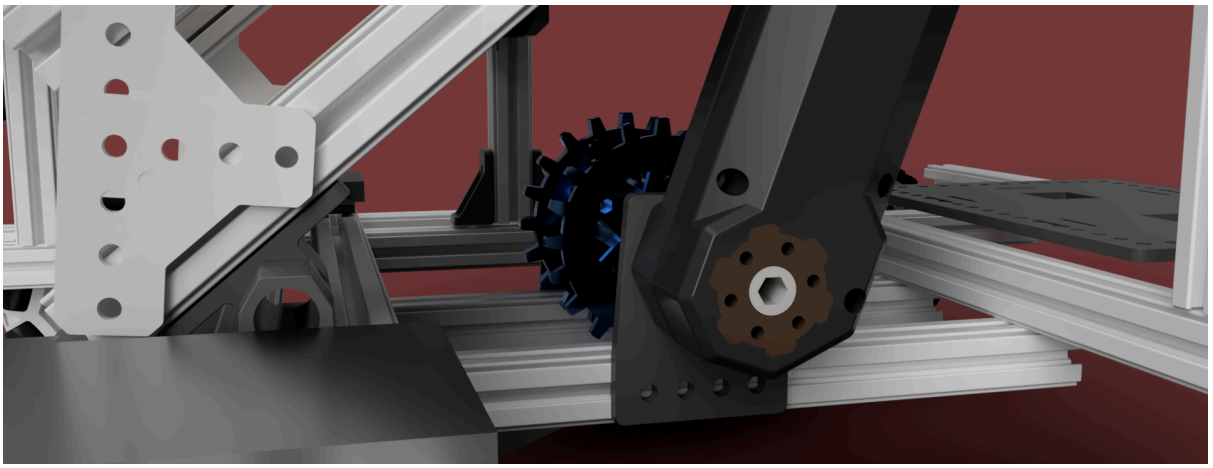


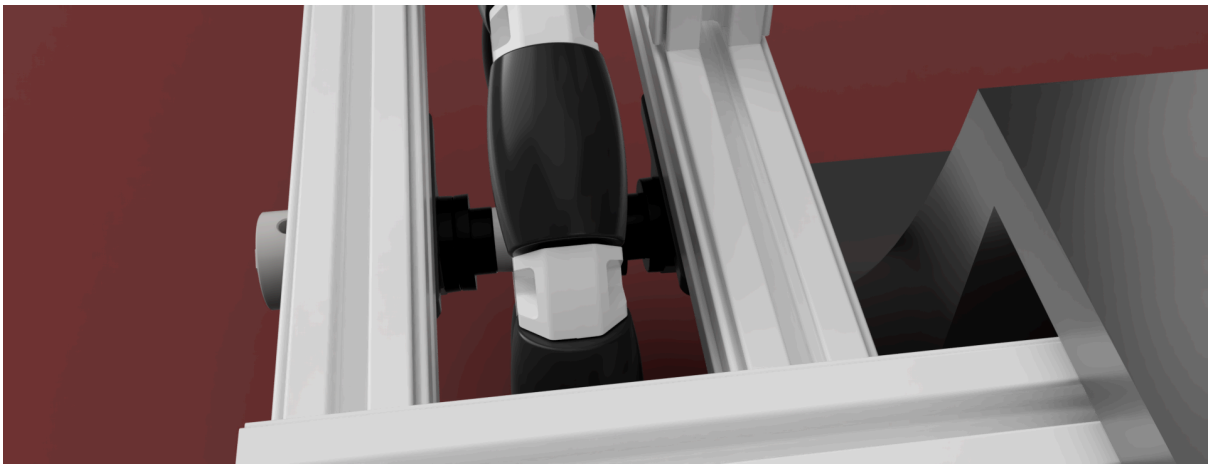


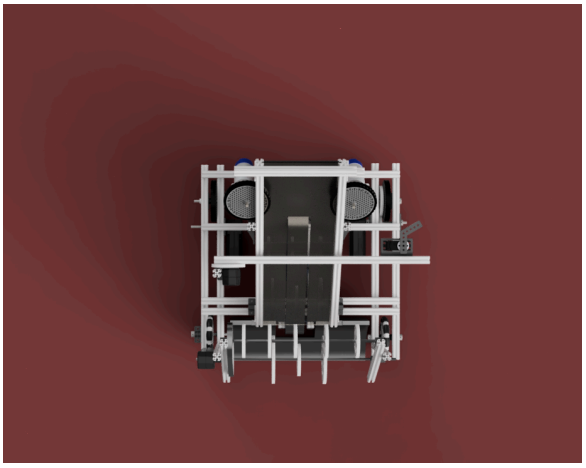


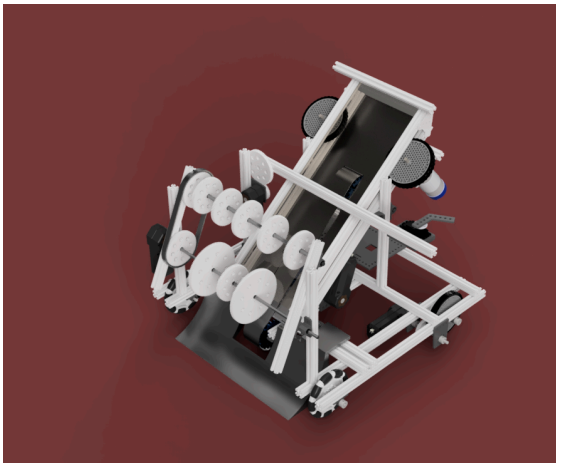


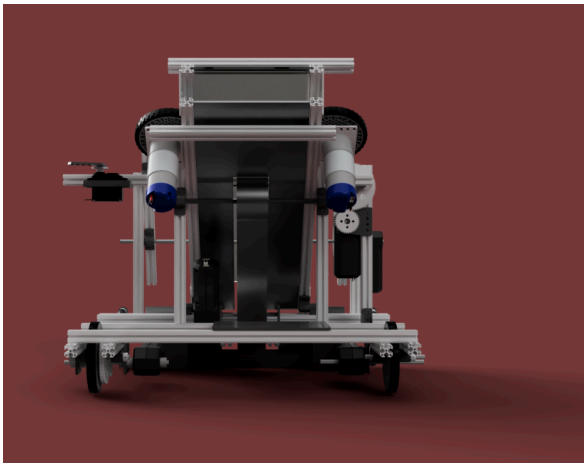


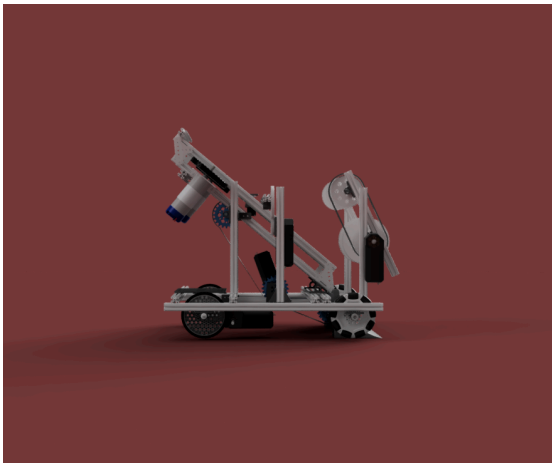


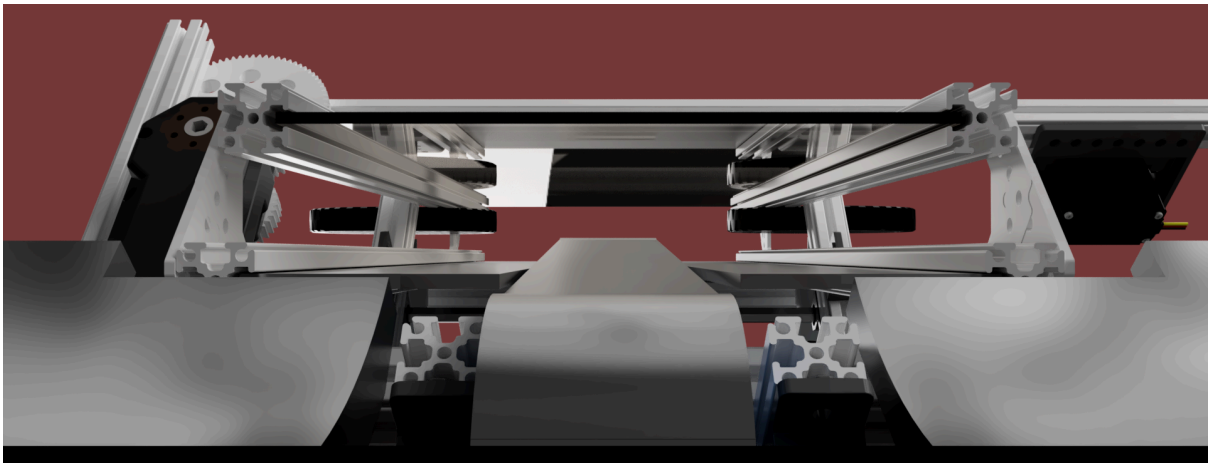












All the renders are done by the team and we use Fusion Software

ENGINEERING NOTEBOOK

First Tech Challenge
Team numberZTGC01003
Team name: Lluny - CiberEdu

Granollers, 12 of may of 2021

DATE	WEEK	DURATION
7th of August 2020	1	1H 30 MIN

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís
X	Ferran Maraña		

In July we did some robotics camps together, the three of us together to reinforce knowledge.
We met in August so as not to lose all contact and put in order the ideas we had about how to continue our hobby: making robots and having fun.

DATE	WEEK	DURATION
8th September 2020	2	1H 30 MIN

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		
X	Jordi de Vilalta		

Let's start by looking at the websites of the various robot competitions and the different companies. We had participated in the FLL last year and the robot had given us a lot of problems, because it lacked accuracy and did not offer what we were looking for.
That's why we were thinking about changing the monitoring company, which had been APRENTIK, and switching to INNOVA'T, the company we had done the camps with.
Start writing emails and agreeing on prices, but COVID doesn't know how it will progress and it will be a surprise throughout every month.

DATE	WEEK	DURATION
10th September 2020	3	1H 30 MIN

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		
X	Jordi de Vilalta		

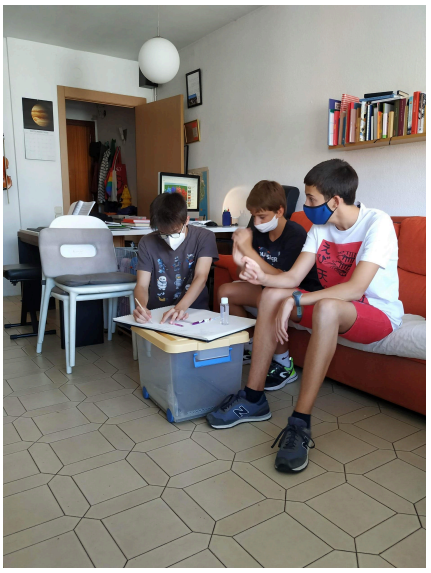
Fortunately, we were able to stay quickly with INNOVA'T and we went to look for the robot at the company's headquarters, which is in Girona. Now we will take Eloi home. This year we can't go to the garage where we usually go because Eloi's grandparents are at home and since there is COVID we don't want to infect them.

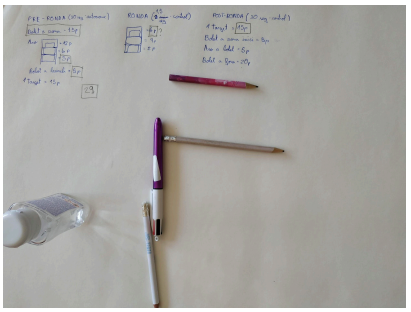
DATE	WEEK	DURATION
23th September 2020	4	2H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		

We visit https://www.firstinspires.org/resource-library/ftc/game-and-season-info
After this, we prepare the documents to start printing some of the elements at home

Basic instructions:
https://firstinspiresst01.blob.core.windows.net/first-game-changers/ftc/game-one-page.pdf
We ask Dani by WhatsApp some questions about the materials.
Ester has registered herself to the webinar that is going to be next 4th of October
We sketch the robot and start thinking.

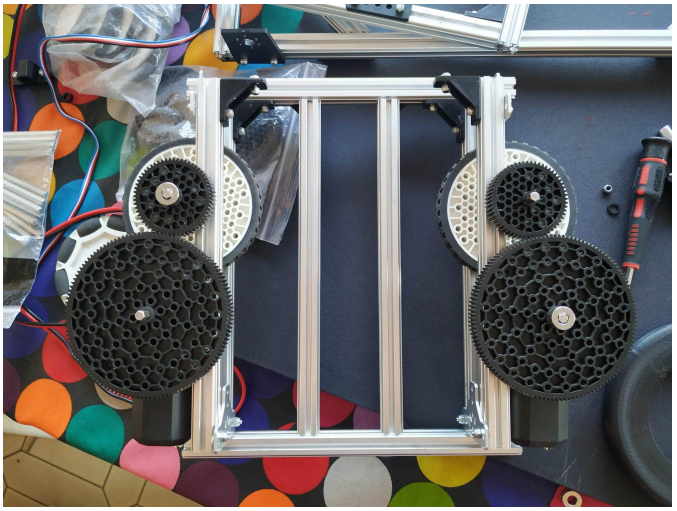




DATE	WEEK	DURATION
30th September 2020	5	2H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		

First of all, we spend time watching videos from previous competitions of FTC. After that, we start to workt on the shuttle, making some tests. W

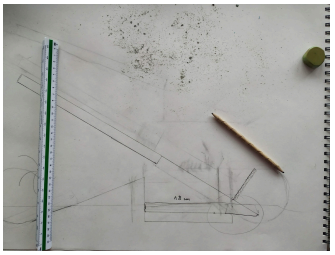


DATE	WEEK	DURATION
7th October 2020	6	3H

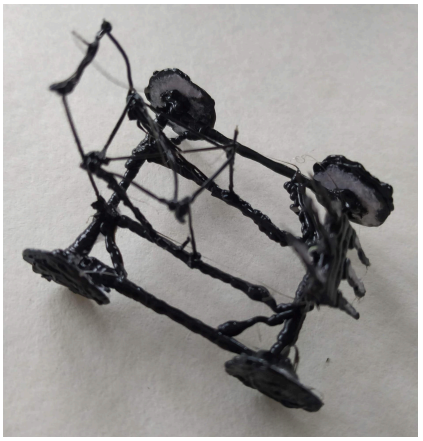
ATTENDANCE

TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		

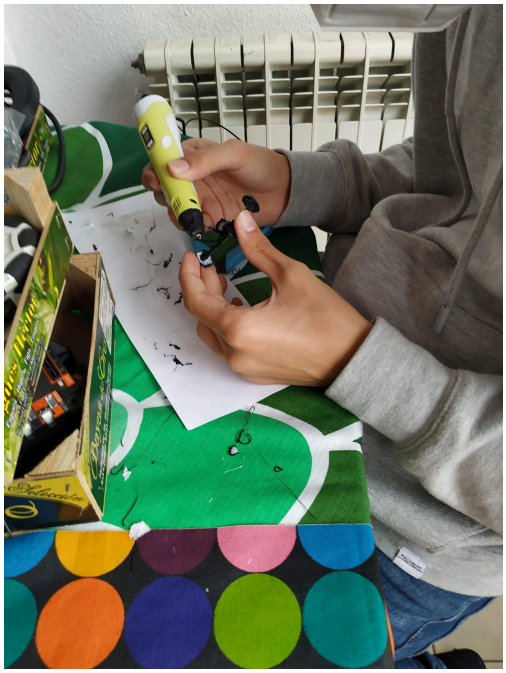
We are very interested from the beginning of the course to be able to have more people who are part of the group, but our city is small and this makes it more difficult to find people interested in these activities. There is a private company that does robotics workshops but for children, that is, from 5-6 years to 12, but not beyond. There are also some City Council houses that are held every Friday, but the people who take part have more interests in 3D printing and not in robotics, and although we have commented on them, they are not interested. We have spoken to the technology teacher in order to let the school know the work we are preparing and, if they find it appropriate, that they can refer someone.



It has been very difficult for us to agree on how each of us sees or imagines what the robot should be like, its projections. Words are often short to explain what we see but we find it difficult to communicate. Therefore, each of us has looked for the way that was easier for him to communicate the image of the robot and together, rethink what are the best solutions, which surely always come from the sum of individual opinions.
That's why everyone worked with a method that was easier for them to explain the image. Pol worked in the most classic way: pencil, paper and ruler. It is a rudimentary but useful method. Eloi needed to work with a marker that worked with PLA and allowed him to create a small scale model. Ferran chooses to work with clay.
Finally, some aspects are worked directly with the 3D program that Eloi mastered thanks to a course that has been done for some time and that allows you to see and evaluate if the possible options are good.



It has been a day of much thinking and little assembling, but it has been worth it.



DATE	WEEK	DURATION
14th October 2020	7	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		

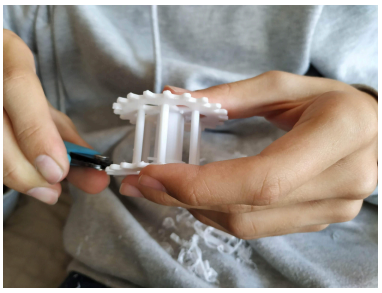
We have different ways of trying to represent what we think, and doing so helps us talk about it and agree.
We've been thinking about how to design caterpillar gear, and how to pick up pieces from the ground. We have started to have the first prototype of how to catch them.

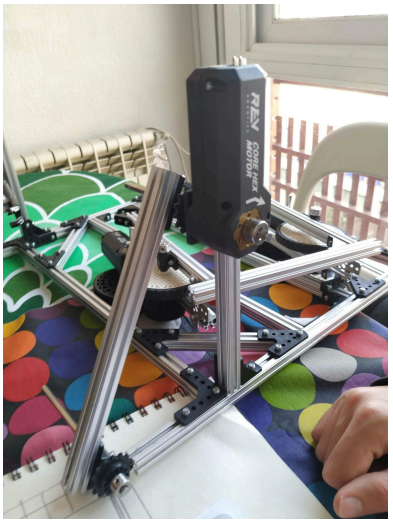
We have been watching this video and we love that sistem:
https://www.youtube.com/watch?v=pncQIxOUdcI

DATE	WEEK	DURATION
21th October 2020	8	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		

We are designing the base structure of the robot, firm and brave so as not to have to repeat it when it has more weight and to prevent it from tipping over in future moves it will have to make.
We have also downloaded the documents of the pieces to be used for the tournament, in order to be able to enter with the material printed in 3d. When printing we had some difficulties and will have to repeat some pieces.
Still, we hold out hope that the tournament will be physical.





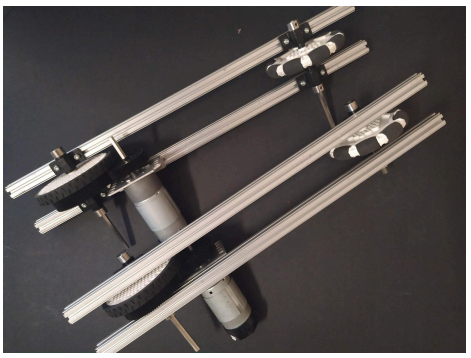
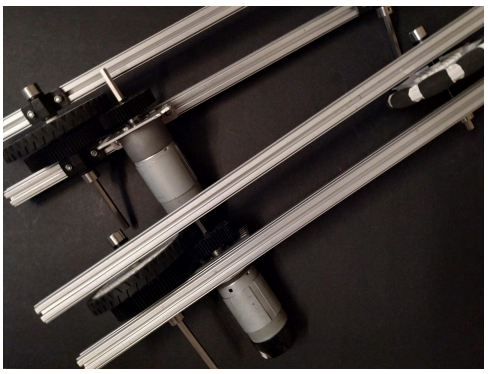
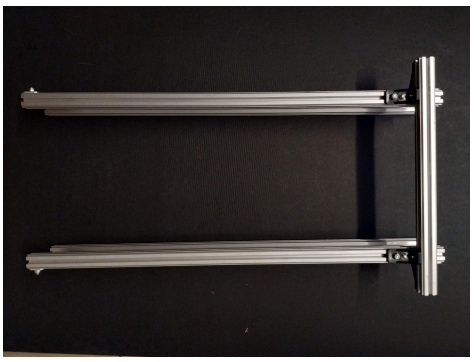
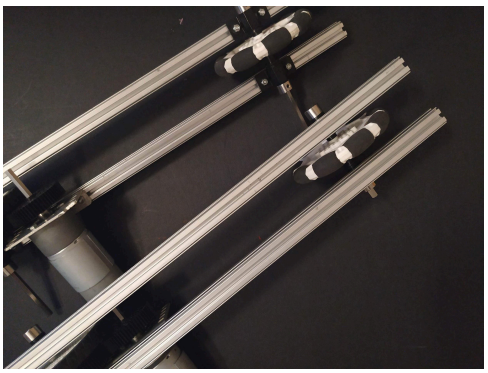
DATE	WEEK	DURATION
28th October 2020	8	3H

ATTENDANCE	
TEAM	MENTOR

X	Eloi Prat	X	Ester Prat
X	Pol Fernández		
X	Ferran Maraña		

We have problems with the hub control because it does not connect and we cannot work on it. We send an email to the company that rented the material to us to try to find some solution.

We've redesigned the shuttle, bringing it closer to the idea we all have in our heads now.

DATE	WEEK	DURATION
4th November 2020	8	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández	X	Narcís Planellas
X	Ferran Maraña		

Today has been the first day we have been with the new monitor, Narcís Planellas.
Eventually, despite the coronavirus, we got a person to mentor us. Still, it's a somewhat special relationship, as it has to be **online.**
After the presentations, we worked in two directions:

- Reinforce the lamb
- Connect the hub to the computer with the program.

DATE	WEEK	DURATION
11th November 2020	9	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández	X	Narcís Planellas
X	Ferran Maraña		
x	Adriel Orteu		

DESCRIPTION OF TASKS

Today Adriel has joined the group!
First we asked Narcís what is the toughest way to do the base and we concluded to put the bart on the rails. Then we joined them and tested the resistance.
Eloi continued making the canyon for the ring. Pol and Ferran finally connected the robot to the tablet, but the program didn't work well and the motors didn't work.

DATE	WEEK	DURATION
18th November 2020	10	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández	X	Narcís Planellas
X	Ferran Maraña		
X	Adriel Orteu		

We try to make the square and the hub work but it is completely impossible.We work to stabilize the shuttle, stabilize the bars and also install engines. Start of the system for collecting hoops.

We have now seen that we do not have enough parts to make the robot we have planned, we will have to go to Girona and take more material in order to finish it, because at the point we are now we are already starting to have problems.

Given how the pandemic is progressing, we have the feeling that the competition will be online but no one has information on this topic.

When the session with Nacis is finished, we decide not to continue working with online tutorials with Narcissus. Somehow, we run out of monitor, but it's not working. It is very difficult to do it this way and we will be left with only Ester, who does another job as a monitor, but does not know the more technical parts. However, we are very happy with your participation and highly value your work.

We are a little sad because right now we are in crisis and we need to be able to overcome it.

DATE	WEEK	DURATION
25th November 2020	11	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adriel Orteu		

We have a meeting with Adrià Garangou, so that he is encouraged to participate in the robot. Today we have a more relaxed and full of jokes session, we didn't work too hard with the robot but it was a fun day.

DATE	WEEK	DURATION
2nd December 2020	12	3H

ATTENDANCE	
TEAM	MENTOR

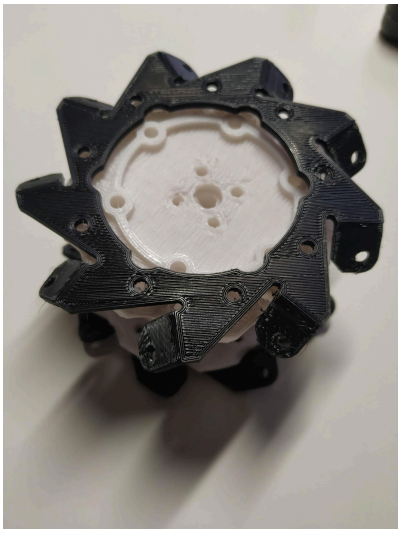
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adriel Orteu		
X	Adrià Garangou		

Ardrià Garangou has become a member of the team! Wellcome !!

In order to overcome the crisis, we decided to do a more thoughtful session in the organization of our calendar and in the planning of the phases that we must have.
We will work from now on with an initial meeting between us, so that everyone knows the work that others are doing or the work that needs to be done in the session.

We are working with the symmetry of the robot and we are missing some pieces that we have not yet been able to find.

We are very interested in testing some wheels that we know exist. However, as we want to save time, we discover them on the THINGIVERSE internet portal and print them out so we can test them. They are very complex to make and slip quite a bit with PLA.

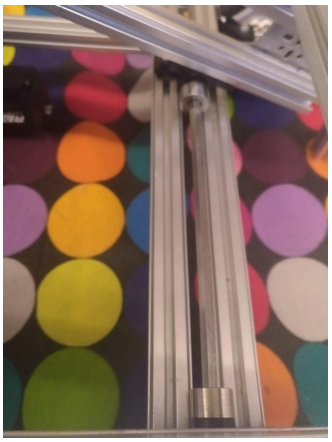



DATE	WEEK	DURATION
9th December 2020	13	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adriel Orteu		
X	Adrià Garangou		

The system is already mounted to attach the shuttle to the base. However, the shuttle is not finished because a specific piece has to be designed and printed, which will take a few days. We establish more defined positions within the group, and Eloi and Pol become directors. We value their knowledge and the need for someone to take more initiative in order to be able to reach the goals we have set.

We also wrote a letter to the parents of the new people who have signed up and started putting together the budget. Ferran will take care these days of asking, by email, for financing from several companies that we know from last year, that know us and that we think can help us a little despite the economic crisis that we have.

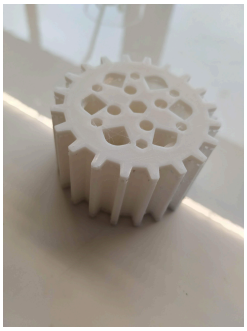
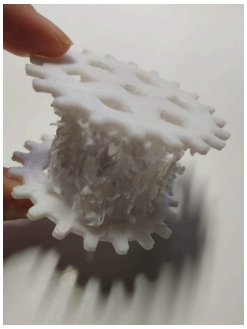


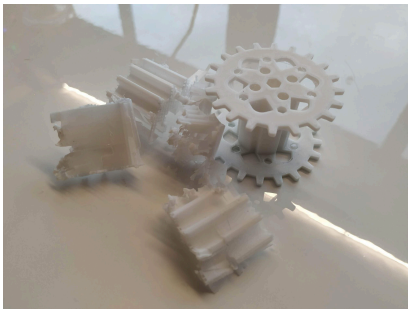
DATE	WEEK	DURATION
16th December 2020	14	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández (CONFINAT)		Narcís Planellas
	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We continue to work with the shuttle gear as it is not careful enough and we need to improve it.

Since we are missing some pieces, we temporarily design them with FUSION and print them so we can work on them. That of 3D printing is a sure paradigm shift, we are living it.



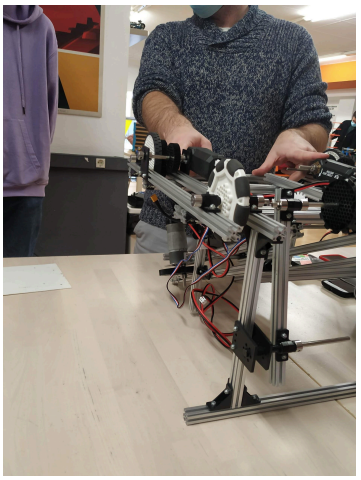
Materials made only for workouts because of displacement difficulties due to coronavirus
During the confinement it is not easy to move to Girona and that is why we have drawn some pieces in 3d to be able to continue riding the robot and we have asked Eloi's father, who is a turner, to make us other pieces with metal in turn. , also essential to be able to continue working.

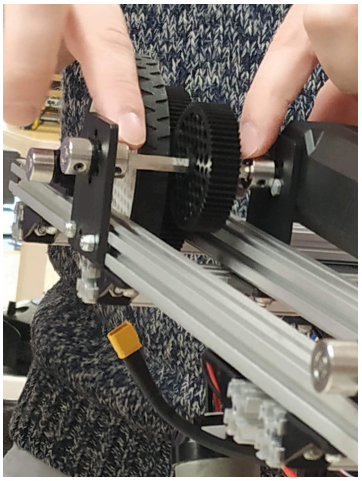

DATE	WEEK	DURATION
23th December 2020	15	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
	Ferran Maraña (CONFINAT)		
	Adrià Garangou		
	Adriel Orteu		

Finally they can go to Girona, because despite the county confinement, being an educational activity, we can take a permit and meet.We see each other for the first time face to face with the monitor, Narcís. Dani asks a lot of questions, trying to help us know how to improve.
We talk about wheels, we look at options, we discard ideas, we have new ones. Ah! And finally we can have more pieces to finish, now yes, the robot as we would like!

This is Pol and Narcís






Mediterranean
Open 2020
VIQC
Excellence
Award
Participating Teams
Elementary
School
Excellence
Award
SPAIN
NATIONAL
CHAMPIONSHIP
2020

DATE	WEEK	DURATION
13th January 2021	16	3H

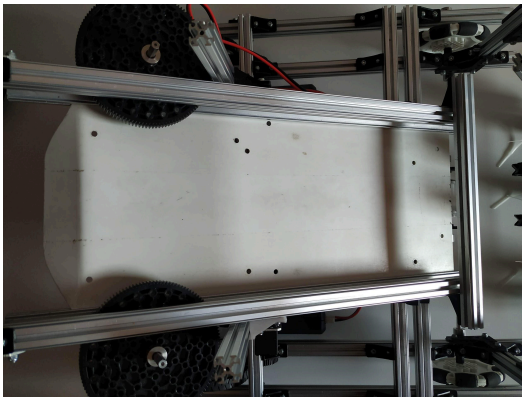
ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
	Ferran Maraña (CONFINED)		
X	Adrià Garangou		
X	Adriel Orteu		

We talk to the rest of the team about the ideas and doubts that have come out of Girona, to share it and to decide which path to take.

DATE	WEEK	DURATION
20th January 2021	17	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
	Ferran Maraña (CONFINED)		
X	Adrià Garangou		
X	Adriel Orteu		

We continue to work with the ramp. In Girona they gave us plastic that can be used according to the regulations and that will help us to be able to work a lot to size.
We have to be very careful with the material we have because there is only one chance of doing it right or we will run out of material.

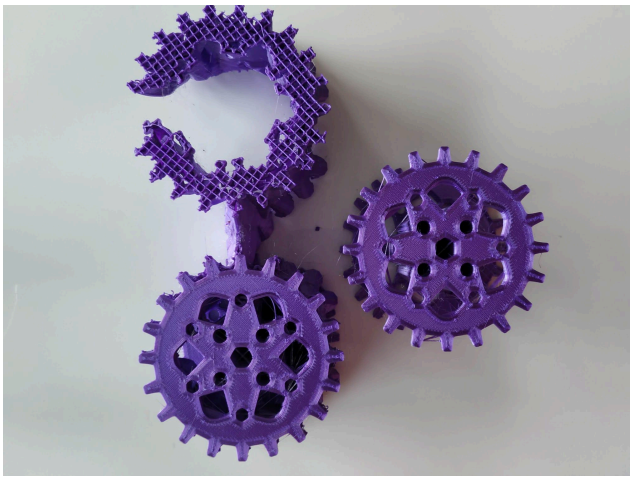


That's why we design a system of tests and tests by making templates.

DATE	WEEK	DURATION
27th of January 2021	18	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We continued to work with the ramp. We



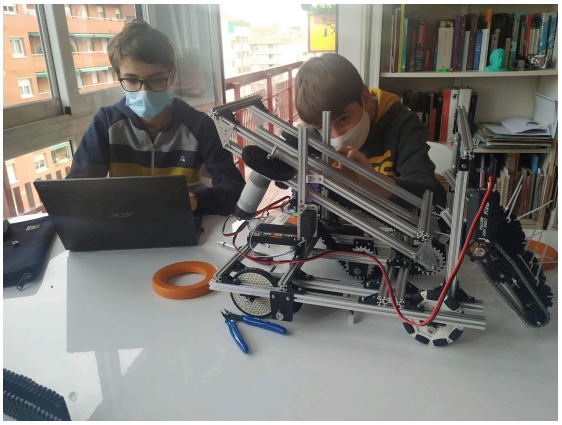
are working with materials that allow us to cut it to size and be able to be precise, but we have ruled out in this section 3d printing.
The printed pieces that have to serve as gears have had some problems with the type of filament, much more showy but not as sturdy. We will repeat them and redesign them again with fusion to try to make them fit more in the caterpillar.

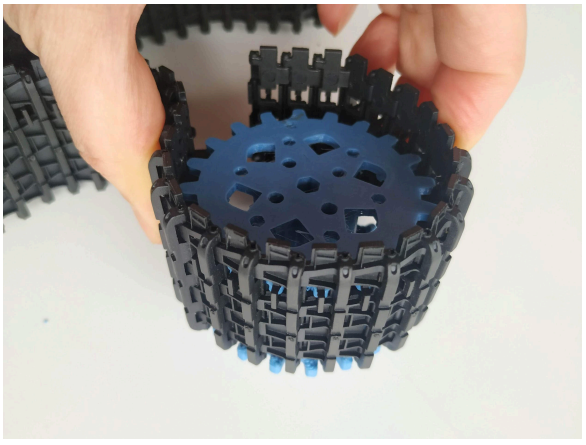
DATE	WEEK	DURATION
3rd February 2021	19	3H

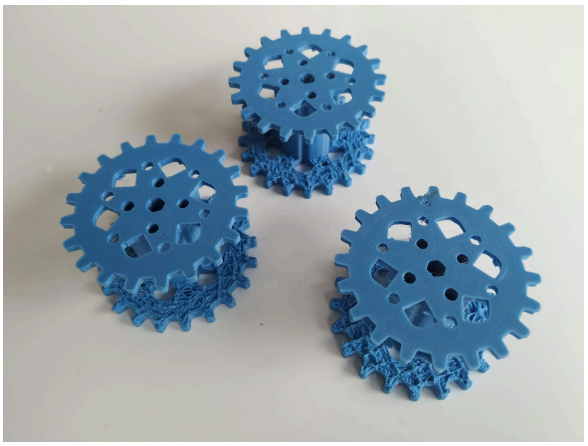
ATTENDANCE

TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

Ferran is working with the communication items, like how to prepare the external costume of the robot, which is going to be about Fundacio Mona.
Adrià is starting to work with the presentation and working also on the engineering project.
Eloi is always redesigning the 3d pieces, trying to get the right ones, the perfect ones, changing extruder, time, temperatures, etc.







DATE	WEEK	DURATION
10th February 2021	20	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We work on the construction of the material to be used for online competition.
We collected cartons throughout the week and split into two teams to do both parts.

DATE	WEEK	DURATION
17th February 2021	21	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

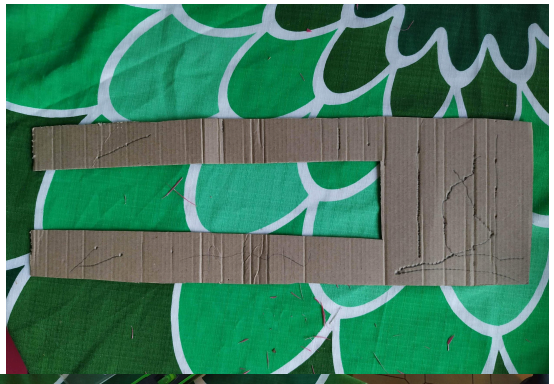
Adriel i Eloi are the 3d workers. They spend a lot of time doing the robot in the fusion. That's a way to see the ideas before they are done and allow to all the team to coment and really see the changes.

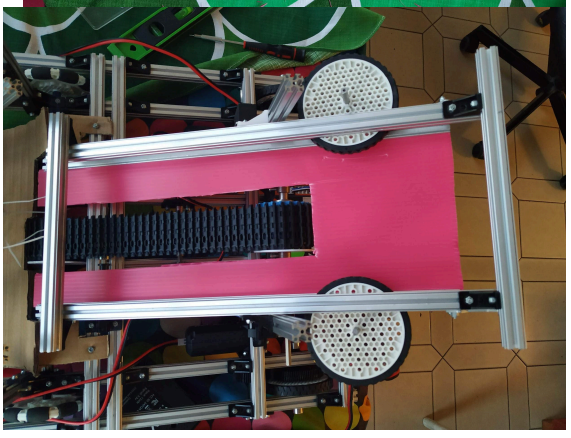
They have don a very goog job!

DATE	WEEK	DURATION
24th February 2021	22	3H

ATTENDANCE

TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

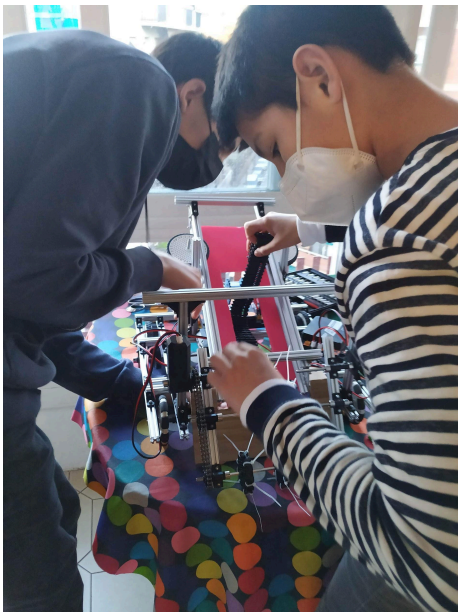




DATE	WEEK	DURATION
3rd of March of 2021	23	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

Working on it! Trying that everything is ok.



DATE	WEEK	DURATION
10th of March of 2021	24	3H

ATTENDANCE	
TEAM	MENTOR

-	Eloi Prat	X	Ester Prat
-	Pol Fernández		Narcís Planellas
-	Ferran Maraña		
-	Adrià Garangou		
-	Adriel Orteu		

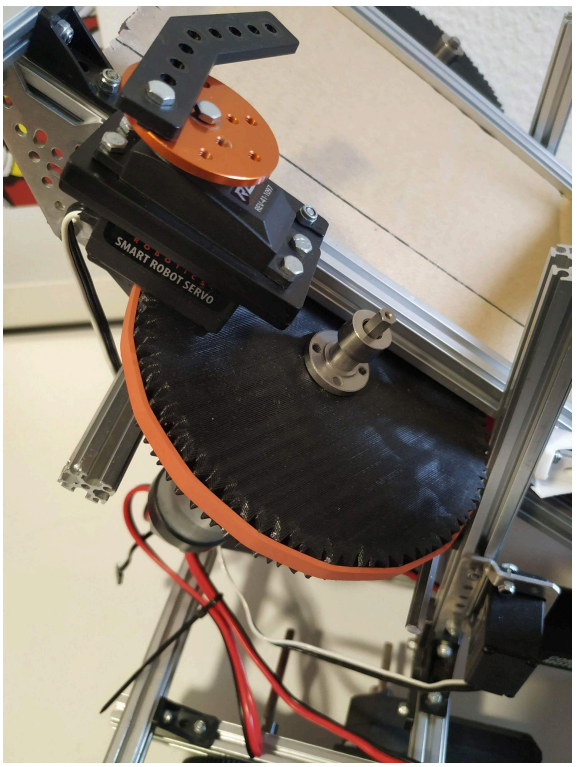
No session because of the CORONAVIRUS alarm.

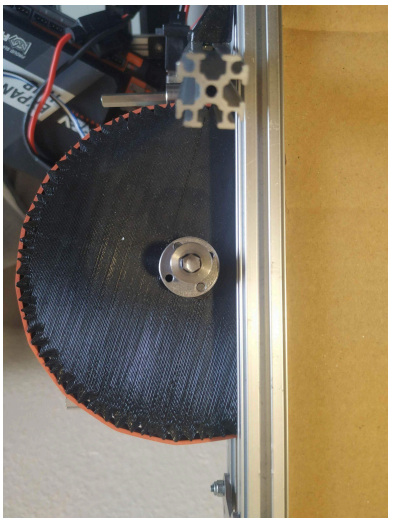
DATE	WEEK	DURATION
17th of March of 2021	25	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We bought two mobile phones to participate in the competition, because INNOVA can not let theirs because they need them. That's the moment also to buy some plugs for connections and make sure we don't leave anything on a technical level that is a last minute surprise and makes us run in the final sessions.
We need a cable, which we don't have and which we have to look for in Girona. And we need again to ask for another expansion hub. Luckily, Ferran's mother has to go and she can send it to us. Thank you so much!
Eloi's oncle is going to help us with a linoleum, a type of material used by her daughter, which is a dancer to rehearse and which will go very well for us to avoid the bumps of the floor tiles.We have to take care of it and we can't drill it, but we can mark it with painter's tape to mark the areas where the field is distributed.
Finally we designed new shuttle wheels.

We visit for the first time the place where we are going to have the competition, because happily Eloi's grandmother and grandfather are vaccinated!





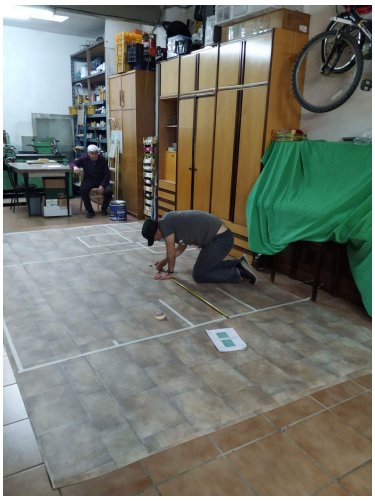
DATE	WEEK	DURATION
24th of March of 2021	26	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas

X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We spent all the session preparing the camp. Luckily, Eloi's dad and Eloi's Grandpa help us a little bit.

Despite a lot of vigilance, the grandfather participated in the creation of the field fence and because of his age, he did not move properly and fell.
Luckily, he only hit his head, hip and leg, but he didn't go any further. He felt very guilty but we told him we were very happy with his help.
He will go to the doctor to check the leg injury. Our monitor says it's the most intergenerational project she's ever done!

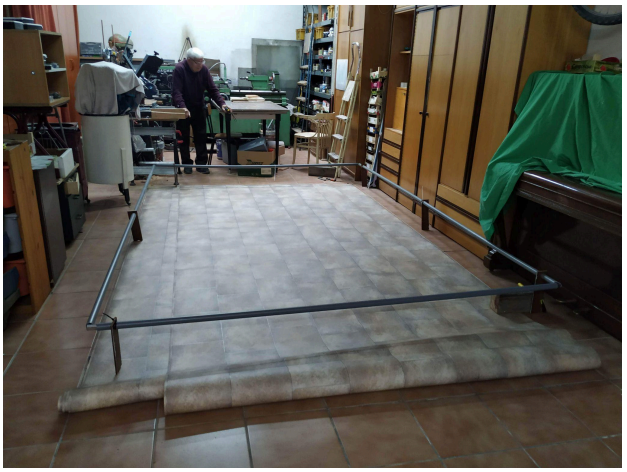


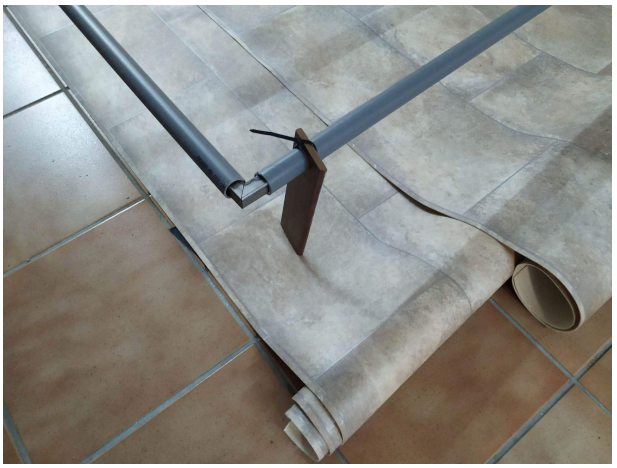
DATE	WEEK	DURATION
7th of April of 2021	27	3H

ATTENDANCE			
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
	Ferran Maraña		
	Adrià Garangou		

	Adriel Orteu		

We spend all the afternoon working in the camp, trying to find the best way to create with used materials the walls that must delimit the field. With plastic tubes from the workshop and wood to hold at the end we managed to make the structure, on which we placed the cardboard.
Grandpa has been prescribed antibiotics because the wound did not progress well, but now he is better.





DATE	WEEK	DURATION
14th of April of 2021	28	3H

ATTENDANCE			
TEAM		MENTOR	
	Eloi Prat	X	Ester Prat

X	Pol Fernández		Narcís Planellas
	Ferran Maraña		
	Adrià Garangou		
	Adriel Orteu		

Most of the team can not go to the garage because of the coronavirus. So Pol, the only one that is not confined, works alone programming it.

DATE	WEEK	DURATION
21th of April of 2021	29	3H

ATTENDANCE			
TEAM		MENTOR	
	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
	Ferran Maraña		
	Adrià Garangou		
	Adriel Orteu		

Second day with most part of the team confined, so Pol works all the afternoon alone, programming the robot.


DATE	WEEK	DURATION
28th of April of 2021	30	3H

ATTENDANCE

TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We continued the Autonomous programs in the Control Hub (Computer), but the servos weren't working so we left some blank spaces on it. We also fixed some bars of the robot that weren't placed in the right place.

DATE	WEEK	DURATION
30th of April of 2021	30	3H

ATTENDANCE

TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		

X	Adrià Garangou		
X	Adriel Orteu		

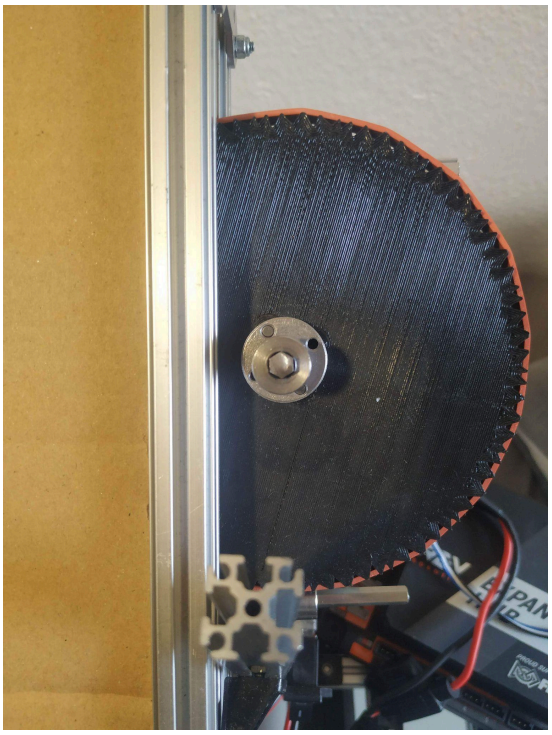
We finished some of the programs in the control hub (Computer), and we finally figured out how to control the servos. We changed one of the servos that didn't work and we started passing the final programs to the mobile phone so that we can actually use them.
But when we tried them we found that the motors didn't go at the same velocity, so we had to change the program a bit for it to work properly.
We finished the initiation part of the Autonomous and the first case of it. Also, a piece broke so we changed it for a new one.

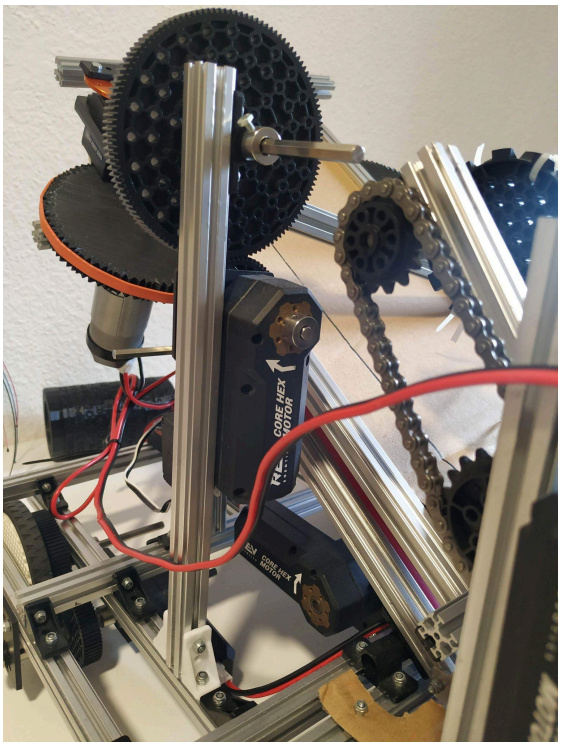
DATE	WEEK	DURATION
5th of May of 2021	31	3H

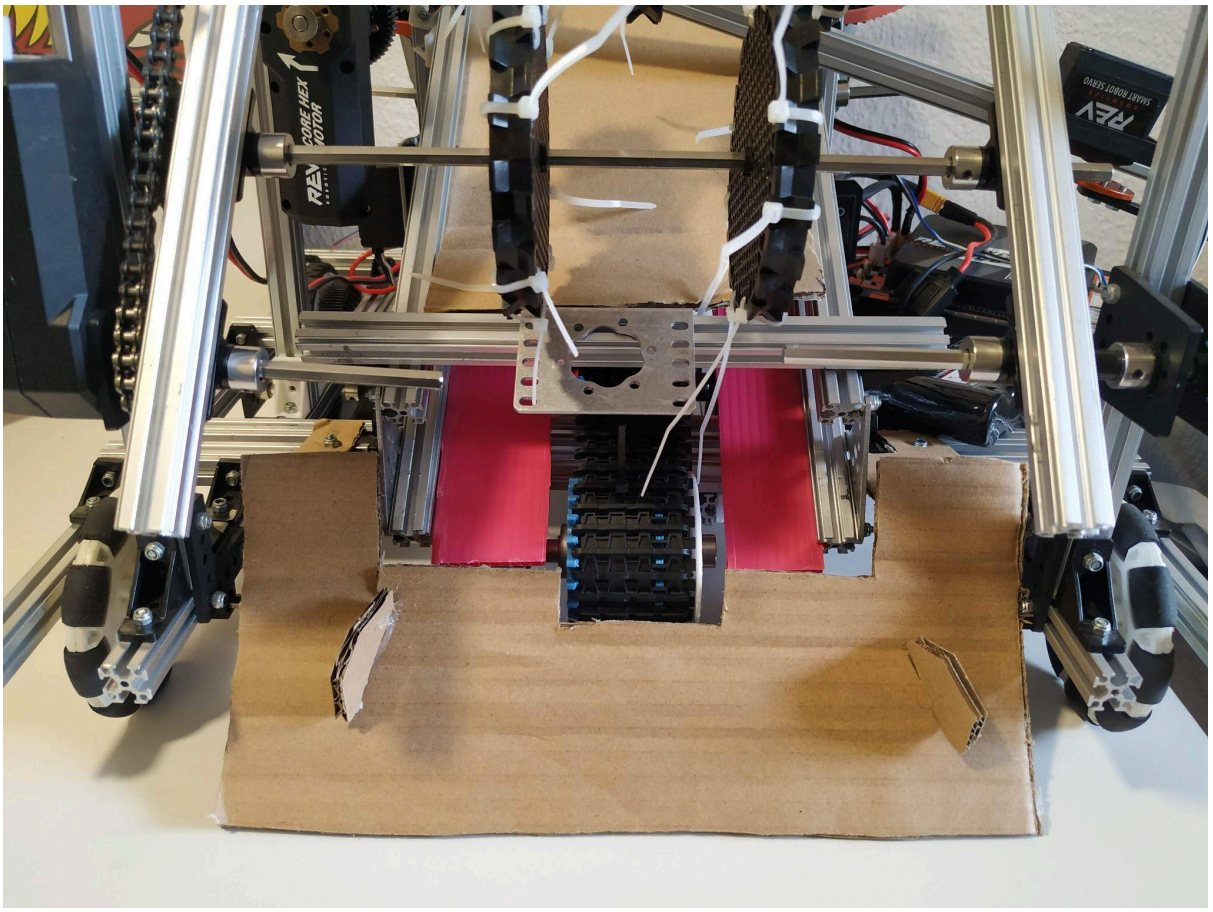
ATTENDANCE

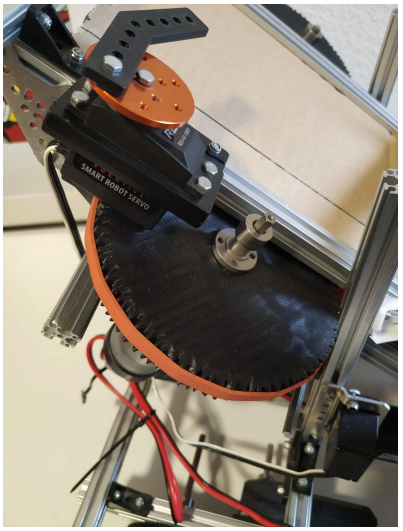
TEAM		MENTOR	
X	Eloi Prat	X	Ester Prat
X	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
X	Adrià Garangou		
X	Adriel Orteu		

We finished some of the programs in the control hub (Computer), and we finally figured out how to control the servos. We changed one of the servos that didn't work and we started passing the final programs to the mobile phone so that we can actually use them.
But when we tried them we found that the motors didn't go at the same velocity, so we had to change the program a bit for it to work properly.
We finished the initiation part of the Autonomous and the first case of it. Also, a piece broke so we changed it for a new one.
Finaly, we have prepared stuffed animals that the monkey foundation has given us to make a presentation with a touch of humor.

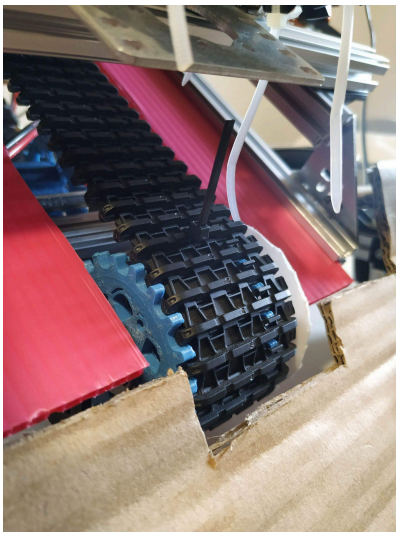



CORE HEX MOTOR


CORE HEX MOTOR
REV
SMART ROBOT SERVO


SMART ROBOT SERVO


REV
ROBOTICS
SMART ROBOT SERVO



DATE	WEEK	DURATION
12h of May of 2021	31	3H

ATTENDANCE			
TEAM		MENTOR	
	Eloi Prat	X	Ester Prat
	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
	Adrià Garangou		
	Adriel Orteu		

Ferran spent all the session training the commander and improving his scores with the robot.

DATE	WEEK	DURATION
19h of May of 2021	31	3H

ATTENDANCE			
TEAM		MENTOR	
	Eloi Prat	X	Ester Prat
	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
	Adrià Garangou		
	Adriel Orteu		

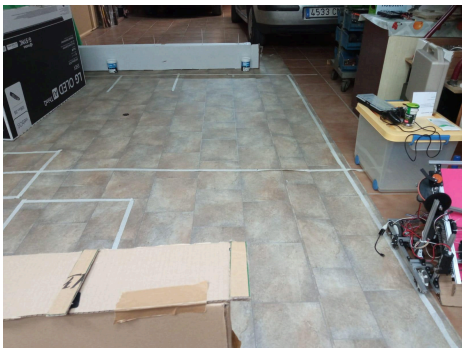
We have done the presentation at school this week and Josep, technology teacher, congratulated us for the work done. Despite the covid mesures, all the team has done the english presentation in the two classes of 3er of ESO. We are proud of it, even though we forget to take photos! :-(

DATE	WEEK	DURATION
26th of May of 2021	31	3H

ATTENDANCE

TEAM		MENTOR	
	Eloi Prat	X	Ester Prat
	Pol Fernández		Narcís Planellas
X	Ferran Maraña		
	Adrià Garangou		
	Adriel Orteu		

Our last day before the competition! Finishing the last design issues of the camp.



We are ready and happy to be here!!
Participating has already been
a very good experience
Thanks!