

## Chairman's Award - Team 1156

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2021 - Team 1156

**Team Number**

1156

**Team Nickname**

Under Control

**Team Location**

Novo Hamburgo, Rio Grande do Sul - Brazil

**Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.**

The *FIRST* program impact on our team members is remarkably powerful. In the past 3 years, 88% of our alumni have engaged in college prep programs or college, & 70% of them have chosen STEAM programs, while our school's average is 57%. Several alumni members went on to work at world-class companies, such as John Deere, Riot Games, Weatherford & SAP, or started their own companies in STEAM fields. Moreover, 66% of them still volunteer as judges and referees in *FIRST* events or act as *FIRST* mentors.

**Describe your community along with how your team addresses its unique opportunities and circumstances.**

Brazil faces difficulties regarding the accessibility of science & technology. E.g., a KoP is taxed at about 70% over tariffs, costing \$3,459 in the US & around R\$40,000 (~\$7560) in Brazil: a remote cost for a place where the minimum wage is U\$2.420/year. As students who live in a technology hub, we're privileged to have an active STEAM education. We use this privilege to spread the value of STEAM & give other students new opportunities by starting teams & introducing robotics into their lives.

**Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?**

Our team has always strived for the most efficient way to spread the *FIRST* message. For a better interaction within our *FIRST* teams' community, we've created the Comunidade de Equipes *FIRST* Brasil movement to create a bond between Brazilian teams, having reached 133 teams with the project. When it comes directly to 1156, we've reached 12M+ people through events, demos & campaigns on social & local media, appearing twice on a TV series about robotics, incentivizing kids to join *FIRST*.

**Please provide specific examples of how your team members act as role models within the *FIRST* community with emphasis on the past 3 years.**

Our team members have created a helpline to answer other teams' questions, with 400+ messages exchanged to assist 6 teams during the 2020/2021 season. We've been responsible for creating material for all SESI FLL training in the country since 2018, with team members volunteering yearly in all of our state's and national *FIRST* events. In 2019 we started & mentored 4 FRC teams. 2 of them ended up being Rookie All Star winners at the World Championship, creating a cascade effect of inspiration.

**Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.**

In 2019 we created the UnderBinars project to mentor teams with weekly seminars about topics in *FIRST* categories, providing 20 hours of content to 19 FRC teams since then. In the same year, we ran the 1st National FTC tournament in Brazil, in which all 16 participating FTC teams were started by us. This process was repeated with 19 other teams for the 2020 season. Since 2018 we've assisted 355, mentored 44 & started 39 *FIRST* teams. We developed SOP documents that were handed to 130 *FIRST* teams.

**Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?**

We don't limit efforts to promote quality STEAM education. We've run a robotics competition for 480 kids at Olimpíada do Conhecimento, the largest science fair in LATAM, with 46,000+ visitors. In 2021 we sent 60 Arduino kits to 5 BR states to quarantined students through our Robots for All project. Yearly we run the largest robotics event in our state, impacting 2,200+ students, & return 170+ hours of community volunteering in Child Cancer Institutes, hospitals & underprivileged schools.

**Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years**

Lasting partnerships result in great success, & ours with John Deere relies on this principle. They've been sponsoring us since 2016, & thenceforth we mentor their FLL sponsored teams. We also have a solid partnership with SESI, the BR *FIRST* operator, which we've assisted in implementing FRC & FTC in Brazil by starting 38 teams. Outside Brazil, we've built a crucial partnership with Plan Ceibal, the Uruguay *FIRST* operator, who we've assisted to implement *FIRST* & now we support its yearly events.

**Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.**

To reduce the lack of female representation inside our team, we created the Girls In Control project in 2019, which focuses on introducing women to STEAM fields and encouraging them to join these areas. As a result, the female representation inside 1156 doubled from 15% to 38%. Moreover, we try to promote social equity in our community by running workshops about robotics and its principles in underprivileged schools, reaching kids & promoting their first-ever access to STEAM.

**Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future**

Planning the future means making conscious decisions in the present. Considering it, we've created the Repio 2.0 project, offering preparatory STEAM courses to encourage students from our school to develop soft skills, discover new talents and join 1156. Furthermore, we've developed a sustainable economic plan based on fundraising events & sponsors resources. It allowed us to participate in 2 *FIRST* regionals & in the *FIRST* Championship every year in the past 6 years with a low cost per student.

**Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years**

To keep a close relationship with our sponsors, our team sends them monthly reports about our development. We helped to implement the John Deere Inspire program in Brazil so JD could sponsor BR FLL teams. Training & lectures are provided by us to teach & encourage FRC rookie teams to use NI LabVIEW. Alongside StemOS, we produce training materials and run mentorships around the country. To recruit new sponsors, we use our broad network to submit grants & contact companies in events.

**Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.**

With a great number of students comes great responsibility. In the past 3 years, our team has grown significantly, & to deal with it, we've been changing our leadership structures, electing students to represent our team areas & become references in our team. However, most of them weren't engaged in the team activities due to the COVID-19 pandemic. To allow their independence, we focused on ways to encourage their self-engagement with Hackathons and technical workshops during the off season.

**Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.**

One of our main goals is to have an FRC regional in Brazil. To do so, we've created 4 FRC teams, ran & hosted an off season event and will support another one by training 15 pre-rookie teams. Another major goal is to globalize *FIRST*. So we've supported the implementation of *FIRST* in Uruguay & its Open FLL event in 2019, and created the Worldwide project alongside team 2526, assisting FLL & FTC teams through developed scalable curriculums translated into 4 languages.

**Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.**

Alongside team 1772, we hosted the first South American FRC event in 2019 in more than 10 years, Off Season Brazil, which counted with 10 out of the 16 Brazilian FRC teams. SESI representatives attended the event to learn how to run an offseason event; a key moment to start a huge FRC consolidation in Brazil. SESI will now run the second offseason event in the country with our support in 2021 & 15 pre-rookie teams will be mentored by us through our UnderBinars project for this event.

## Essay

Welcome to the 2021 FIRST Cup! In this championship, you'll see how team Under Control 1156 scores goals in matches during the seasons. We'll be accompanying them on their journey at this event. In every match, there's a different opponent and a different challenge to face. In this game, every match won is a goal accomplished and the scores are the great actions done by the team. Ladies and gentlemen, LET'S GET READY TO RUMBLE!

### THE TEAM

Under Control has been a highlight in the competition, having 19 years of history. The team from Novo Hamburgo, Brazil, has 27 student members & 10 mentors. It's important to mention they've already passed through the qualifiers with an incredible performance. Let's see how they'll manage to face opponents with Gracious Professionalism & Coopertition.

### ROUND OF 16: Community work

The round of 16 is all about the community projects and volunteering, being crucial to keeping a well-established partnership with the community. 1156 has to tackle the lack of resources in public schools, aiming to increase the STEAM awareness, making robotics a common theme in schools' curricula. Let's see how the match unfolded:

To incentivize robotics competitions in our community, since 2014 we've been running the largest robotics event in our state, the Marist Educational Robotics Festival, with 2,500+ participants yearly. We also volunteer as judges & showcase our robot in big technology events in our state, such as the Brazilian Robotics Olympics with 540+ participants per regional; the POA Geek Week event with 10,000+ visitors; & the Kids Run event, presenting our robots yearly & running interactive activities to 340+ kids.

When it comes to our community, no curve balls can prevent us from providing a good STEAM education for kids & teens. We've impacted 430+ kids in our community by volunteering in Child Cancer institutes, hospitals, underprivileged schools & other institutes, providing these children with their first contact with STEAM & robotics. And that's the first score for Team Under Control!

In 2019 our team got the ball rolling on creating the Girls In Control project to encourage women to join STEAM. They promote scholarships, technology events, stories of important women on social media & sell t-shirt kits to raise money for the team. As a future initiative, they wrote Girls In Control: Women who revolutionized Science and Technology, a storybook about important historical women in STEAM, designed to use during our workshops to encourage girls to overcome structural barriers.

Even during the pandemic, our team didn't drop the gloves for our community. We've started a campaign to families in need, resulting in 1.5+ tons of food donated. We've also produced 658 PPE's helping 18 hospitals & NGO's in our state to face this pandemic collectively as a big team.

With the creation of the Robots for All project in partnership with our sponsor stemOS, we sent 60 low-cost robotics Kits & didactic video material, produced by us, to quarantined students all over Brazil. The project has reached 5 states & involved 5 FIRST teams as ambassadors, making it scalable, since teams can reuse it, to create new actions bringing them on the playing field with us.

Even at home, our team participated in pandemic themed hackathons, such as the NASA Space Apps COVID-19 Challenge with 15,000+ participants from 150 countries, in which 6 of our members became global finalists. And that's a score, leading the team to win this match!

### QUARTERFINALS: Creating, Mentoring & Assisting teams

Let's head to the quarterfinals! In this part of the championship, we'll know more about the team's efforts & initiatives to create, mentor & assist FIRST teams, establishing all categories in Brazil. The team has to tackle the financial difficulties to start Brazilian FIRST teams and engage in advocacy matters with the FIRST operator in the country. Let's see their performance:

As the first S. American team to have a full progression from FLL to FRC, we know the importance of FIRST categories for the youth. In Brazil, however, all FLL teams used to have their journey interrupted after age 16. That's when we entered the game to change this situation through FTC - a formerly non-existent category in our country - & FRC.

We began to work alongside SESI, Brazil's FIRST operator, looking for a strong partner for this match. Our team members provided a guided tour to SESI representatives at the 2018 Championship in Houston to introduce them to both categories. As a result, they passed the ball to us, giving the team the mission to start 16 FTC & 4 FRC teams in 2019, accomplished by training their members. With the partnership with SESI, no dribbles were enough to break our defence from making FIRST a reality in Brazil. And that's a huge score!

In 2019 we faced the goal & started more 19 FTC teams, training all of their coaches, totalling 39 teams started, by providing support materials & registering them in the FIRST system. These two opportunities gave us a head start in the match.

We developed the UnderBinars project, which consists of weekly Q&A seminars regarding FRC. It was first applied in 4 FRC teams we started & mentored during their 2019 rookie season. In 2020/21, we repeated this mentoring process with 15 new pre-rookie teams.

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In 2020, we created the FIRST Team's Community Brazil an online movement to connect our community. Inside this project, we've developed the Brazil FIRST Week seminar, consisting of a whole week of webinars about FIRST & robotics in general with the participation of several important guests, reaching 1,100+ people. Being a huge score with our Brazilian & worldwide FIRST teams community!

### SEMI-FINALS: Great events

We're getting closer to the end of the FIRST Cup! The Semi-Finals are focused on the huge events in Brazil. This is an important part of the competition to measure the team's impact on a larger scale, tackling dilemmas to support & promote science & technology events. Will Team Under Control be able to qualify for the finals? Let's find out:

In 2018 we assisted in the organization of the Olimpíada do Conhecimento event, the largest science fair in Latin America, to run a robotics competition for 480 kids where we invited team 6404 to run an FRC demonstration with us, for 46,000+ visitors.

A year later, to progress on establishing FRC in Brazil, we ran & hosted the first South American FRC event in 10 years, Off Season Brazil, alongside team 1772. During the 2-days-event, FRC workshops & awards evaluations were conducted, to acknowledge all team's work inside the Brazilian FIRST community. Beyond leading the organizational committee, our members were the event judges & referees, counting with 66 1156's volunteers. The event included 9 Brazilian FRC teams - two of them being rookies - that travelled 4.4k+ miles to attend the event, along with 2 FLL teams & 3 FTC teams responsible for running demonstrations to a public of 3,000+ people, who were introduced to FIRST & experienced what it's like to be in an FRC Event. And that's a score!

As a result of our quarterfinals, in 2019 we ran the first Brazilian FTC National Tournament, alongside SESI & the initial 16 FTC teams, finally establishing FTC in our country. Due to our work, we received a good pass. In 2020 SESI allowed us to run the 2nd FTC National Tournament with 32 teams & an FRC demonstration with our Deep Space robot, Valkyrie, introducing FRC to 20,000+ people.

In both events, our members represented the majority of volunteers, being responsible for training all the judges attending the events through training & material created by us. And this, ladies and gentlemen, places Team Under Control at the Finals!

### FINALS: Multinational Actions

Team Under Control is so close to winning the FIRST Cup, but it's not over yet! This stage of the competition is based on Multinational Actions, where the team needs to tackle barriers to succeed. Let's see how they performed:

Until 2016, Uruguay had no access to FIRST, and our team wouldn't miss this goal to implement & spread its message in a new country. Plan Ceibal, the Technological Education Governmental Program in Uruguay, asked for our help to run the FLL program there. This created a strong bond between us, creating 13 new FLL teams & the 1st FIRST Event in their country. Now, we volunteer in their events yearly, such as at the Open FLL 2019, the first FLL international tournament in Latin America, in which we were judges & assisted in the organizational committee, reaching 7,000 students from 25 countries. We officially passed the ball to Uruguay, who due to all of our support & training, was able to implement FIRST in Argentina, Paraguay, Honduras, Ecuador, Guatemala, Colombia & Chile, creating a cascade effect that has led us to another huge score!

In 2019, alongside team 2526, we've carried the ball to assist new teams with the WorldWide project, by developing FTC & FLL scalable curricula translated to 4 languages in partnership with teams from 5 countries, taking our message worldwide. We also handed it to 100 FLL teams at the Brazilian FIRST National event to assist their progression to FTC. And that's another amazing score! Ladies and gentlemen, we have a winner!

### SEASON RECAP:

During this FIRST Cup, we've attained incredible scores. In the last 3 years, we:

Started 39, mentored 44 & assisted 355 FIRST teams;

Attended 18 FIRST events;

Travelled 19,533 person-miles to assist & mentor FIRST teams;

Reached 12M+ people through TV, newspapers & social media;

Reached 14 countries;

Directly involved 130,950+ people with FIRST.

The great things can't be measured, such as the impact we had on other people's lives, through inspiration & spreading the FIRST message. For the thousands in attendance & the millions watching around the world, don't look at the ending of this tournament as a closing chapter, but rather as a sequel of a game our team started 19 years ago. Because THE GAME MUST GO ON!