

ROULT

TEAM 4403

**Business Plan for FISCAL YEAR
2013**

ITESM CAMPUS LAGUNA

Paseo del Tecnológico 751.
Ampliación La Rosita.
Torreón, Coahuila, México.
Zip Code 27250

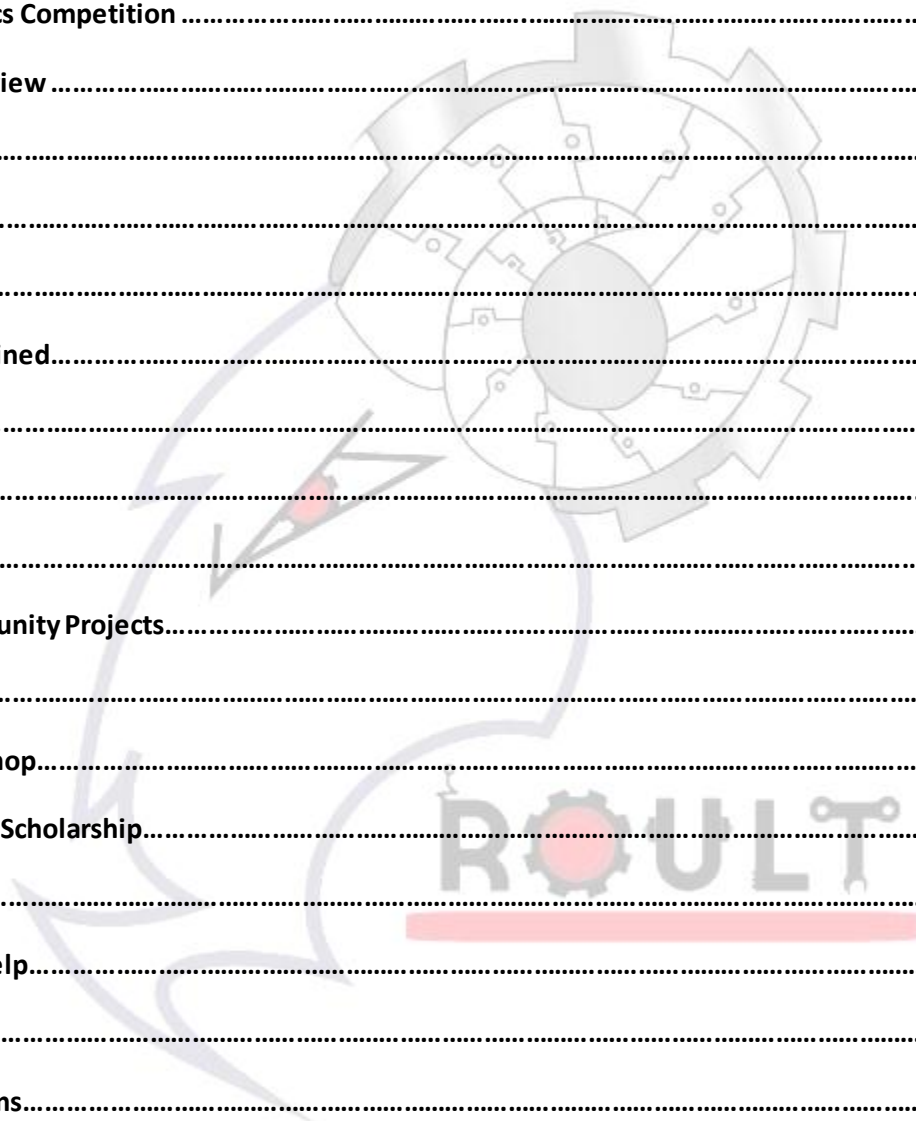
Twitter: @roultteam

Facebook: <http://www.facebook.com/roult>

For more information go to:
<http://www.roult.com>

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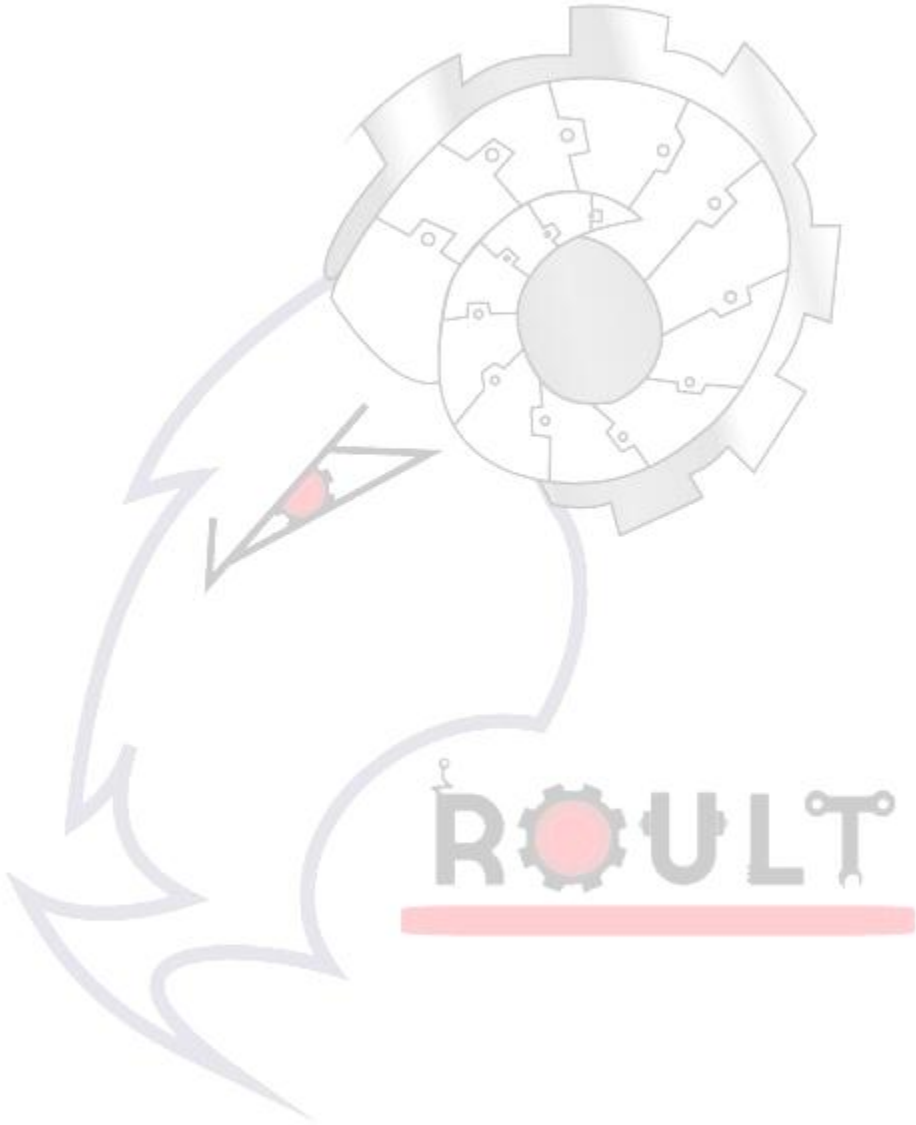
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Executive Summary

Mission Statement:

ROULT team 4403 is a recipient, holder, and transmitter of knowledge. The members of ROULT believe that there is an underlying skill that goes beyond the acquisition and application of technical expertise. It implies a love for discovery, an impulse for the expression of curiosity, and a thirst for precise understanding and total comprehension. ROULT's members seek to apply this gift to all spheres of work, whether they are construction, marketing, planning, or designing.

Team Start Date and brief history:

ROULT started on December 9th 2011. ROULT was founded in 2012 by students and teachers studying at ITESM Laguna Campus, who were enrolled in the robotics workshop. The team members were invited by MET MEX PEÑOLES © to participate in FIRST Robotics Competition.

Founders:

- **Alejandro Garcia:** Information technologies headmaster at the School of Engineers belonging to ITESM Campus Laguna.
- **Cristina Fuentes:** High school principal at ITESM Campus Laguna.
- **Miriam Nassar:** Math headmaster at ITESM Campus Laguna High School
- **Fernando Alanis:** MET MEX PEÑOLES © mentor.
- **Amparo Rodriguez:** MET MEX PEÑOLES © mentor.

2012 founding Generation:

- 27 ITESM Laguna High School students
- 2 mentors from ITESM Laguna high school
- 2 mentors from our sponsor MET MEX PEÑOLES ©



Team's Location

The team is to be found at ITESM Campus Laguna. Our high school is located at Paseo del Tecnológico 751. Ampliacion La Rosita in the city of Torreon, Coahuila, in Mexico.

Main Sponsors

Sponsor Name	Main Activity
MET MEX PEÑALES ©	Metallurgy
NOVAPAK	Plastic Wrapping
MUMA	Meat processing
Monterrey Institute of Technology and Higher Education	Education and technology
MECCANO	Technological designing
CIROTEC	Equipment manufacturing
Monte Olimpo	Metal and Replaceable pieces distributor

Awards won in past FIRST competitions:

FRC Regional at Manchester, New Hampshire 2012

- ✓ Rookie All Star Award
- ✓ Highest Rookie Seed Award
- ✓ Coopertition Award



Team Plans for 2013:

As the team has now passed the rookie stage, many new challenges have come up. There are many areas in which to improve, and there's also expertise which can be taken from last year's veterans. ROULT'S objectives for 2013 are perfecting last year's designing and manufacturing processes, optimizing time and resources, and entering new fields of work such as community outreach, massive marketing, electronic media coverage, financial planning, and the diffusion of FIRST principles through our team members into our community.

2013 team:

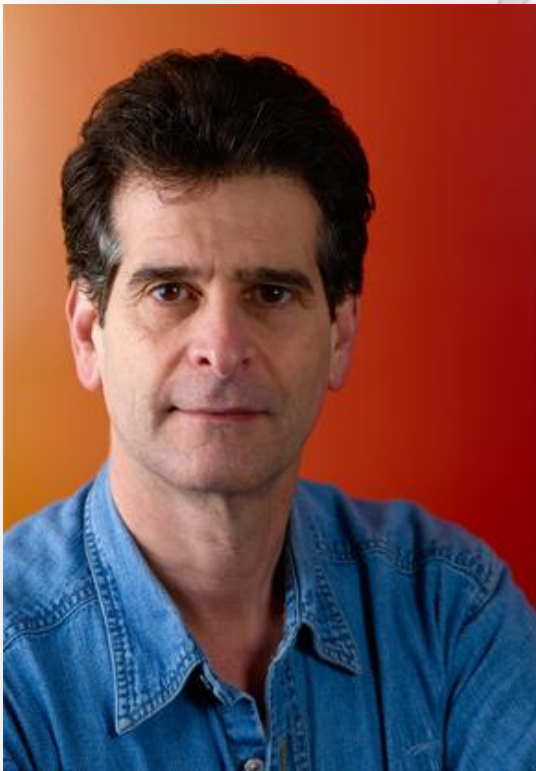
- 26 ITESM high school students
- 2 mentors from ITESM Laguna high school
- 2 mentors from our sponsor MET MEX PEÑALES ©
- 2 mentors from ITESM engineering school



FIRST AND ITS MISSION

FIRST was founded in 1989 to inspire young people's interest and participation in science and technology. FIRST designs accessible, innovative programs that motivate young people to pursue education and career opportunities in science, technology, engineering, and math, while building self-confidence, knowledge, and life skills.

FIRST's mission is to inspire young people to be science and technology leaders, by engaging them in exciting mentor-based programs that build science, engineering and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.



"To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders."

-Dean Kamen, Founder of FIRST

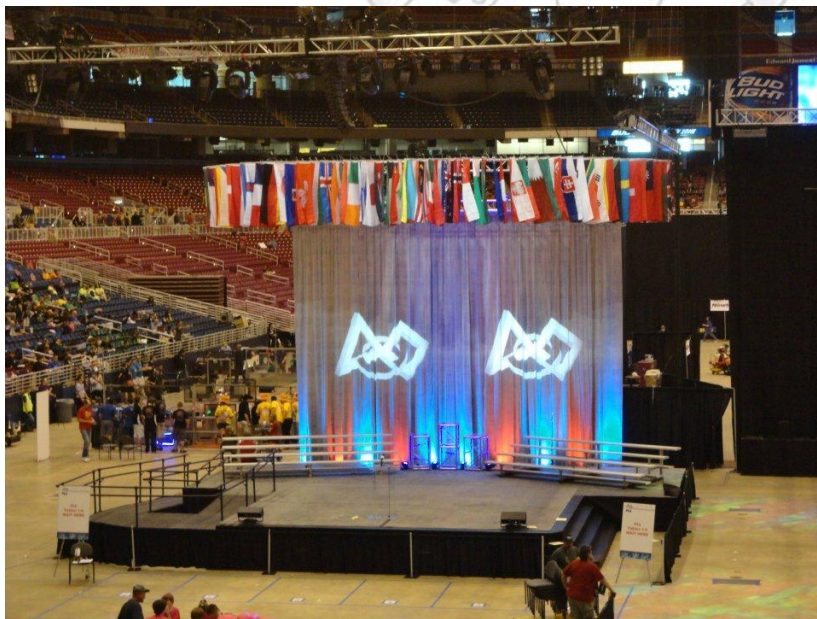
Dean Kamen is an inventor, entrepreneur, and tireless advocate for science and technology. His passion and determination to help young people discover the excitement and rewards of science and technology are the cornerstones of FIRST (For Inspiration and Recognition of Science and Technology).

For more information about FIRST and its competitions visit <http://www.usfirst.org>



FIRST ROBOTICS COMPETITION

"The varsity Sport for the Mind," FRC combines the excitement of sport with the rigors of science and technology. Under strict rules, limited resources, and time limits, teams of 25 students or more are challenged to raise funds, design a team "brand," hone teamwork skills, and build and program robots to perform prescribed tasks against a field of competitors. It's as close to "real-world engineering" as a student can get. Volunteer professional mentors lend their time and talents to guide each team.



When participating in FRC, students:

- Learn from professional engineers
- Build and compete with a robot of their own design
- Learn and use sophisticated software and hardware
- Compete and cooperate in alliances and tournaments
- Earn a place in the World Championship
- Qualify for over \$16 million in college scholarships

For more information on First Robotics Competition visit:

<http://www.usfirst.org/roboticsprograms/frc>

ROULT Overview

ROULT is a robotics team composed by young students from **Instituto Tecnológico de Estudios Superiores de Monterrey**, a local high school in the city of Torreon, Mexico. Sprouting from the former vocational robotics workshop, in 2012 the workshop was invited to participate in FIRST Robotics Competition. The students and teachers eagerly accepted the challenge and formed ROULT, which stands for:

Respect

Optimism

Unity

Loyalty

Teamwork



After a tremendously lucrative participation in the 2012 regional and final competition of FRC, the team has decided to pass its legacy to a new generation keen on mechanics and competitiveness.

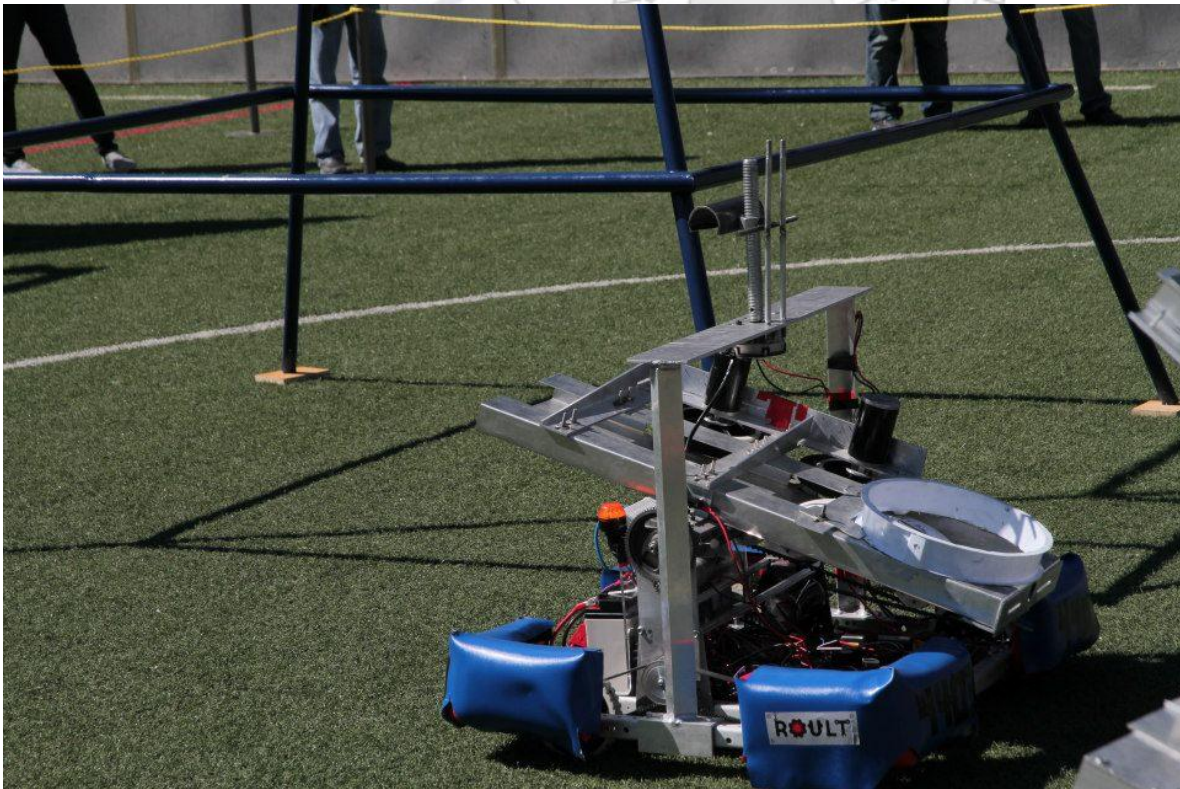
Goal

ROULT's main goal is the vehement diffusion of Robotic technologies through the passing on of applicable knowledge in the spheres of robotics, electronics, mechanics and other engineering sciences. This dissemination of know-how is spread in all the ways possible, such as between co-workers, passed down the chain by mentors, as experience from peers, and by the sharing of information gotten through electronic and analogous media.

The goal can only be accomplished by transmitting technical skills to the people who are part of ROULT. By doing so team members work toward the community focus for which ROULT strives to enlighten our city through community activities. More than technical capacity, ROULT means a love for science, engineering, a passion for understanding and changing the world around us for the better.

Vision

ROULT sees itself, in the next ten years, as focal point for young men and women in our region who desire to show their skill in mechanical sciences in a competitive way through FRC competitions. It also visualizes itself as an important bastion for the community, standing as a paladin and leader in scientific and technical topics, working as a bridge between the swift technological developments in the modern world and the members of the public who should be benefited from these changes. ROULT considers that the changes made in the communities, through its campaign of enticing young minds with the benefits of understanding engineering and science have been significant. ROULT has developed a young community that will be inclined to follow a career in engineering sciences.



History

ROULT was founded in 2012 by students and teachers which were currently studying at ITESM (Instituto Tecnológico de Estudios Superiores de Monterrey) Laguna Campus, who were invited by MET MEX PEÑALES © to participate in First Robotics Competition. An invitation was sent for local high schools in the city of Torreon to enter the competition, and many accepted the challenge and entered the tournament too, making four teams in total.

At the time of ROULT's foundation, the soon-to-be members of ROULT didn't have a clue of what awaited them. They knew they were enrolled in the robotics workshop during their senior year of high school, and expected that the robotics workshop would have ordinary class activities. Nevertheless, that year proved to be radically different.

They named their team ROULT. After six weeks of hard work they went to the regionals in Manchester, New Hampshire. After the regional competition where they won several prizes, and they qualified for the championship at Saint Louis, Missouri.

During the autumn of 2012, the team passed on the flag to the 2013 generation, which is ready to face new challenges.



2012



2013

Awards Obtained

FRC Regional at Manchester, New Hampshire 2012

Rookie All Star Award: Award celebrates the rookie team exemplifying a young but strong partnership effort, as well as implementing the mission of FIRST: To inspire students to learn more about science and technology.

Highest Rookie Seed Award: Award celebrates the highest-seeded rookie team at the conclusion of the qualifying rounds.

Coopertition: These exciting competitions combine the practical application of science and technology with the fun, intense energy and excitement of a championship-sporting event. Teams are encouraged to display Gracious Professionalism® and to cooperate while competing – known as Coopertition™.



Fundraising

Even though sponsors have been overly generous during this season, the team has spent its spare time in activities which have been aimed at raising funds by selling products or organizing fundraising events. All of the fundraising was planned, directed, and completed by the students themselves, always asking ITESM Campus Laguna for permission and counseling.

Selling Chips and Popsicles

With the support from our local high school and our fellow students, team members sold chips and popsicles during recess hours outside the school's cafeteria. Team members used a system to decide which person had to stand guard and sell chips each day, and others students went to the halls and the green areas to spread the word.



Burger Sale

On Saturday 29th 2012, the team members organized a burger sale-out. They had sold tickets during the two weeks prior to the burger sale. Tickets were valid for a combo consisting of one burger and a soda. They sold their tickets to their families, friends and acquaintances. The whole team showed up for the sale and tasks were subdivided into specialized groups. There was a group in charge of the barbeque, another group in charge of putting the tomatoes, lettuce and ketchup into



the burger, a group for packaging and a group for handling the incoming costumers. The sale was a complete success and the team was exhausted afterwards. The remaining burgers were sent to Casa Feliz for altruistic purposes.



Rogelio Ramos Comedy Show

On November 14th 2012, the team organized a comedy show staged by the local Torreon comedian Rogelio Ramos. The team had to contact the comedian, who offered a low price for his services in view of the team's purpose. The team set up the show in the school's auditorium. Tickets were sold weeks before the event took place, and there was a careful planning of each of the details involving the event. Chips, coffee, cake and soda were sold during the presentation. In order to show the assistants the purpose of the show, a small video portraying ROULT's progress was shown at the start of the presentation.



At the end of the show, a plasma T.V. was given to a member of the public by a draw. Rogelio promised that, after seeing the hard work done by the team, he would do a show next year free of charge for the benefit of ROULT. Almost 500 people went to the show.



Game Over: Videogame Tournament

From December 10th 2012 to December 12th 2012, a three-day videogame tournament was organized by ROULT members. ROULT members love videogames and had have friends who also share a passion for gaming, so it was an easy task to get young boys and girls from different schools to come over to ITESM Campus Laguna to enter the tournament. Smash Bros, FIFA 2012 and HALO Reach were played during these three days and the winners inside each game tournament got a monetary prize. There was a fee for entering the tournament, and chips and soda were sold while the participants played at their consoles. Each detail of the tournament's logistics had to be planned, from the final qualification system to the interconnection of the consoles for multiple party gaming. *Game Over* was a success, as it showed that the team had the ability to organize and work quickly under pressure.



Sponsors

ROULT'S sponsors were tremendously helpful supporting ROULT in getting projects off the ground

Peñoles

Peñoles is the world's major producer of refined silver, metallic bismuth and sodium sulfate, and latinoamerican leader in the production of gold, lead, and refined zinc.



Lala

Grupo Lala is a Mexican dairy company, founded in 1950 in Gómez Palacio, Durango. It is the only dairy Company that operates nationwide in Mexico.



Novapak

Novapak is an enterprise in charge of manufacturing different kinds of packing containers.



Muma

Muma is a local company in charge of producing and selling pork meat.



Una producción confiable...

Cirotec

Cirotec is a local turnmill workshop that offers the team support with the manufacturing of specific parts of the robot once the CAD is designed by students.

The logo for Cirotec features the word "Cirotec" in a large, blue, rounded, hand-drawn font with a white outline.

Monte Olimpo

Monte Olimpo is a local steel dealer. This enterprise supported the team with some materials for the construction of the robot.

The logo for Monte Olimpo consists of an orange square icon with a white geometric pattern inside, positioned above the word "monteolimpo" in a green, lowercase, sans-serif font.

Invernaderos y Riegos

Invernaderos y Riegos is a local workshop that is giving its support to the team by supplying material to manufacture parts, and lending its machinery.



Presafil

Presafil is a local workshop which specializes in manufacturing precision tools and mechanical pieces.



Meccano

Meccano is a local company which designs and manufactures industrial and mechanical components. It has a wide range of specialized personnel in the areas of robotics, electrical engineering and mechanical design. It is the biggest technological design company in Torreon.



Instituto Tecnológico de Estudios Superiores de Monterrey

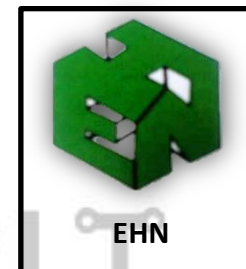
Our local high school and the adjacent engineering school have provided help in the making of ROULT. ITESM Campus Laguna has provided the installations, equipment and qualified personnel for the construction of the robot. It also has guided the administrative process for ROULT's renewed entrance into FIRST, and it has supplied various kinds of miscellaneous support for the team numerous times.



**TECNOLÓGICO
DE MONTERREY®**

Equipos Hidráulicos del Norte

A local company located in Torreon's center. Equipos Hidraulicos manufactures and repairs hydraulic cylinders in their local workshop. They helped produce many pieces for the robot, especially for the climber



Pamorra

Pamorra is a local company which helped the team with raw material manufacturing and component making. With an ample variety of specialized machinery, this company works closely with other regional businesses like MET MEX PEÑALES. They also have experience in welding and metallic mechanical design.



Social Impact

ROULT has been narrowly linked to its community since its establishment. The first generation of ROULT team members acknowledges the immense help it received from its close academic community of fellow students, parents, and teachers. Relatives and friends of ROULT's members aided the team in various ways. Fellow students eagerly helped in fundraising sales projects when the team was in dire need of funds. Teachers and mentors from our sponsor institutions helped the team with technical knowledge, and more importantly, by making the team members realize that they were not alone in their project. The veteran team would also like to thank their parents and guardians as they allowed their sons and daughters to pull all-nighters in campus, and also helped them in numerous small details which made the construction of the robot possible.



The aid ROULT received through electronic media was very important for team morale, and it conveniently helped spread the message which FIRST stands for. Friends, teachers, fellow students, and members of the engineering school cheered the team up as it climbed from regional to final in FRC 2012 competition. ITESM Campus Laguna, our high school, was very proud when the team brought home its prizes, as they are now a beacon for all the engineering and mechanic enthusiasts in the campus who want to push their own limits.

Even though ROULT 2012 had made huge advances, the 2013 generation decided to push the stakes higher and devote itself in a full-fledged stand for supporting its community according to the founding vision of FIRST. Since the new team's recruitment program finished, multiple events and projects have been made to link the team to its community, near and far. The team members consider themselves lucky to have the opportunity which has been offered to them, and they consider pertinent to be humble and give the wealth of knowledge and energy they possess back to the community.

The new team and the old team decided to use the robot designed for the Rebound Rumble Challenge which participated in the 2012 FRC competition to show it to children from a nearby kindergarten. The children were amazed when they saw the robot. They were also given a



succinct presentation detailing in very simple terms the functions and different types of robots, using examples from popular media to which they were familiar. The children were thrilled and involved in the presentation, afterwards the robot threw several shots at the basket while the children cheered. At the end of the day they had a short meal, and the 2012 and 2013 teams discussed the difficulties which arose during the 2012 competition.



In order to raise funds, the team did a burger sale on Saturday 29th 2012. After the sale ended the team realized they had dozens of burgers left, so the team decided that it would be in the highest spirit to give them away with no charge to Casa Feliz. Casa Feliz is an institution which helps children from low income families in our community who need an education. The team members went with boxes full of burgers and the children had a delicious supper, with no charge to the institution at all.



Major Community Projects

Following the mission of FIRST which, as stated by the institution itself in its website is “to inspire young people's interest and participation in science and technology” the team decided to follow the example and emulate the institution in this respect. Two major projects were undertaken to fulfill ROULT's role in the community as an agent for change. These were the project **Curiosity** and the **Lego Workshop**. Both of these projects were planned and done to their completion by members of the team, who used their spare time after school.

Curiosity



The project Curiosity is an audacious off-shoot of *Academy*, an established philanthropic venture which already existed in the campus. A student now member of the team was the founder of this project, which sought to teach basic courses of English to the children of the various workers in the high-school, such as janitors and security guards. These children have no means in their homes to get the resources which are available in the campus. This project rapidly evolved, adding more topics to its curriculum and more students and teachers to its academic effort. Math, computer sciences, French, and creative studies were added, and a crowd of students from the campus flocked to the call.

When the time came and the teachers who had worked in Academy entered ROULT, a vertiginous shift was made in the plan. The founder of the project decided that FIRST's mission could be tremendously beneficial to the community, if the manpower (or teaching-power) of Academy and FRC could be united in a cooperative and efficient way through the members of ROULT. Therefore, using the scope which fuels FIRST's mission, which is to bring engineering and mathematics to young people (not only members of FRC, but all young people that can be reached), the project Curiosity was started.

Using the same pedagogical basis as Academy, Curiosity had a much more scientific and empirical scope on teaching. Applied computer sciences and practical English were taught to children from nearby middle schools, in order to introduce them into the amazing world of modern science. Currently, Curiosity is adding hard sciences to its curriculum, so that every young man and woman in our community has the opportunity to learn.



LEGO Workshop

The Lego Workshop, a specialized and selective project, was undertaken by the members of ROULT. This project was designed to introduce middle school students to basic engineering concepts and applications using the First Lego League © program using LEGO® MINDSTORMS® robot sets which were on campus. A specialized schedule was established, setting up 10 classes which were to be taken once a week.

The teachers in this workshop were all ROULT team members, and they guided the students by showing them the theoretical concepts and then giving them challenges using their LEGO kits. The program was already based in the FLL basic engineering challenges. The members of the workshop were introduced to engineering concepts such as design, construction, programming and testing.

During classes the student members of the workshop were divided into teams made randomly in order for each team to complete the challenge set for the day. Once the theoretical foundation had been given to them, the members were left to their own devices and creativeness to come up with a design solution and build it to win the challenge. All the members enjoyed the workshop, and it served to influence their vocational mindset which became more inclined toward mechanics, math, engineering and design. The workshop was an FRC on a microscopic scale, as it was an enjoyable experience in which both members and guides shared their love for robots and competition.



The teachers also learned the difficulties of being referees in a robotic competition, and now feel a close empathy for the organizers of FRC, which year after year have to go through the delicate task of setting the rules in a robotic competition.

Through these projects, ROULT hopes to live by the mission statement of FRC and to help its community in its cultural, social, and especially technological development.

ROULT-FIRST Scholarship

In November 10th, 2012, ROULT Team hosted an event in which a scholarship to enter our high school was awarded. The event consisted of a 3 hour-long course for Jr. high school students. The course covered the basics of computer science, introducing the students to a robot simulator called "Karel The Robot". After instructing students in the basic controls of the compiling program, a 2 hour long contest was held. During the contest, students were able to apply the knowledge obtained in the previous lessons to solve practical problems in the software "Karel the Robot". The winning student was awarded with a 50% scholarship for the course of his studies in our high school.



Mentors

ROULT mentors provide important expertise for the students. They work alongside them, guiding them in complicated processes which require expert technical know-how. All of them provide the backbone for the team's knowledge in the fields of mechanics, electrical control, and robot parts design.

Isela Carrera

Electronics and Communications engineer (ITESM) with a Master of Science in Electrical Engineering, specializing in Mechatronics (ITL) and PhD in Automation and Robotics (Universidad Politecnica de Madrid, Spain), ROULT's head mentor. She provided help in all areas of work and directed the students toward meeting construction parameter.

Sergio Armendáriz

With a bachelor's degree on mathematics and physics, Sergio is a math teacher at ITESM Campus Laguna High School, he has helped the team with the administration processes required for entering FIRST databases and checking all the minor details needed for the realization of the project.

Joshua Aguirre

Joshua is a mentor from our main sponsor MET MEX PEÑOLES. He graduated from ITESM Campus Laguna Engineering School and helped the team in following FIRST guidelines for robot construction and safety

Luis Rodríguez

Joshua is a mentor from our main sponsor MET MEX PEÑOLES. He helped the team in various ways, as an advisor during construction and helping with the shipping of the robot for matches in our local area.

Jaime Zúñiga

Jaime is currently studying the last semester of the Mechatronics engineering career at Campus Laguna. He mainly helped with electrical and mechanical design, but gave advice to the team in all areas of construction.

Daniel Vaquera

Daniel is currently studying the last semester of the Mechatronic Engineering career at ITESM Campus Laguna. He helped with mechanical design and applications in the robot

Additional Help

Help was also given by campus faculty and others who were not official mentors of the team, the most important help we received from:

Alejandro García

ITESM Campus Laguna Engineering School informatics headmaster, Alejandro has a degree on computer engineering and was captain and mentor for ROULT 2012, he also provided assistance to the 2013 team, mainly with software.

Miriam Nassar

Math headmaster at ITESM Campus Laguna High School, Miriam has a Bachelor's degree on chemical sciences given by ITESM Campus Monterrey. She provided the team with administrative help.

Maria Eugenia Walss

Adjacent principal of ITESM Campus Laguna High School, Maria Eugenia has a degree on electrical engineering. She helped the team by managing class attendance restrictions in order for the team to work on the robot deadlines.

Cristina Fuentes

With a Bachelor's degree on Business Administration and public accounting, two master's degrees one in marketing a State University of New York at Buffalo and another in international business given by ITESM's online school, and having a DBA degree in marketing given by Phoenix University, Cristina helped the team in many important ways, especially through marketing and publicizing ROULT throughout ITESM Campus Laguna High School

Jesús Padilla Sr.

With a degree of electrical engineering from Tecnológico de la Laguna, Mr. Padilla helped in the building of the pyramids for testing the climbers with his business Invernaderos y Riegos. He's the father of one of the team members.

José Ángel Meléndez Sr.

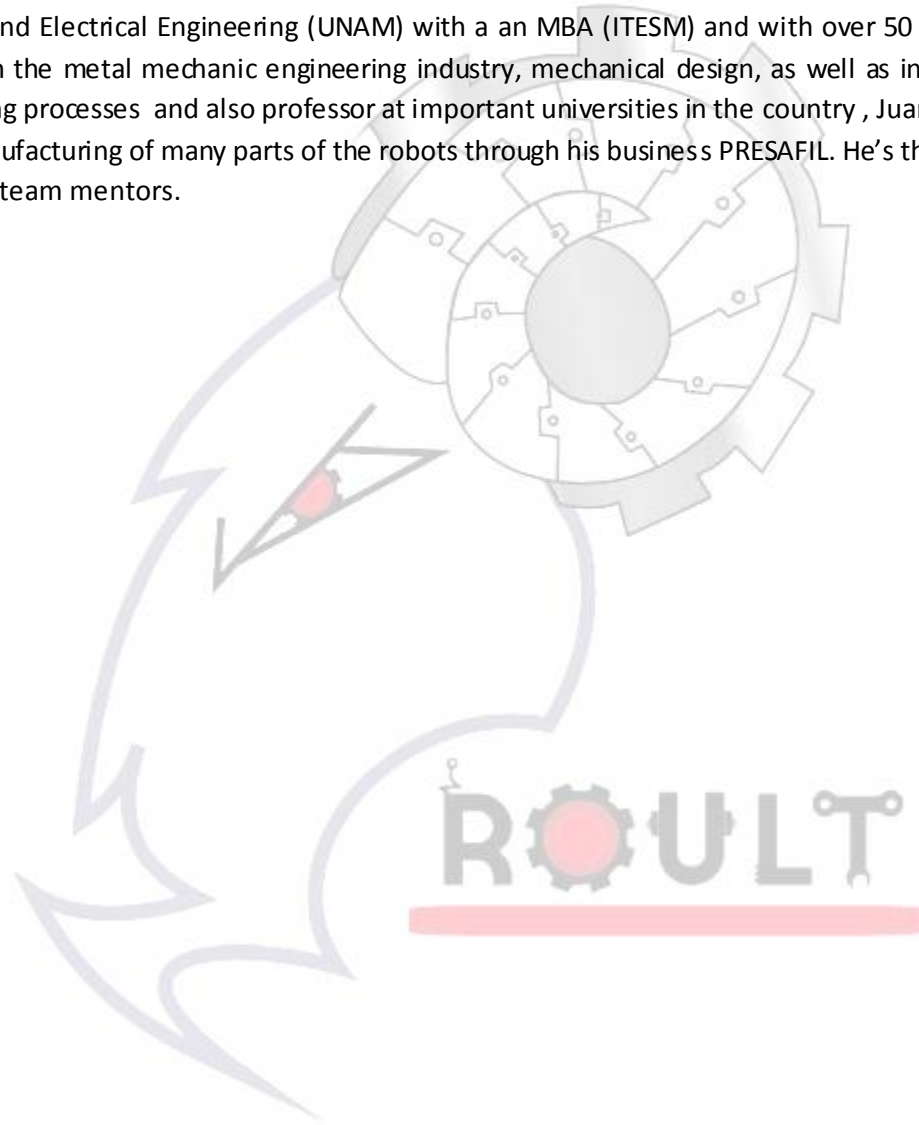
With an architectural engineering degree from UNIVA, he helped manufacture many important robot parts through his business CIROTEC. He's the father of one of the team members.

Alfredo Luna Garay

Mechanical Industrial engineer from TEC Laguna, he is the grandfather of a team member. His business EHN, manufactures and repairs hydraulic and pneumatic cylinders. He helped the team by manufacturing several pieces for the robot, especially worms.

Juan Carrera Guerrero

Mechanical and Electrical Engineering (UNAM) with a an MBA (ITESM) and with over 50 years of experience in the metal mechanic engineering industry, mechanical design, as well as in various manufacturing processes and also professor at important universities in the country, Juan helped with the manufacturing of many parts of the robots through his business PRESAFIL. He's the father of one of the team mentors.



TEAM RULES

In order to facilitate work and make ROULT team member's overall experience more pleasant, a set of rules has been devised and collectively agreed upon. The rules are:

1. Work hard, Play hard:

A team member must be focused during working hours in what he/she is doing, but he/she also has the right to interact with others in a respectful way during break hours or parties.

2. Don't be rude

Cursing is strictly forbidden for individuals belonging to ROULT, team members must be respectful towards their mentors, each other, and the general public. They also have the right not to be disrespected.

3. Return the bills

Each time a member or members buy any kind of service or product with money from ROULT's savings account, they must give their tickets to the writers of the business plan for accounting purposes.

4. Keep your workplace clean:

In order to avoid accidents or robot malfunctioning, team members must not eat or drink at their workstations. Smoking is strictly forbidden in ROULT.

5. Take care of your fellow workers:

A member's attitudes and actions should be directed at helping fellow ROULT members. In order to be part of a team, its members have to give something back to ROULT's collective effort.

6. Wait for your turn to speak:

Team members must not make noise while one of them is exposing an idea.



Building Teams

ROULT has organized its workforce into several teams, in order to delegate responsibilities to team and to direct work in a more efficient and dynamic way.

Mechanical design

The mechanical design team is in charge of designing the robot pieces in computer design software, and then taking them to practice by manufacturing these pieces, assembling them, and putting all the robot pieces together in a way that it performs all the needed tasks correctly.

Team Members

- Erick Carrillo
- Roberto Ramírez
- Rodrigo Escobedo
- Diana Partida
- Diego Uribe
- Gabriel Salinas
- Alicia González
- Jesús Padilla Jr.
- Andrés Robles
- Gustavo Anaya
- Ignacio Aguilera
- Cristian Luna

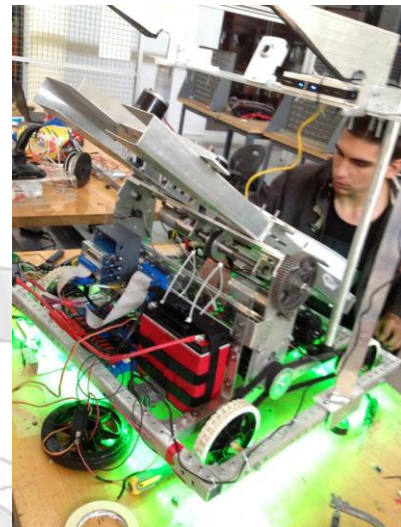


Construction Sub-teams

Chassis	Shooter	Climber	Frisbee Picker
Pedro Villa	Jesús Padilla Jr.	Cristian Luna	Rodrigo Escobedo
Diana Partida	Rodrigo Escobedo	Ignacio Aguilera	Cristian Luna
Diego Uribe	Andrés Robles	Gustavo Anaya	Jesús Padilla Jr.
Gabriel Salinas	Cristian Luna	Fernando Rentería	Ignacio Aguilera
Alicia Gonzalez	José Meléndez Jr.	José Meléndez Jr.	José Meléndez
Luis Valdés		Cristian Luna	

Electric control

The electric control team is in charge of connecting every electrical component of the robot, storing and arranging cables so that they work properly, and effectively connecting motors so that the programming teams can effectively program robot movements.



Team Members

- Andrés Alejandro García Rubio (Team leader)
- Fernando Rentería
- Erick Carrillo

Wireless Connectivity and Modem

- Andrés García

Programming

The programming team is in charge of working along with the electric team in order to program the robot to perform the tasks it shall perform in the best manageable way. The challenge this team faced was making the vision algorithm used to detect goals and shoot frisbees towards them.

Team members:

- José Ángel Meléndez Corona Jr. (Team leader)
- Emilio Mena



LED Installation

- Jesús Padilla Jr.
- Fernando Rentería
- Andrés García

Financial Planning

- Sandra Jiménez
- Andrés García
- Marlene Papadopulus
- Roberto Ramírez

Transportation of personnel and Materials

- Erick Carrillo
- Jesús Padilla Jr.
- Emilio Mena
- Andrés Robles

Paint job

- Erick Carrillo
- Diego Uribe
- Rodrigo Escobedo

Image Design

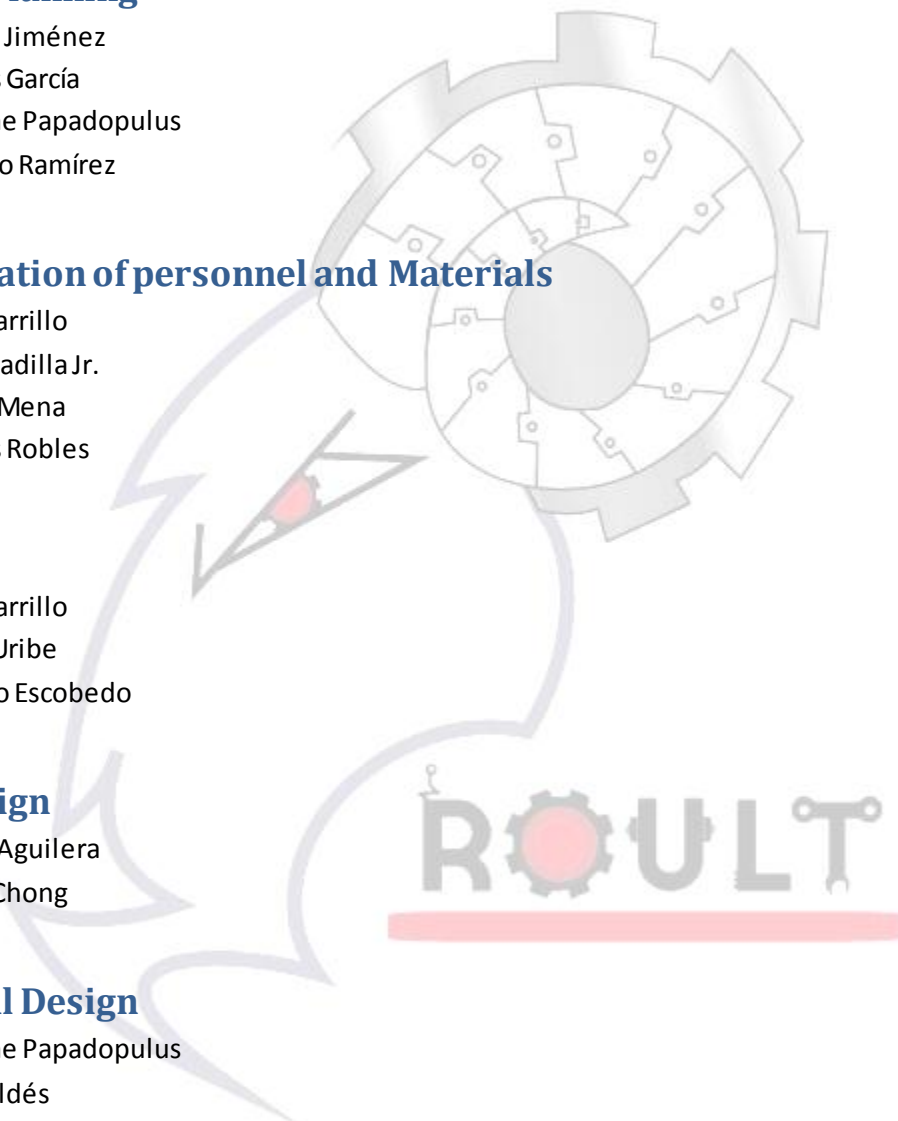
- Nacho Aguilera
- Aelyn Chong

Mechanical Design

- Marlene Papadopulus
- Luis Valdés
- Aelyn Chong

Community Outreach

- Héctor Soto
- Gerardo Torres
- Alan Sapiens
- José Ángel Melendez Jr



ROULT members in Curiosity

- Héctor Soto
- Gerardo Torres
- José Meléndez Jr.
- Alan Sapiens
- Erick carrillo
- Cristian Luna
- Andrés Rubio
- Gabriel Salinas
- Alicia González
- Rodrigo Escobedo

Lego Workshop

- José Meléndez Jr.
- Andrés García
- Gustavo Anaya
- Marlene Papadopulus
- Luis Valdés
- Nacho Aguilera

Media Outreach

- José Meléndez Jr.
- Andrés García
- Alan Sapiens

Online Blog

- Andrés García
- Owen Mireles
- Héctor Soto
- Erick Carrillo
- Gerardo Torres



Website

Framework

The website was designed using the framework "Twitter Bootstrap"

Software Used

The software used includes: Sublime Text 2 for coding, Adobe Photoshop CS6 for image design, and Adobe Illustrator CS6 for logo design.

Developed by students

This website was completely designed and programmed by student members of ROULT Team:

Programming

Jose Angel Melendez was in charge of programming this website. Using HTML5, CSS, and JavaScript, the developer achieved to create a clean and elegant website to promote ROULT and FIRST ideals.

Writing and Text Editing

Andres Garcia was in charge of writing and editing almost every piece of text included in this website. Included the blog, Andres wrote various articles for ROULT, as well as the business plan you are reading right now.

Designing

Sandra Jimenez was in charge of all the aspects regarding design in this website. Included color choices, and image editing, Sandra helped make this website elegant and eye-catching.

Mobile support

Using responsive web design, the developers of this website had the challenge to adapt it to mobile apps. roult.com is one of the first FRC teams to have responsive web design.

Cross-Browser Compatible

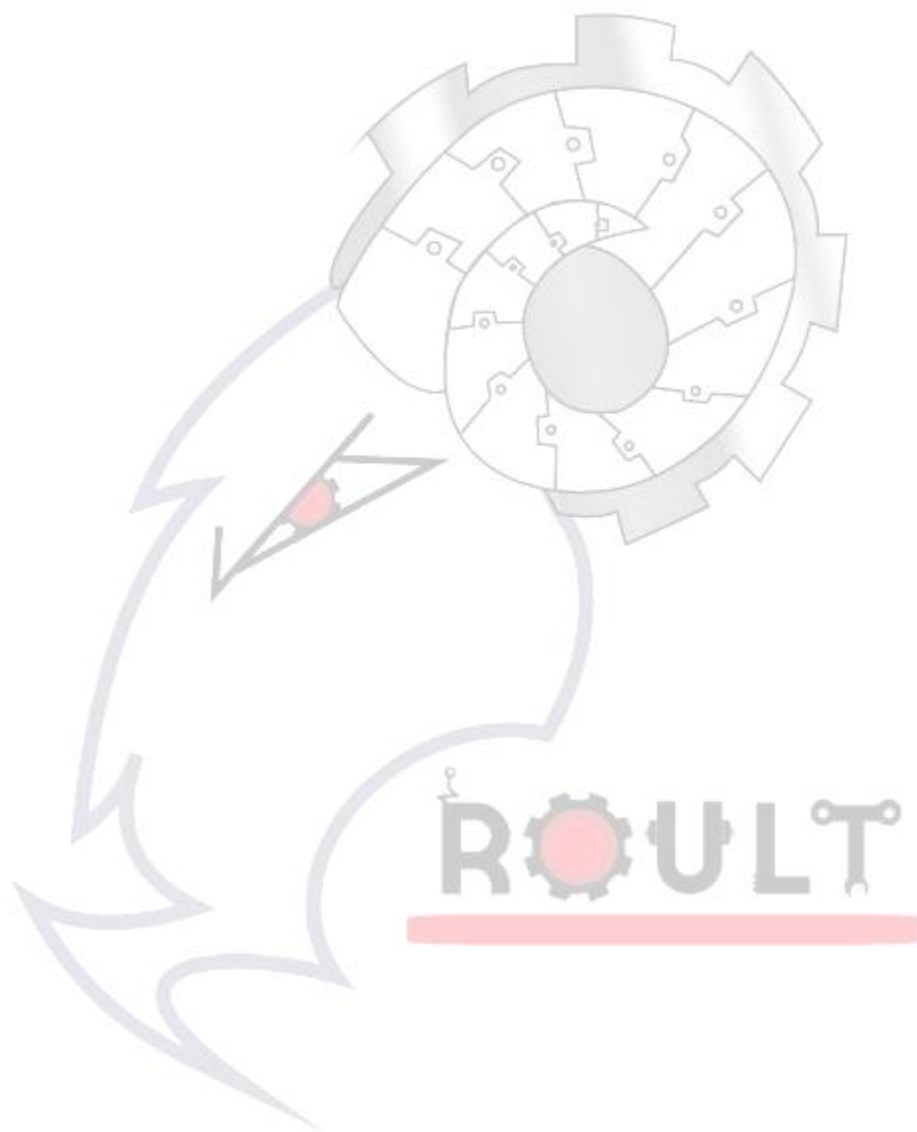
The developing process of this website had in consideration the variety of browsers used nowadays in the world. Having this in mind, the site can run in all of the most used browsers.

Monitoring users

Using Google Analytics®, ROULT team can check website statistics, including how many people visit it, and their location, in order to monitor the correct spreading of our message.

Updated daily

With the use of the blog, a weekly upload of photos, and live streams every day, ROULT makes sure that the website is up to date, and that people who visit it have something new to see every day.



Financial Plan

ROULT has a precise control over its construction budget and its funding. Our goals for fiscal year 2013 are:

- ✓ Paying for the construction of the robot through sponsorships and fundraising.
- ✓ Decreasing the amount of money needed per team member to pay for his/her trip through fundraising activities and using what remained of the sponsorship funds
- ✓ To have an accurate record of financial activities

ROULT's funds for all fields came from:

- Sponsorships
- Fundraising
- Individual payments for the trip

Expenses went into:

- ❖ Robot Construction
- ❖ Paying Uniforms



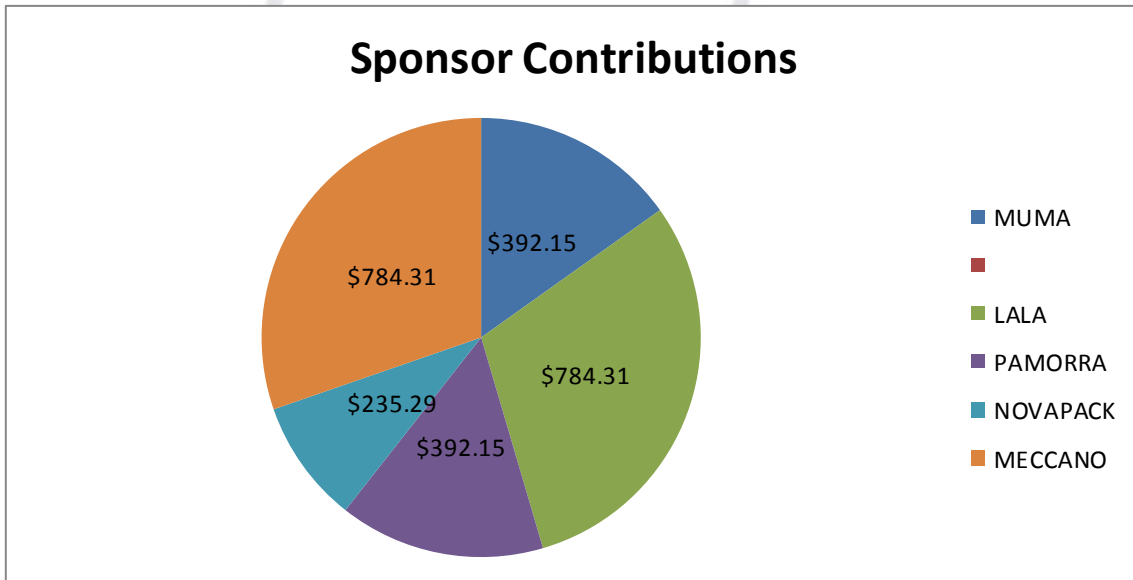
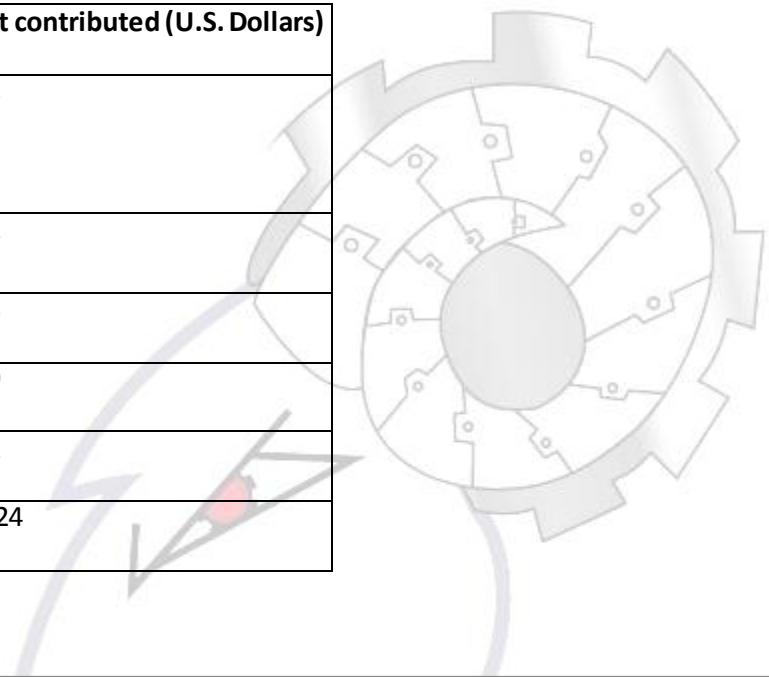
ROULT has always had policy of using the leftover material from its activities (re cyclable materials which the team doesn't need, food leftover from a sale) for noble causes.



Funds

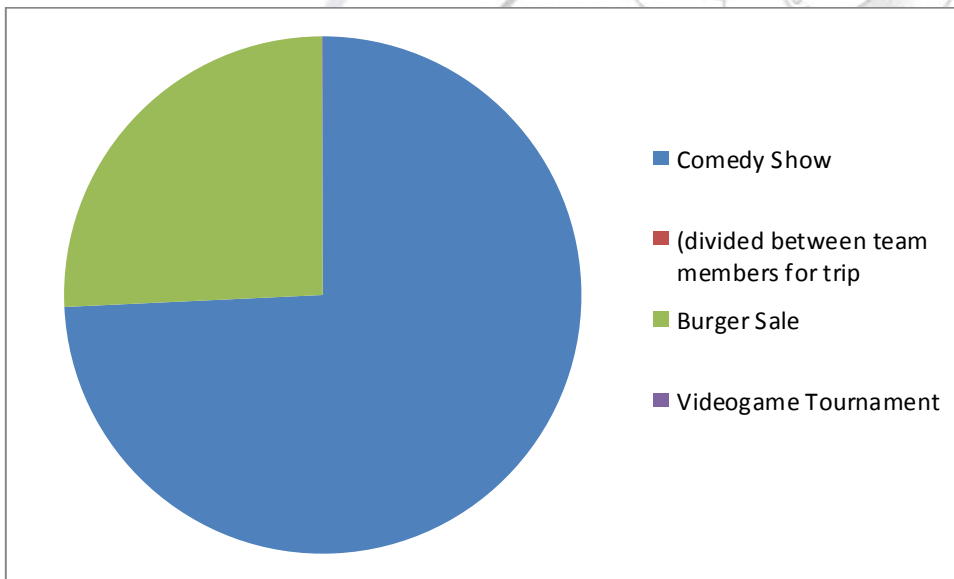
Sponsors

Sponsor	Amount contributed (U.S. Dollars)
MUMA	\$392.15
LALA	\$784.31
PAMORRA	\$392.15
NOVAPACK	\$235.29
MECCANO	\$784.31
TOTAL	\$2,588.24



Fundraising Activities

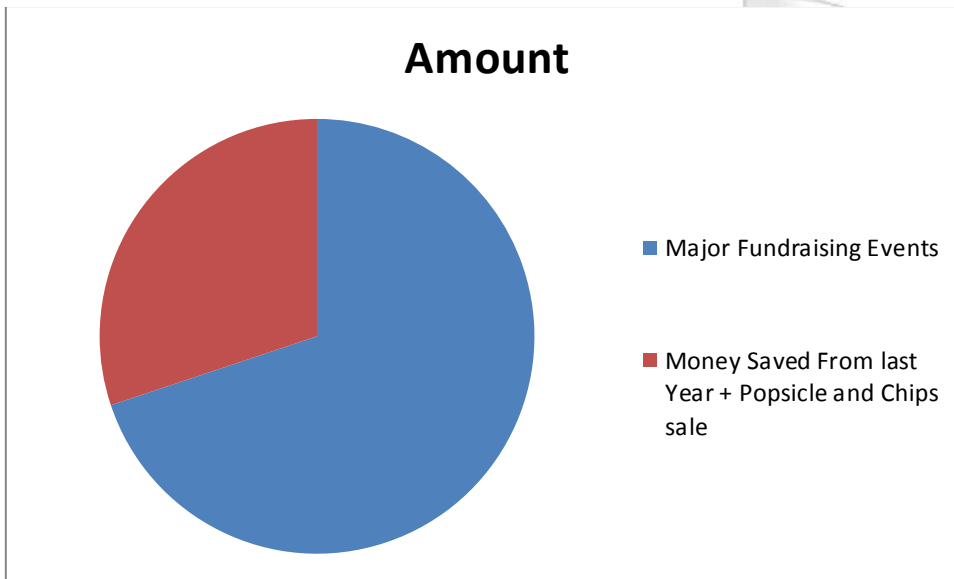
	Profits
Comedy Show (divided between team members for trip)	\$4,451.76
Burger Sale	\$1,540.24
Videogame Tournament	\$2.75
Total	\$5,994.75



Money in Savings account

Income Source	Amount
Major Fundraising Events	\$5,994.75

Money Saved From last Year + Popsicle and Chips sale	\$2,585.49
Net Total Savings	\$8,580.24



Robot Construction Costs

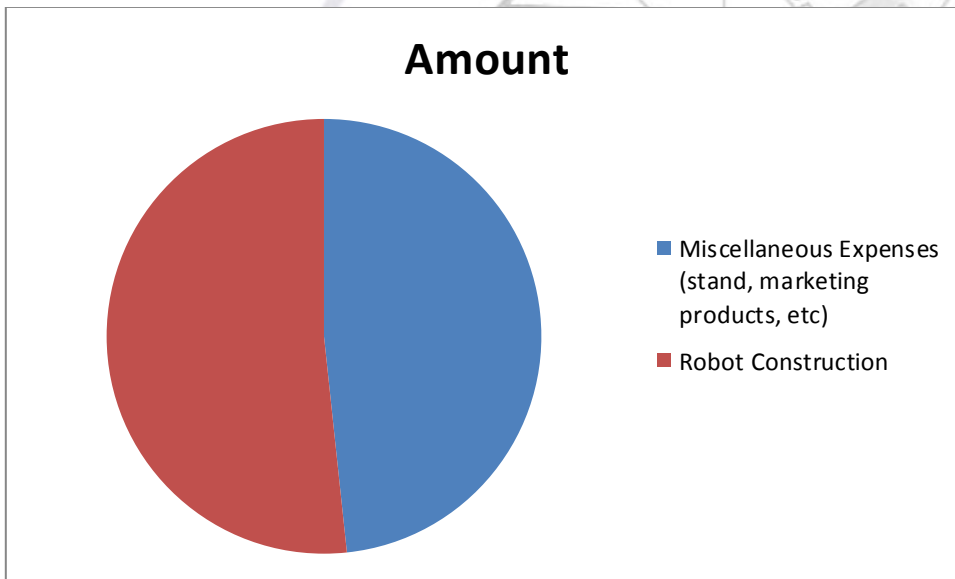
Material	Use	Store	Mexican Pesos	U.S. Dollars
Aluminum Plate	base for shooter		\$890.00	\$69.80
Aluminum Sill and angle	climber, shooter		\$723.00	\$56.71
Screws and L's	goal construction		\$160.00	\$12.55
Tricycle wheels	Shooter		\$700.00	\$54.90
Page Domain	community		\$1,000.00	\$78.43
Toolbox and craps	roult tools		\$600.00	\$47.06
Glue and screws	shooter angle		\$200.00	\$15.69
Worker's extra hours	worker's payment		\$280.00	\$21.96
2 liters of blue paint	Pyramid		\$250.00	\$19.61
Acrylic	electric toolbox	Vinyl-sign	\$580.00	\$45.49
Aluminum Structure (profiles and angles)	worm structure	Lagacero S.A. de C.V.	\$200.00	\$15.69
Marketing posters	ROULT marketing		\$300.00	\$23.53
3 meters steel tube	climber		\$248.00	\$19.45
Rowlock 3/4 wall	worm climber	Rybalsa Laguna S.A. de C.V.	\$325.00	\$25.49
Threaded Rod 1in *7in	worm climber	Tornilleria del Norte S.A.	\$50.00	\$3.92
4 screws 1 in	worm climber	Tornilleria del Norte S.A.	\$40.00	\$3.14
Threaded Rod 1 in	worm climber	Tornilleria del Norte S.A.	\$150.00	\$11.76
LEDs	Camera sensor		\$50.00	\$3.92
Rotating band 1/2 in*20cm rubber	shooter feeder			\$0.00
tube 1/2*1 1/2in aluminum	Paralelogram prototype		\$121.00	\$9.49
Hardware Store (Thiner, nails)	Needed materials		\$55.00	\$4.31
Marketing and Curiosity Webpage	Curiosity page		\$1,000.00	\$78.43
Climber Plate	Climber guide		\$400.00	\$31.37
Packing	Frisbee guide			
Jumper for Connector (am-0658)		Andy Mark	\$31.88	\$2.50
Battery Purse, Red (am-0620)		Andy Mark	\$165.75	\$13.00
Number "0", White, Iron-on, 4" tall, Qty 4 (am-0835)	Bumpers	Andy Mark	\$76.50	\$6.00

Number "4", White, Iron-on, 4" tall, Qty 4 (am-0829)	Bumpers	Andy Mark	\$153.00	\$12.00
Number "3", White, Iron-on, 4" tall, Qty 4 (am-0828)	Bumpers	Andy Mark	\$76.50	\$6.00
Red Bumper Material for Robot Bumper (2 pieces 110in x 18in) (am-0622)	Bumpers	Andy Mark	\$229.50	\$18.00
Blue Bumper Material for Robot Bumper (2 pieces 110in x 18in) (am-0621)	Bumpers	Andy Mark	\$229.50	\$18.00
Dual Use Gyro and Accelerometer Sensor Board (am-2067)		Andy Mark	\$612.00	\$48.00
Timing Belt, Gates HTD, 15mm wide, 104T, 520-5M-15 (am-2267)		Andy Mark	\$331.50	\$26.00
Timing Belt, Gates HTD, 15mm wide, 160T, 800-5M-15 (am-2266)		Andy Mark	\$765.00	\$60.00
Axis M1013 Camera (am-0667)		Andy Mark	\$2,384.25	\$187.00
Shipping Cost	Andy Mark products	Andy Mark	\$450.84	\$35.36
Jaguar Motor Controller		Vex Robotics	\$6,118.98	\$479.92
Victor 888 Motor Controller		Vex Robotics	\$1,274.75	\$99.98
Shipping Cost, handling and taxes	VEX jaguars and victors	Vex Robotics	\$873.89	\$68.54
Perforating Screw 8*1.5	Frisbee band	Tornilleria del Norte S.A.	\$9.00	\$0.71
Flathead screw allen 3/16*3/4	Frisbee guides	Tornilleria del Norte S.A.	\$20.00	\$1.57
Drop screw 8/32*11.5	Triangle climber	Tornilleria del Norte S.A.	\$14.40	\$1.13
Drop Screw 3/16*11.5	Tirangle climber	Tornilleria del Norte S.A.	\$10.00	\$0.78
Belt bases	Ordering cables	Electronica Carrod	\$34.00	\$2.67
Cable cowl	Joining cables	Electronica Carrod	\$66.00	\$5.18
Cable	LEDs	Electronica Carrod	\$10.00	\$0.78
LED ligts	Robot Design	Electronica Carrod	\$685.50	\$53.76
Cable for jumper	Electric Control	Electronica Carrod	\$52.00	\$4.08
UTP Cable	Ethernet Cable	Electronica Carrod	\$5.50	\$0.43
Ethernet cable connector	Ethernet Cable	Electronica Carrod	\$8.00	\$0.63
eyelet terminal	Electric Control	Steren	\$30.04	\$2.36
Black electric tape	Electric Control	Steren	\$14.00	\$1.10
welding material 20 grams	Electric Control	Steren	\$46.00	\$3.61
Thermofil 2 meters 1/2in	Electric Control	Steren	\$18.00	\$1.41

Velcro	modem and counterweight	Home Depot	\$100.00	\$7.84
Toilet Plunger	Sucker	Tiendas Sorianda S.A. de C.V.	\$94.00	\$7.37
Bycycle chains 3/32	Bicycle climber	Motos y bicicletas Goray S.A de C.V.	\$90.00	\$7.06
Free wheel	Bicycle Climber	Motos y bicicletas Goray S.A de C.V.	\$35.00	\$2.75
Triple crankshaft star	Bicycle Climber	Motos y bicicletas Goray S.A de C.V.	\$65.00	\$5.10
Back mace	Bicycle climber	Motos y bicicletas Goray S.A de C.V.	\$24.00	\$1.88
Polyestirene 50*50cm	Robot Packing	Minmax papeleria y copias	\$214.41	\$16.82
Super wadding	Robot Packing	Modatelas Sapi de C.V.	\$64.77	\$5.08
Door packing	Sucker guide	Autozone de Mexico	\$149.90	\$11.76
Contact glue	Sucker Guide	Autozone de Mexico	\$49.90	\$3.91
Measuring tape	roult tools	Autozone de Mexico	\$29.90	\$2.35
Aerosol black, red and gold	robot design	Pinturas Acuario del Norte S.A. de C.V.	\$279.14	\$21.89
Acrylic plate 4mm	Electrcal control structure	Acrilicos Gea	\$1,200.00	\$94.12
Worm manufacturing 1/2 * 16 in	Worm	Rebombeos Laguna	\$350.00	\$27.45
1/4 aluminum plates manufacturing	Triangle climbers	Rebombeos Laguna	\$600.00	\$47.06
1/4 aluminum plates manufacturing	Shooter holder	Rebombeos Laguna	\$580.00	\$45.49
Worm Nylon 1/2 in			\$160.00	\$12.55
TOTAL			\$27,204.29	\$2,133.67

Expenses

Expenses	Amount
Miscellaneous Expenses (stand, marketing products, etc)	\$1,994.80
Robot Construction	\$2,133.67
TOTAL EXPENSES	\$4,128.47



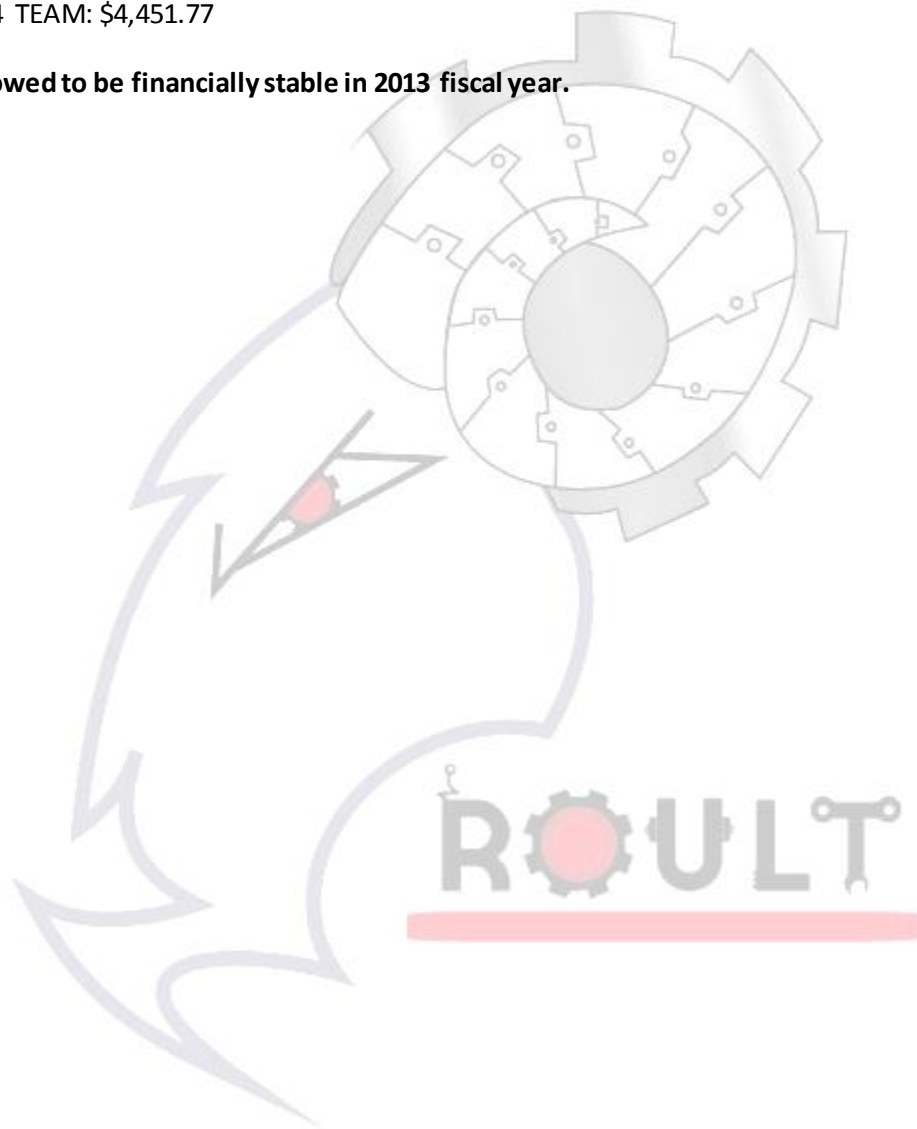
Financial Analysis

TOTAL SAVINGS: \$8,580.24

TOTAL EXPENSES: \$4,128.47

CUT FOR 2014 TEAM: \$4,451.77

The team showed to be financially stable in 2013 fiscal year.



Appendix

- ❖ ROULT WEBSITE: <http://www.roult.com/>
- ❖ CURIOSITY WEBSITE: <http://www.curiosity.mx/>
- ❖ FIRST WEBSITE: <http://www.usfirst.org/>
- ❖ FRC WEBSITE: <http://www.usfirst.org/roboticsprograms/frc>
- ❖ PEÑOLES WEBSITE: <http://www.penoles.com.mx>

For more detailed information concerning ROULT, feel free to send us an e-mail through <http://www.roult.com/contact.html>, we'll answer your questions as soon as they arrive.

