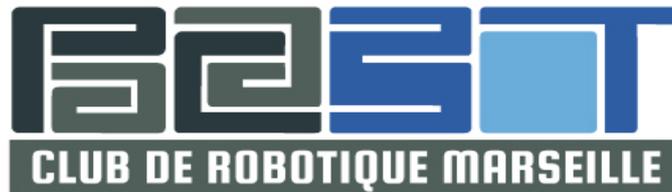




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## Challenge 2014-2015 : micromouse Birmingham (TechFest Competitions)

International robotics competition of UK Micromouse championship

### Foreword

There are not so long, we evaluated the intelligence of mice and other rodents for go out a maze as quickly as possible. Today's technology and miniaturization came within reach of a lot people. With enough passion, curiosity and sharing, that can be a challenge to pu a mechanical mouse in a maze ...

### A Team

Manipulate all this technology, design, manufacture, innovate, it could be only a dream but there is first, a passionate team that was enriched gradually with new talent, more or less young but always the desire for new challenges.



### Capability

Recently hosted to the Fablab LFO to Marseille (Place of Manufacture Open), we recently a much more favorable environment to making, sharing, innovation to experiment, make small robots.

<http://www.lafriche.org/content/le-fablab>

### Partners

- One of our first value comes from communities, a large number of people who share their experiences on the web. Our website is visited regularly.
- The electric motor supplied by the company Faulhaber are quite exceptional and are an asset for the MiniMouse project.
- Gears details are provided by the company Jeambrun (minimum Friction and



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- optimum use of engine power with maximum accuracy).
- Milling part with Cambam
- Provision of electronic components with Mouser.
- Conception 3D with SolidWorks
- ...

## Achievement

Since several years, we construct mobile robots of different sizes which are then involved in various public challenges in France.

The size of robots range from 10cm side (max weight 500g) to 30cm side and a height of 35 cm. Dimensions, and weight equipment robots are defined in the rules of each competition.

These mobile robots implement various technologies that is constantly changing and that the general public finds. Various electronic parts used have followed the evolution of all components at the micro-controller, processor, sensors (proximity sensor, Gyroscope, accelerometer, ...)

Our different competency allow us to perform all the different parts of robots (The electronics design, 3D design of parts and their achievements), and also programming their behavior.

**With 8 years experience in the field of robotics, we have participated in several tournaments in recent years:**

- Challenge National Robot Maze / Sumo 2013 Nîmes (France).  
we won 1st place in the category Robot Maze :



With improvements in the trajectory calculation and the intelligent management of the labyrinth path we want to measure much stronger. This is very motivating for the club.

Now we intend to improve the robot Zhonx II. With a new design, we want to participate in other major tournaments in this category.

The Zoe Project (sumo robot) is nevertheless not forsaken. Colin, the youngest of the team responsible for this project and looks forward to having a fully functional robot to organize small tournaments internally.



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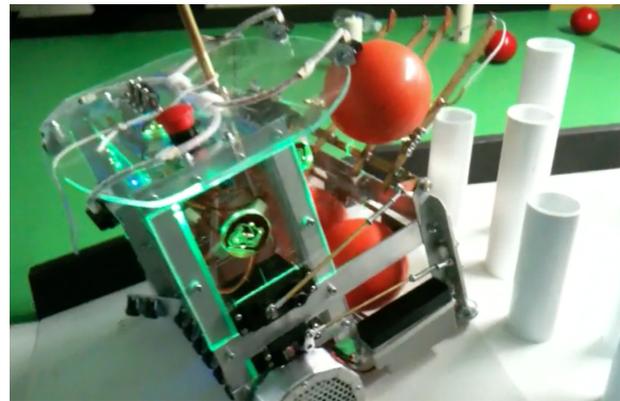


➤ Challenge National Robot Maze / Sumo 2012, Nîmes.

First participation in the category Robot Labyrinth and we won 1st place. Participation also in the category Sumo. Colin was able to play some game but could be strong enough against other competitors.

➤ EUROBOT 2010 41<sup>ème</sup> !

This is our ranking in the France robotic's cup (Ferté Bernard). Like the robot was not completely finished, we participated only to one game but that was a fantastic game. Score 1500 ! This was like the highest level team's score !



➤ EUROBOT 2009 (Temples of Atlantis)

For the majority of member of PACABOT, that was the first participation. We are confronted with anything related qualifications and requirements of this kind of competition. The robot is involved in several game but was not enough efficient to earn enough points.

➤ Challenge National Robot Sumo 2008, Nîmes.

2 sumo robots, the club wins the 2nd and 4th place in this category. Our first participation to this challenge was in 2007.

➤ A very encouraging participation in the France robotic's cup (E = M6) in 2005 (40th out of 200)

A very encouraging participation in the France robotic's cup (E = M6) in 2005 (40th out of 200), PACABOT goes back into the rails of the Eurobot competition with big ambitions ...

You can find videos and information on the internet regarding the various competitions.

### Eurobot Event



Eurobot mobilize 200 teams in a technical context of very high level and a special environment. Robotics clubs in



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high schools participate. This competition at the European level is also participating teams from around the world

The event was filmed throughout its duration by amateurs but also by television professionals, and then broadcast on our channels and Internet.

Media on the site :

- TF1
- France 5
- M6
- Euronews
- DR-TV (Danemark)

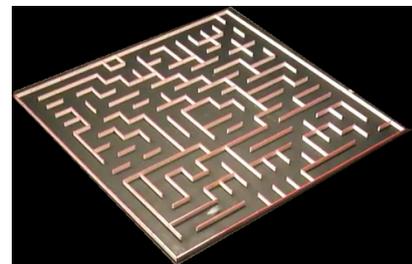
## Our project 2014 - 2015

We wish to participate to an european challenge.

Participation International challenge class Micromouse (maze) Birmingham

(<http://www.micromouseonline.com>)

The micromouses are small autonomous robots measuring between 70mm and 100mm side. When placed in the maze, they have no plan and will have to move to a target box as quickly as possible (usually in the center of the maze) and return to their starting points. The Micromouse can do several searches in the maze to determine the optimum route.



Each boxes measures 180mm side and the labyrinth consists of 16x16 cases. The wall height is 50mm.

For more information, search micromouse on internet.

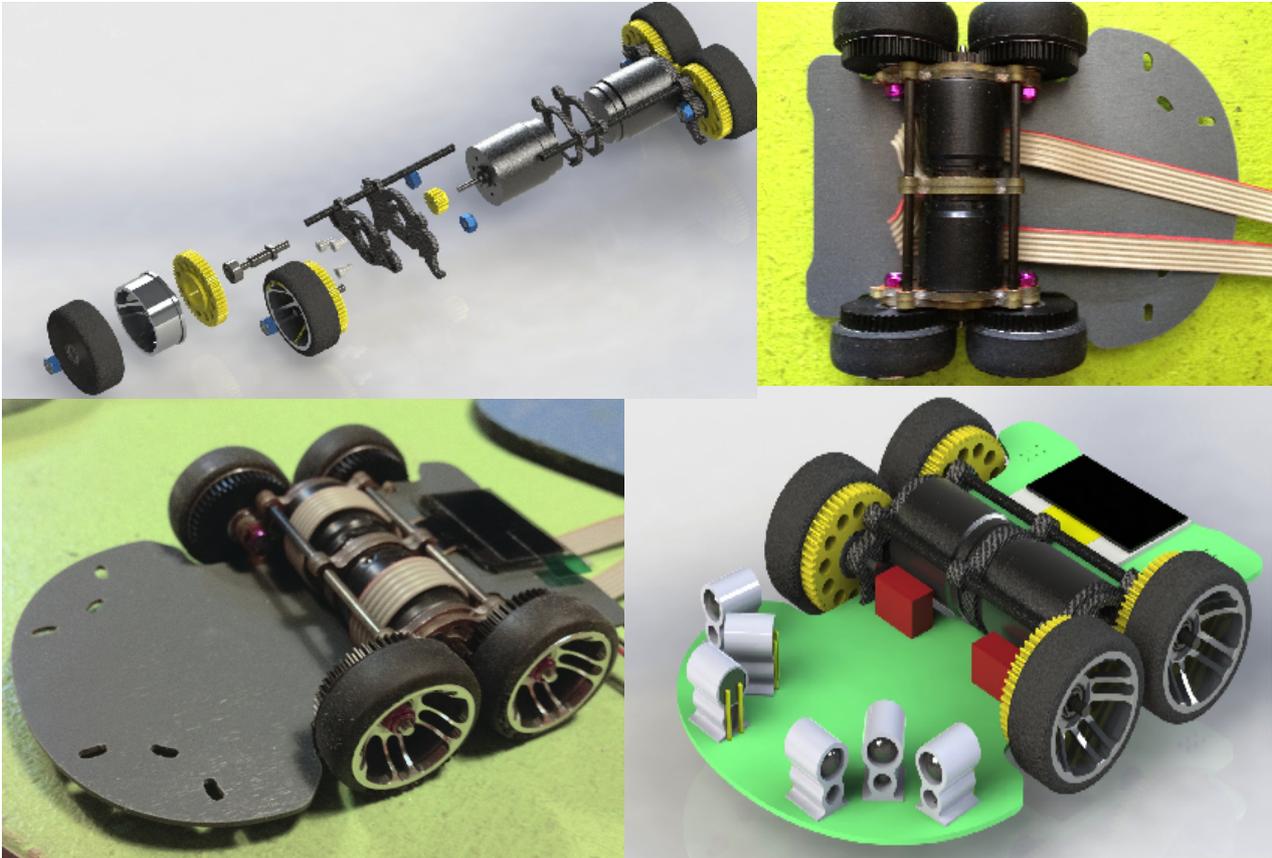
Project progress :

3 categories! (Electronics, Mechanics, Software)

Currently some phases are designed and implemented. A prototype is being performed.

Consult our web site <http://pacabot.com> to see the progress of this project.

Technical information are details and the web site is regularly set with the significant progress. We have created some pieces. The virtual micromouse (CAD modeling) become a prototype. The electronic part will be soon realized. (routing the PCB, find funding to burn the circuit, ...).



## Why a partner ?

This project is fun but must be funded. So we need to find a **financial, material** and **technical** if we want that this projet will be realized.

Partners that we ask are varied in nature. Generally, they combine the image of their business ideas to the initiative, creativity and risk-taking that we practice.

PACABOT team in collaboration with Planète Sciences Mediterranean commit to make visible all of its partners in the media (TV, cable, print media) present during events in which we participate.

Partnerships can be very diverse in nature: Providing hardware and software, financial support, technical support, logistics support.

We identified five distinct areas of partnership:



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- A contribution of hardware / software (CAD, SDK, motors, electronic components)
- Financial participation in the project development.
- Financial participation in the registration fee and participation.
- Participation providing technological bail.
- Participation in the form of services or resources made available (Printed Circuit Boards)
- A contribution of hardware / software (CAD, SDK, motors, electronic components)
- Financial participation in the project development.
- Financial participation in the registration fee and participation.
- Participation providing technological bail.

## Promoting partnership

It will be easy to promote corporate image, not only in our website and Panete Science but especially during this supported by CNN (media present) competition. We will use various means:

- banners
- Articles on our website,
- Logos on T-shirt,
- Stickers on the robot,
- Distribution of goodies ...

## Demonstrate

According to the aid provided, the club PACABOT hopes to build more than 1 robot. Algorithms and optimization hardware can indeed ask to develop more than the first prototype (see project progress). Also, we have the idea of creating a suitcase containing everything needed to create a small maze with a robot (Zhonx) and its base to charge the batteries. The aim is to show in your company what's permit your contribution .

This kit will increase from partner-to-partner ...

