Challenges (simulation)

This part will be evaluated entirely in simulation. To do this, you will send your package in the form of an archive that the teacher will launch on his own computer. To do this, the teacher will copy your package, run a *catkin_make* and then launch the necessary launch file(s). Multiple launch files may be required as you are allowed to offer a challenge/challenge operation. Be careful, this will cost you points in the robot architecture part (see below). Finally, these additional launch files must spawn the robot at the beginning of the challenge to avoid losing time. **This step should be prepared and explained in a text file to take as little time as possible.**

It is your responsibility to make sure that the package will run smoothly on a computer other than your own. No other steps than the ones announced here will be performed by the teacher (no debugging in order to make your launch file or your program work)

	Unacceptable: 0 point	Acceptable: 5 points	Objective reached: 10 points
Line following	Nothing works	Works at slow speed or not every time	Works at a reasonable speed
Obstacle detection/emergency stop			
Obstacle avoidance			
Lidar control / walls following			
Navigation inside a crowded area			

Use of the real robot

The purpose of this part is to evaluate your use of the real robot. For the tests on the real robot you are allowed 2 tests (a third one exceptionally), the robot must be already connected and the robot ready to go at the time scheduled for your group. Thus, the connection will be done **from your computer** in order to prepare this part in advance.

	Unacceptable	Insufficient	Acceptable	Objective reached	Beyond
	0 point	**5 points**	**10 points**	**15 points**	**20 points**
Real robot	Nothing works	At least the teleoperation is working	At least one of previous challenge is working	>2 challenges of previous challenges are working	All challenges are working

Robot architecture

This part aims to evaluate the overall functioning of your robot and especially the ability of your robot to switch from one task to another.

	Unacceptable: 0 point	Acceptable: 5 points	Objective reached: 10 points
Robot architecture	Nothing works	It is able to transition between two challenges	10 pts if robot is able to transition between more than 2 challenges

Report

The purpose of this part is to evaluate the quality of your production. This includes your codes and the report. For your codes, particular attention will be paid to the layout of your package, the writing of your scripts as well as the comments allowing their understanding. For the report, particular attention will be paid to its clarity and its ability to explain the functioning of your system and the evaluation of its performance.

The report in pdf format, as well as your package in the form of an archive, will be due on **Friday, April 28th at 23:59** for all groups.

	Unacceptable: 0 point	**Acceptable: 5 points**	**Objective reached: 10 points**
Code	The code is not commented at all, and sometimes very hard to understand.	The ROS package is not well organized, the code is sometimes not commented at all, or the comments does not allow to catch the meaning of the code. Some ROS good practices are not respected.	The ROS package is correctly organized, the code is correctly commented and the comments correctly explain all the root concepts used to solve the different challenges.
Report	No report	The report is delivered, but the content does not provide a clear understanding of the architecture, node operation and performance evaluation	The report provides a clear understanding of the architecture, node operation and performance evaluation