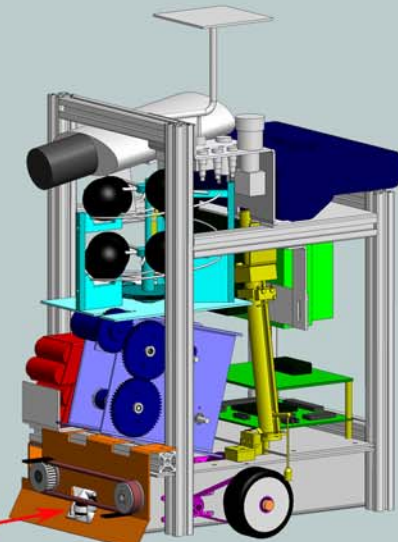


**Dude : Our main robot.**

**Perception :**  
One camera and various optical and infrared sensors detect the bridge, skittles and others obstacles.

**Ball shooting :**  
A carousel can keep 8 squash balls in it and feeds them one by one to a belted-gun which throws them a few meters ahead.

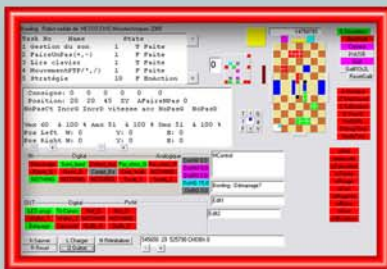


The front bi-directional wheel with dampers.

**Wheels :**  
On the front and on the back of Dude there are 2 passive bi-directional wheels for support. On each side of the robot there are driving wheels, each driven by a 70W DC motor.

**Skittle up raising:**  
At the front of the robot, a belt pushes the skittles on the sides. Magnets fixed on a lifting system raise them upside down. A mechanical stop releases skittles from magnets.

**Controls and connections**

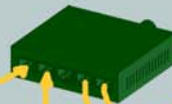


**Control and simulation panel**  
Multi-task/agent software, written in Piaget>C++>Windows

PC with program  
SONY VAIO UPG-3



Ethernet hub

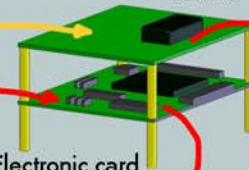


Camera  
Axis-100



**Control panel for visual calibration**

Servocontrol  
Gall DMC



Driving  
motors

Sensors  
Sharp GP2D12 (5X)  
Sunx FX3-A3R-P (2X)



Programmable Controller  
Beckhoff BC9000



Raising,  
Gun...

Electronic card

**Arm deployment**

**Walter : Our second robot.**

Small, simple and agile, his mission is to knock skittles down on the opposing playground with his deployable 10 cm arms. At the beginning of the match, Walter crosses over the bridge and goes around avoiding obstacles thanks to frontal sensors (tactile and optical).

For control, we run PiagetLight on a Beck integrated PC and an originally configured Altera FPGA.

