

Rhoban Football Club – Robot Specification

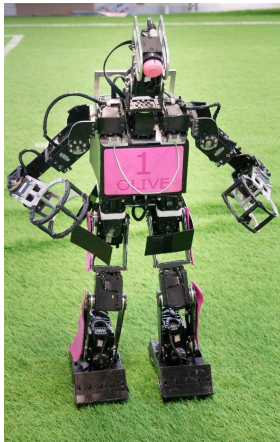
Humanoid Kid-Size League, Robocup 2023 Bordeaux

J. Allali, C. Dobigeon, M. Duclusaud C. Gaspard, L. Gondry, O. Ly,
S. N'Guyen, G. Passault A. Pirrone

julien.allali@enseirb-matmeca.fr, celine.dobigeon@u-bordeaux.fr,
marc.duclusaud@u-bordeaux.fr, clement.gaspard@u-bordeaux.fr, loic.gondry@free.fr,
olivier.ly@u-bordeaux.fr, steve.nguyen.000@gmail.com, gregoire.passault@u-bordeaux.fr,
antoine.pirrone@u-bordeaux.fr

CNRS, LaBRI, University of Bordeaux and Bordeaux INP,
33405 Talence, FRANCE

Sigmaban+ (2019-2024)



- **Robot name:** Sigmaban+
- **Height:** 70 cm
- **Weight:** 5.5 kg
- **Walking speed:** 30 cm/s
- **Motors:** 20 DOF
 - Neck: Dynamixel MX-64 (2 motors)
 - Upper Body: Dynamixel MX-64 (3 per arm)
 - Lower Body: Dynamixel MX-106 (5 per leg) and Dynamixel MX-64 (1 per leg)
- **Sensors:**
 - Camera: Point Grey Blackfly GigE
 - IMU: BNO055
 - Foot Pressure: 4 Strain Gauge Sensors per foot
- **Computing units:**
 - Low-level: ARM7 (stm32) 72MHz (Maple mini)
 - High-level: Intel NUC
 - * Intel Core i5 AMD 1.2 GHz Micro-6700T
 - * 8GB RAM
 - * SSD 256Go
- **Battery:** LiPo 4S (14.8v), 30C, 3200mAh
- **Operating System:** Ubuntu 22.04
- **Materials:**
 - Aluminium 2017, 3mm to 6mm, CNC Milled (main structure parts)
 - TPU, 3D Printed (protection bumpers)
 - HDPE 300mm, 1mm, laser cut and bent (body and feet protection)
 - PLA, 3D printed (cleats)