helveticrobot
Chur

LIDAR
- 10 Rounds/sec
- 785nm Wavelenght
- Esp32
- 1800 Measurements per sec

HALO
- Carbon Wafer
- 23 Grams
- Acting as Handle
- Fancy

BSA
Ballsensorarray
- 33 Sensors
- 3 Xmega A4
- Lightbarrier
- Own Design

MAINBOARD
- Strategy
- Astsam4e8c
- Communicates with all Sensors
- Own Design

DRIBBLER
- Dynamic
- 120 Grams
- Transmission: 2:1
- Printed + Carbon

KICKER
- DC Linear Motor
- 63 Grammes
- 24V
- FAULHABER

OMNIWHEEL
- 17 Subwheels
- Own Design
- 3D Printed
- Radius 20mm

MOTOR
- DC Brushless
- 60 Grams
- 12V
- FAULHABER

LISA
Linesensorarray
- 36 Sensors
- Atxmega32e5
- 18 LEDs
- Photo Transistors

CHASSIS
- Carbon
- 3D Printed Parts
- Epoxi
- Plastic Screws

TEAM

Helveticrobot is a robotic association from Grison in Switzerland, founded in 2005. Since 2009 Helveticrobot participates regularly at the RoboCup Junior competitions in Rescue B and Soccer Lightweight. From the last competitions our team returned home with some achievements in the discipline soccer. 2012 Helveticrobot won the title of the vice world champion and in the following two years the team got two awards in Best Robot Design and one in Best Teamwork. The highlights of the last years in the category Rescue B were the 3rd rank in Singapore 2010 and the 1st rank in Istanbul 2011. This year, we participate in physical LightWeight.

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ROBOT

Our robots use a RPLidarM1A8 range sensor and a compass to locate themselves. The sensor is placed high to see over other bots and the goal. Our drive system features three omni wheels, allowing movement in all directions. One of our latest improvements is a dynamic dribbler, allowing automatic height adjustment according to the carpet.

The ball gets kicked with a linear motor from our sponsor FAULHABER.

We improved our linesensorarrays again. The new iteration is equipped with 36 phototransistors and 18 LEDs.

Furthermore we redesigned our Atsam4E8C mainboard. More multiuse I/O pins for stuff like a buttonboard with feedback LEDs and eventually a buzzer. Most I²C ports have been removed. They aren't needed anymore because we scrapped the ultrasonic distance sensors.

Please feel free to ask a teammember for further information!

SPONSORS

FAULHABER

"We create motion"

Drive systems from FAULHABER are masterpieces of precision engineering and electromechanics at the limits of the technically feasible.