SocccerXY

Control unit

- Teensy 3.6 as main control unit
- Teensy 3.2 for the LiDAR sensors

Sensors

- 16x ground sensors
- SMD-Led + 2 phototransistors: line detection
- 4x Garmin LiDAR-lite 3: positioning on the field, especially the goalkeeper
- 1x Adafruit BNO055 compass
- 1x OpenMV Cam H7 + self-designed mirror
- 1x light barrier
- LED + BPW42 phototransistor

Actuator

- 4x Maxon DC motor with self-made omnidirectional wheels
- 1x solenoid shot
- 1x dribbler with Maxon DC motor, toothed belt and vertically movable roller

Software

- C or C++ with Arduino IDE

Special features

Bluetooth communication and dynamic goalkeeper-striker change: the robots have no fixed roles and talk to each other based on several values (position on the field/ distance to the ball/ direction to the ball/ time of the last change).

Low center of gravity and symmetrical weight distribution allow fast, powerful and accurate locomotion.