

Specification

Purchase of a robotic walking platform – a robot dog

A platform for research and development in the field of human-machine interaction and artificial intelligence with the following technical requirements:

Processors:

- motion controller: at least 4 cores, 1.5GHz each, RAM at least 2GB, Flash memory at least 32GB,
- sensor controllers: at least three controllers:

Two with at least a quad-core processor with a minimum of 2GB RAM, and with at least 128 CUDA cores (required for the development of artificial intelligence algorithms)

One with at least a six cores processor (21 TOPS, cache memory of at least 6MB L2 + 4MB L3) with a minimum of 8GB RAM, and with at least 384 CUDA cores (required for developing artificial intelligence algorithms)

Vision sensor system - at least 5 cameras (fish-eye 150x170 degrees, depth cameras) placed at least in the front and side locations

Proximity sensors: ultrasound, at least in the front and rear, with a range of at least 2m

Joint motors: thighs weighing 500 g and torque of at least 22Nm; bends with a torque of at least 35 Nm

The ability of the platform to move in a plane inclined by at least 30 degrees.

Degrees of freedom of movement for 4 legs: 3 per leg (12 total)

Robot limb pressure sensor: 4 pieces (one per leg)

Load capacity: at least 4kg Maximum speed: at least 3.6m/s

Battery: two pieces (one with a capacity of at least 6000mAh plus the other with a capacity of at least 9000mAh), each allowing the robot to work for at least 30 minutes, 24V power supply, docking station, and power adapter

Dimensions:

- when unpacked, not smaller than 60cm x 25cm x 40cm and not bigger than 80cm x 40cm x 50cm
- packed (transport) no larger than 60cm x 30cm x 20cm

Weight: no more than 13 kg.

A bag/suitcase or another packaging to carry the robot.

Hardware interfaces: HDMI (at least 2), USB (at least 2), Gigabit Ethernet, SIM card slot

Loudspeaker: at least 2W

Wireless remote controller

Warranty: at least 12 months

Interfaces and software:

- Scientific programming interface.
- Programming interface for Python.
- At least 4G class communication interface.
- Robot hardware expansion interface.
- Human sensing software.
- Software for a remote device or for a browser for needs of robot communication and management.
- Robot joint, direction and speed control software with support via open ROS (Robot Operating System) interfaces.
- Ability to attach lidar or radar.