

Software Survey 2026

Team name

Tech United

Which division(s) are you applying for? If your used software differs between divisions, please fill out the survey once per division.

Large Size (height < 190 cm, weight < 80 kg)

Is your software fully or partially OpenSource? If so, where can it be found?

Yes, will be available after the tournament on: <https://gitlab.tue.nl/tech-united-eindhoven>

Are you using any software developed by other teams? If so, list every component that you are reusing and the team that originally developed it.

We are using the software that was provided by Booster Robotics as a basis:

<https://github.com/BoosterRobotics>

Are you using any datasets in your research? If you are using your own datasets, are they public?

Datasets provided by Booster Robotics.

Please list the scientific publications your team has made since the last application to RoboCup (or if not applicable in the last 2 years).

<https://link.springer.com/article/10.1007/s10846-025-02334-0>

Are there any other contributions you would like to share with the RoboCup community?

Development of open-source battery module for Booster T1:

<https://grabcad.com/library/booster-t1-power-supply-1>

Which approach are you using to generate the robot walking motion?

We are using the RL framework for developing our own motion skills next to the provided skills by Booster Robotics

Which approach are you using to generate other motions of the robot (e.g. kicking, standing up)?

Similar to the answer above, so: We are using the RL framework for developing our own motion skills.

Do you have a kinematic or dynamic model of your robot? If so, how did you create it (e.g. measure physical robot, export from CAD model)?

Yes, the URDF was provided by Booster Robotics

What approaches are you using in your robot's visual perception?

Stereo-image fused with other sensor information, such as IMU and encoder.

Are you planning with objects in Cartesian or image space? If you are using Cartesian space, how do you transform between the image space and cartesian space?

We are making a transformation towards robot base frame (cartesian-based) for planning with objects.

Do you have some form of active vision (i.e. moving the robots camera based on information known about the world)?

We actively keep track of our state to know where the most features are that could be used for localisation.

What approach are you using to localize your robot?

Features on the field, combined with information about the goal posts

Is your team performing team communication? Which communication protocol are you using?

Wi-Fi protocol

What approach are you using for navigation? Are you avoiding obstacles?

We are adapting the setpoint generator based on the one that was created for the MSL robots, which takes into account obstacle positions and velocities.

How is the behavior of your robots structured? (e.g. Behaviour Trees)

We are adapting the Strategy Tactics Play framework that was created for the MSL robots, for our advanced team play.

Are you simulating your robot? If so, which simulator are you using and for what purpose do you use simulations?

We are using the light-weight strategy simulator that was created for the MSL robots to keep track of all the robot's states.

What operating system is running on your robot and which middleware are you using (for example Ubuntu 22.04 and ROS2 Galactic)?

Ubuntu 22.04, ROS2 Humble

Is there anything else you would like to share that did not fit any previous question?

The software architecture will be interoperable between both our legged systems as well as our wheeled systems for platform agnostic operations.