

Humanoid League Team Questionnaire for RoboCup 2013

On behalf of the Humanoid League Technical Committee this questionnaire was sent out on the 17th of September 2012 to collect feedback from all Humanoid League teams to get an overview of the state of the league, as well as receive feedback regarding the rule changes planned for 2013.

The questionnaire was closed on the 28th of September 2012, at which time 18 teams had submitted their response.

This evaluation was done on the 8th of October 2012.

The Humanoid League's website can be found at

<http://www.tzi.de/humanoid>

For discussion of the survey results, please join the Humanoid League Mailing list at

<https://lists.cc.gatech.edu/mailman/listinfo/robocup-humanoid>

The Humanoid League Technical Committee can be reached via email at

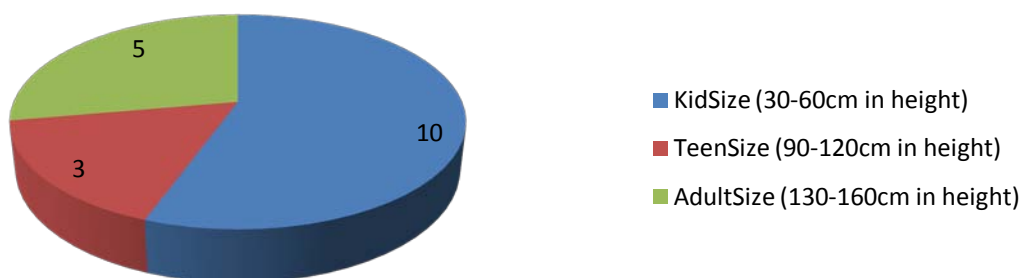
rc-hl-tc (at) lists.robocup.org

The Humanoid League Technical Committee thanks Stefan Tasse and the Standard Platform League's Technical Committee for the basis of this survey and the template for the results.

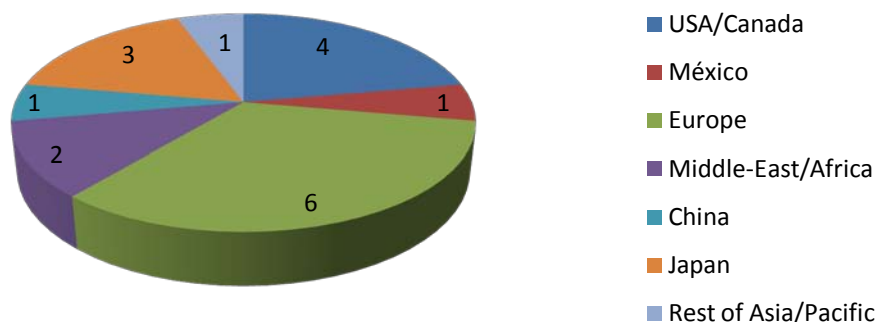
Humanoid League Overview

The following data is for the teams that have participated in this survey. Based on participation in RoboCup 2012 in México, the majority of Teen and Adult Size teams submitted a response. The number of responding Kid Size teams, however, was less than 50% of RoboCup 2012 participants.

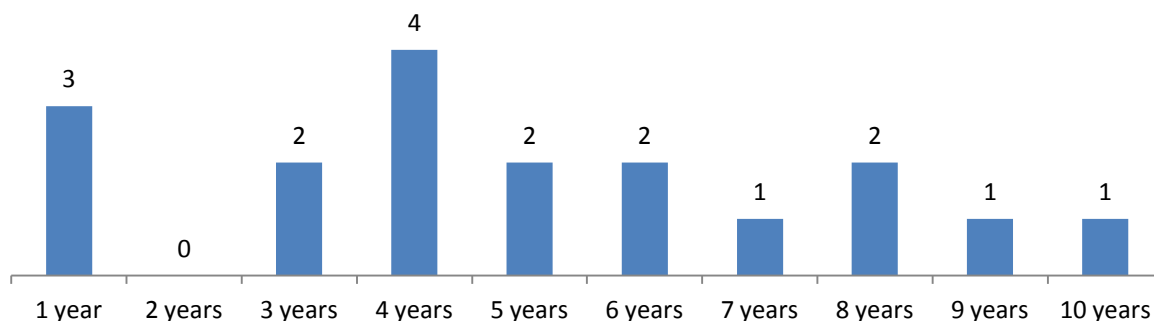
Which sub-league is your team in?



Which region of the world is your team coming from?



Age of your team / code base in years

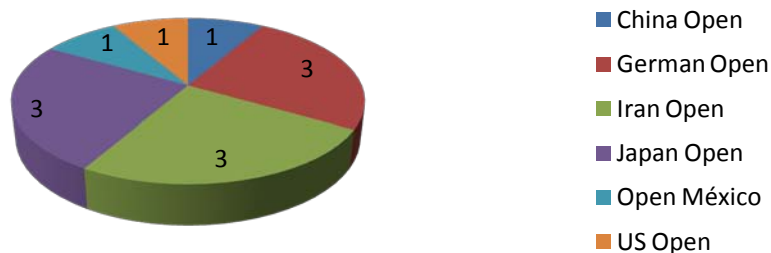


RoboCup Participation

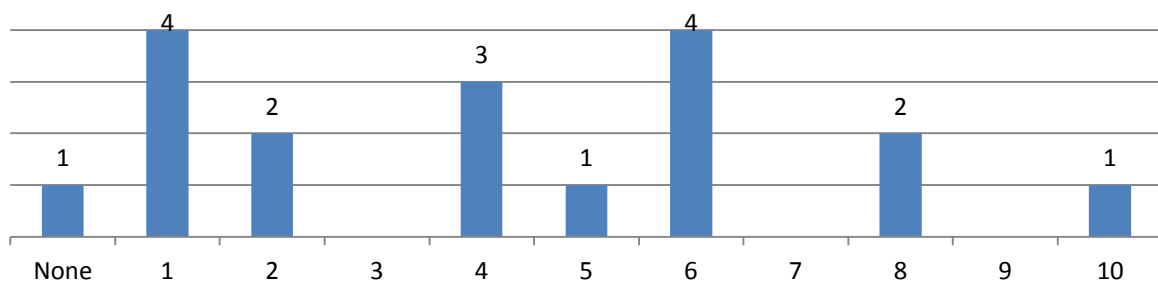
Does your team intend to participate in the Humanoid League at RoboCup 2013 in Eindhoven, The Netherlands (June 24-30, 2013)?



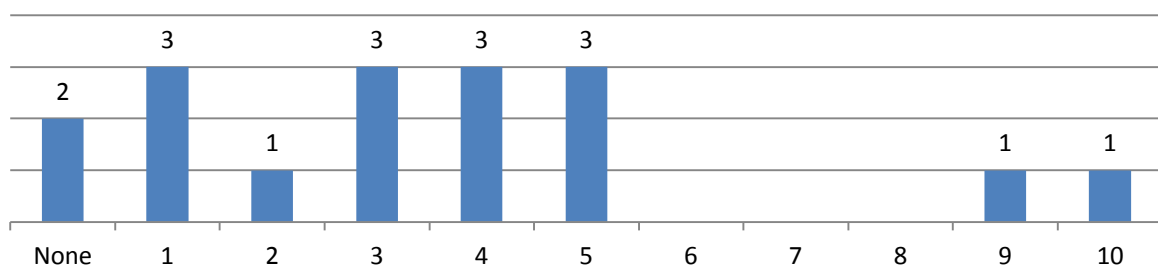
Does your team intend to participate in the Humanoid League at local competitions? If yes, which ones?



In how many previous RoboCup competitions (without local ones) did your team participate in the Humanoid League?



In approx. how many previous local RoboCup competitions did your team participate in the Humanoid League?

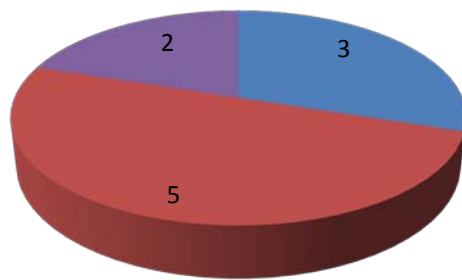


Rule Changes for KidSize

Field Size

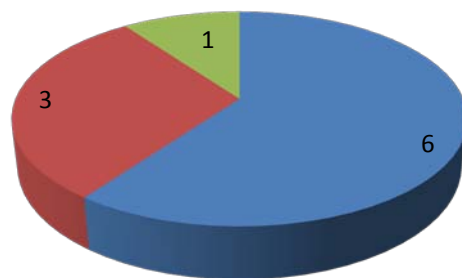
During the team leader meeting in Mexico City, playing on TeenSize fields (9x6 meter) was proposed. In an unofficial vote, a significant number of teams showed interest to switch to such a larger field.

Are you in favor of switching to a TeenSize field for KidSize?



- Yes, for 2013.
- Yes, for 2014.
- No, but an intermediate size would be fine.
- No, we believe the KidSize field to be perfect.

What field space do you have regularly available at your location?



- We only have space for a KidSize field.
- We do at most have space for half a KidSize field.
- We only have space available during e.g. semester breaks.
- We have the space for a TeenSize field.

Additional Comments

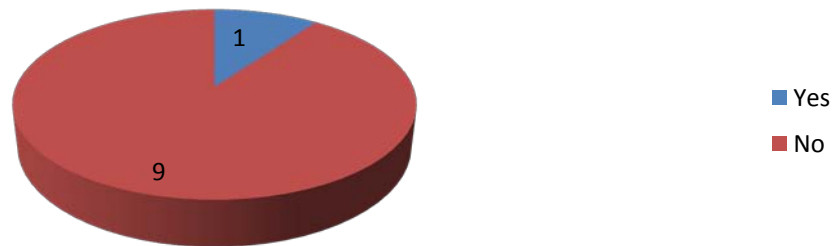
- We believe that it's not a good idea to switch to TeenSize field for KidSize league, for the following reasons :
 1. It will decrease the number of participating teams and by that fewer teams will contribute to the common research goal.
 2. We believe that there are a lot of higher priority research goals that still need to be overcome before increasing the field size.
 3. Teams like us, lack the physical space to hold a full TeenSize field which will make it difficult to test and develop our robots under "real" field conditions

Adjustments in case of larger fields

Due to space and financial constraints, larger fields for the KidSize may mean to have fewer fields. Assuming KidSize will play on TeenSize fields in 2013 and the number of fields will be less, what possible options can you envision on how to deal with this situation effectively?

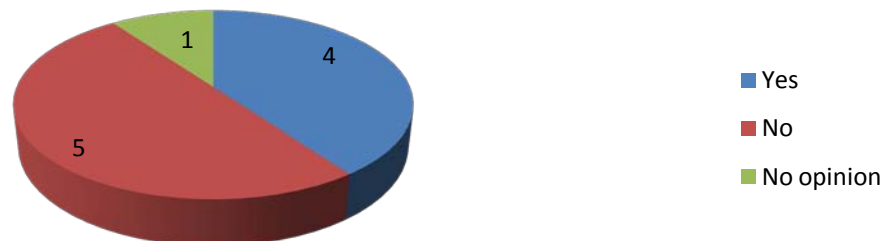
Decrease number of qualified teams.

Decreasing the maximum number of qualified teams (from currently at most 24) means that less games will have to be played and thus fewer fields may be sufficient.



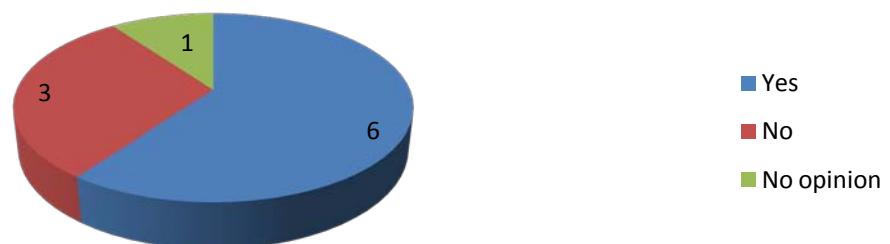
Remove Round Robin 2

Removing Round Robin 2 and changing Round Robin 1 for fewer teams to advance (i.e. more teams are out after the first round) means that less games will have to be played and thus fewer fields may be sufficient.



Start games on 2nd setup day

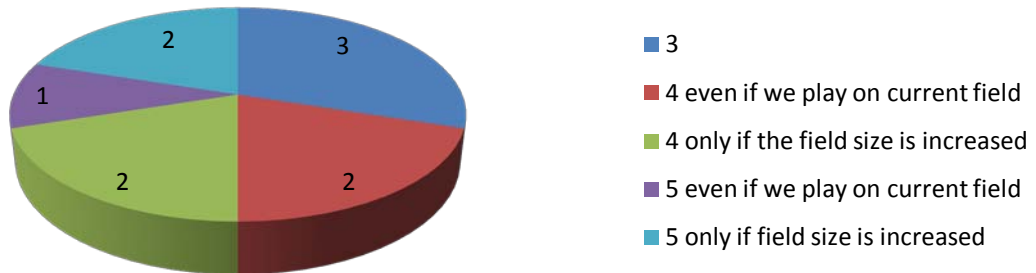
Starting with a pre-round robin / qualification round on the second setup day could spread the number of games over an additional half or full day, or this new round could be used to reduce the number of subsequent games by advancing fewer teams.



Team Size

In the team leader meeting at RoboCup 2012 in México, a majority of teams expressed their interest in playing 4vs4 games. As the vote was unofficial and combined with the field size increase, we would like to ask your opinion again.

How many players should there be per team?



Additional Comments

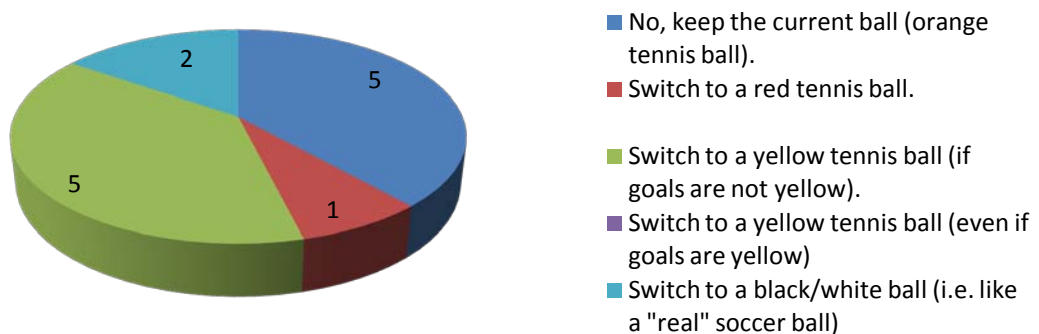
- Increasing the number of robots will make the competition more expensive, especially if you have to take into account extra spare robots and parts. In the current KSL field size the field will be too cluttered with robots making the game less entertaining.

Ball color

In the RoboCup 2012 team leader meetings, a majority of votes was cast to use identical goals, similar to the SPL. Changing the setup of the goals may be an opportunity to also change the ball color.

Should the ball color be changed?

More than one option was selectable, so percentages may add up to more than 100%.



Additional Comments

- No matter what will be decided, teams should have the option to purchase the official ball from a supplier.

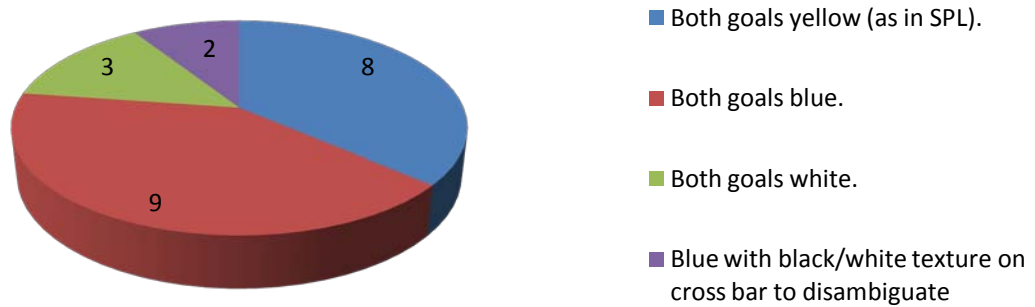
Rule Changes (Kid, Teen and Adult Size)

Goal Color

In the team leader meeting, a change from blue/yellow goals was decided. The new goals will be of uniform/solid colors and both goals will be identical.

What goal color do you feel is best suited for the league at this time?

More than one option was selectable, so percentages may add up to more than 100%.



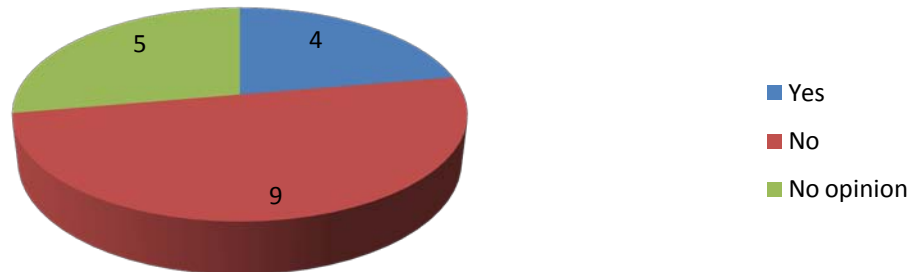
Additional Comments

- We think that no matter what, it is important to keep the color of the goals different from the color of the ball and the robot team color tags.
- We think that blue is the best choice for goal color so that the KidSize ball can be yellow and the goal posts still have a distinctive color.

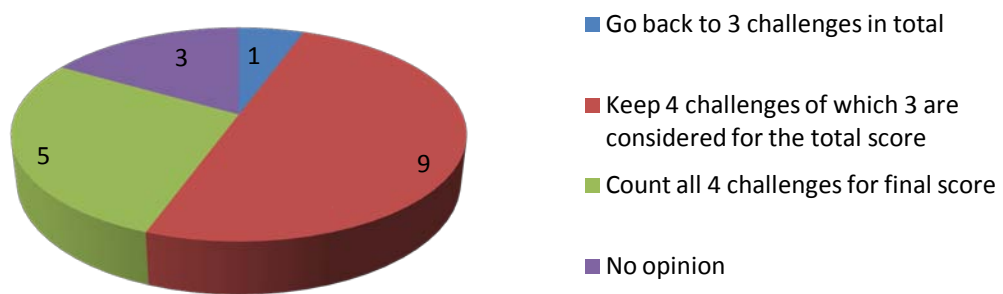
Technical Challenges

Open Challenge

Would you consider an "Open Challenge" (similar to the SPL)? Keep in mind that this kind of challenge is more difficult to schedule as it could not run in parallel but must be held sequentially (possibly over the course of multiple days) to allow the other teams to observe.



Number of challenges



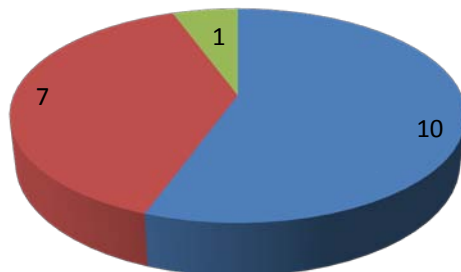
Additional Comments

- As typically only a low number of participants compete in the Technical Challenge and only rarely complete one, we think that the choice of 3 challenges out of 4 is beneficial.

Other rule changes

Game Stuck

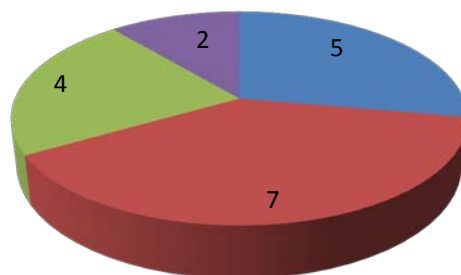
Rule 8.3.1 describes the game stuck situation, where the game will restart with a dropped ball "if there is no progress of the game for 30s".



- No change. Allow referees some interpretation space in their decision what "no progress" means.
- Specify a more precise/measurable criterion, e.g. "ball has not moved".
- No opinion.

Pushing

The rules prohibit aggressive play and pushing, however due to ambiguity this often is not enforced by the referees at the moment.



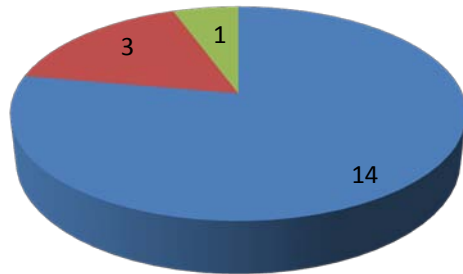
- Keep pushing rules as they are.
- Keep pushing rules as they are but train referees to recognize pushing better and more consistently.
- Add better definition of what constitutes pushing (please add your suggestion in comment section below).
- No opinion

Additional Comments

- Pushing should be punished more consequentially to avoid robot damage and to improve the collision avoidance algorithms of all teams.
- Pushing is the movement through another Robot if the robot is not on its way directly towards the ball. The only case where it is ok to "touch" is if the val is between the robots.
- Pushing could be defined:
 - to only apply to robots which are not the two (one per team) closest to the ball or
 - as pushing another robot from behind
- Direct or indirect (through ball) contact

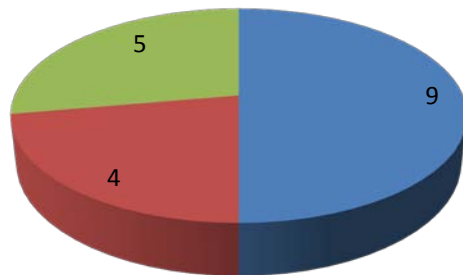
Game Controller

Does your team use the GameController for ready/set/play commands?



- Yes.
- Not yet, but we will implement it for RoboCup 2013.
- No, and we do not plan to support it in the near future.

Do your robots react on the penalty information sent by the GameController?



- Yes, they will stop moving when penalized.
- Not yet, but we will implement it for RoboCup 2013.
- No, and we do not plan to support it in the near future.

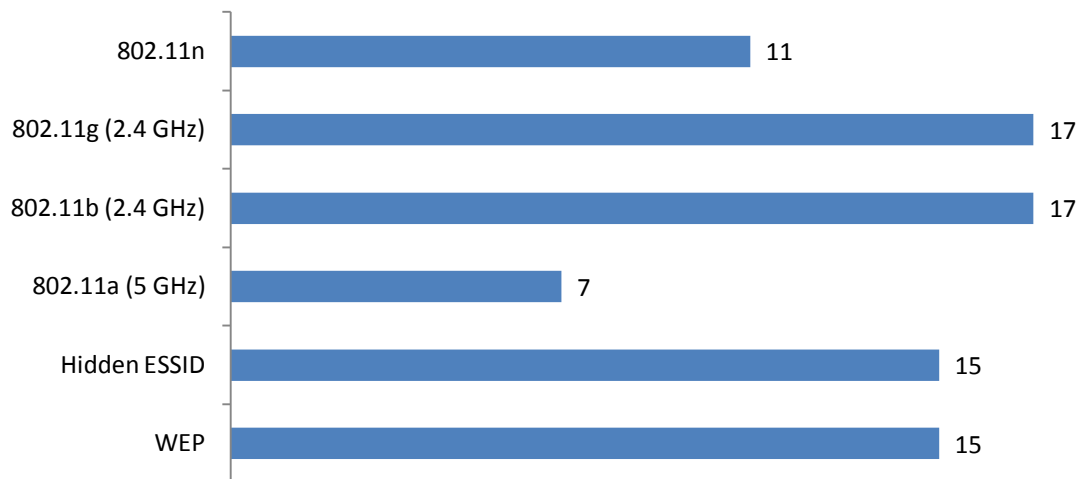
Additional Comments

- We wish our robots were allowed to leave the field autonomously when penalized.

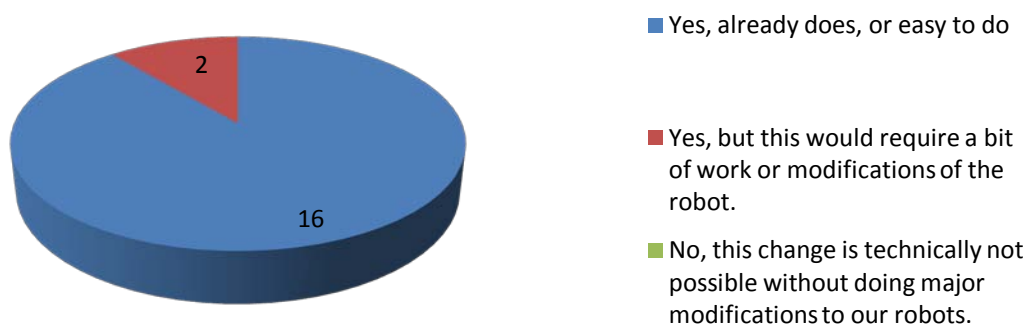
Wireless

The WiFi quality at RoboCup events is a constant cause of problems. In order to mitigate the problems, several approaches are possible and the Technical Committee would like to get an idea of the support of the teams and their hardware.

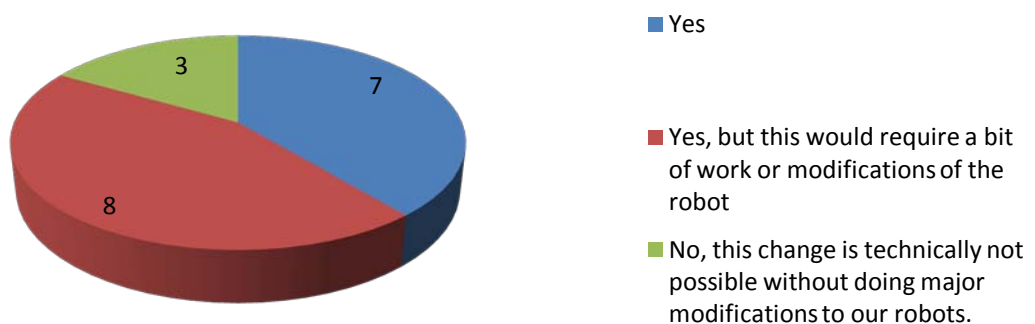
What WiFi features and protocols do your robots support?



Would it be possible (e.g. by updating your software) to support WEP or hidden ESSID in your robots?



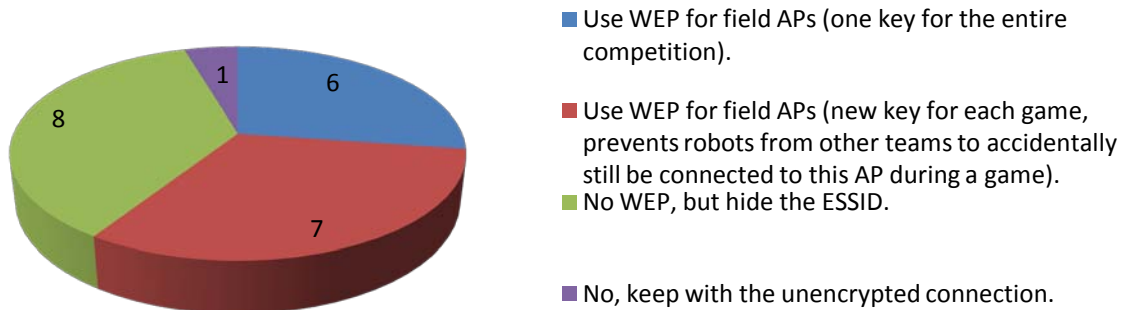
Would it be possible (e.g. by using or replacing a WiFi USB dongle) to support additional 802.11 standards in your robots?



Securing WiFi access

To minimize interference during games, we may want to protect the access points for the fields to e.g. prevent the phones of spectators to accidentally connect.

More than one option was selectable, so percentages may add up to more than 100%.

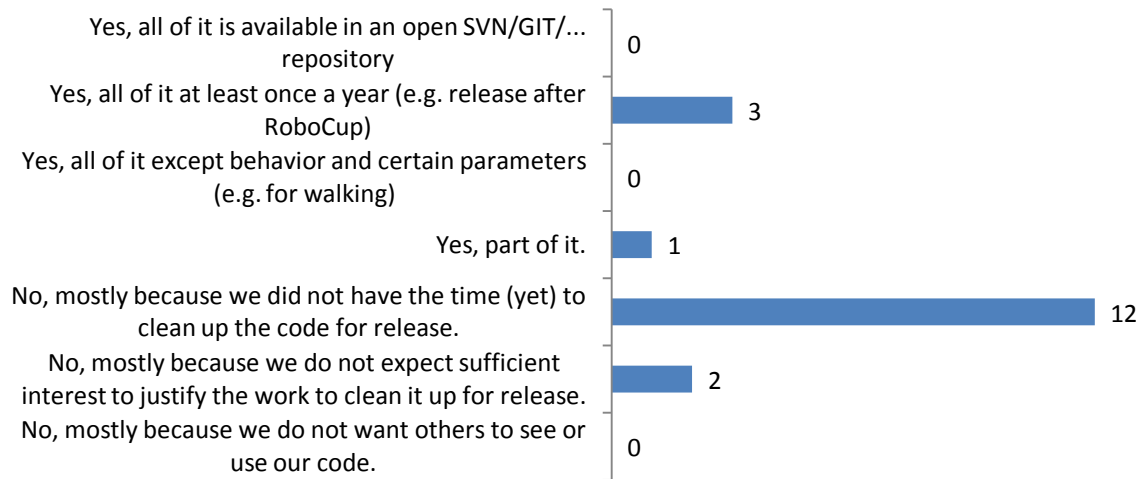


Additional Comments

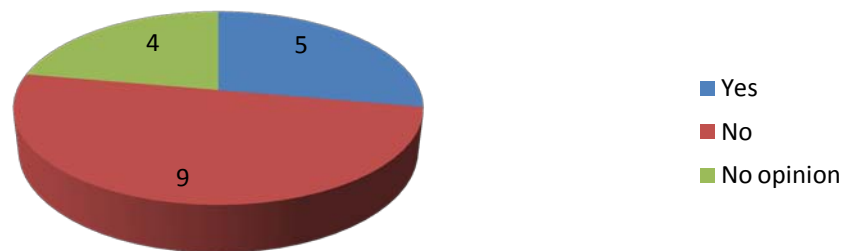
- We prefer to stick with an unencrypted connection, because it would complicate the configuration of robots and it would most probably not solve the issues with the wireless communication.

Source Code Release

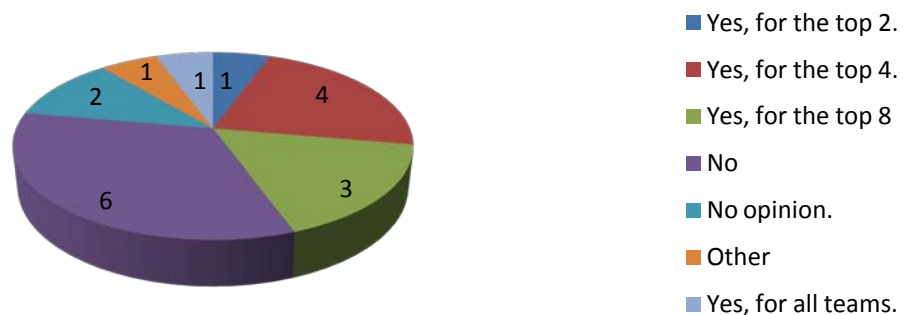
Does your team currently release its code?



Should the release of source code be mandatory for ALL teams (excluding behavior and parameters)?



Should the release of source code be mandatory for the TOP teams (excluding behavior and parameters)?

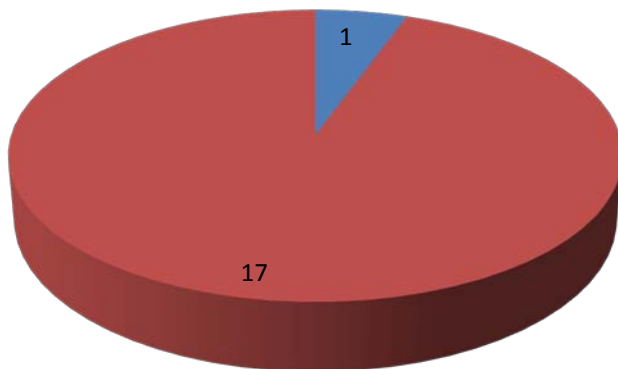


Other: The release of source code should not be mandatory for any team, but it should be provided 'as is' upon request of another team.

Additional Comment

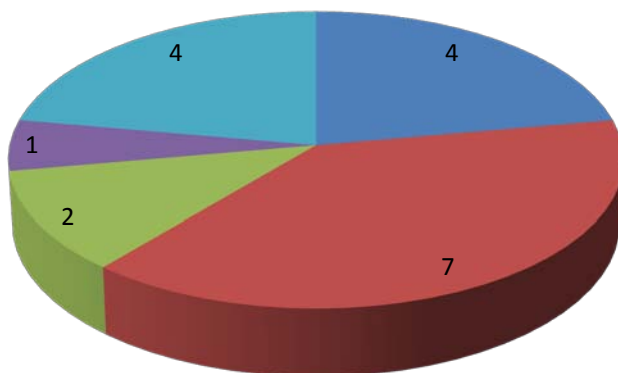
- As long as RoboCup is focused on a common goal (winning against a human team), we think that mandatory code release would be beneficial for the entire league.

Does your team currently use code released from other teams?



- Yes, but only framework or infrastructure code.
- No, we use only our own code
- Yes, including cognition or motion control code, but this is still a small fraction of our whole code.
- Yes, including cognition or motion control code, and it is a significant part of our current code.
- Yes, our current code is mostly based on other's published code, which we use as a starting point for our own research

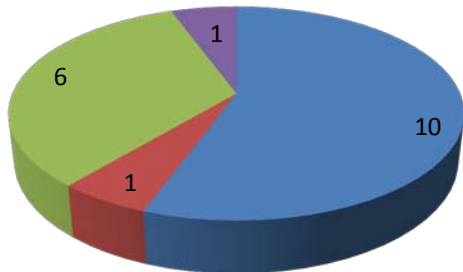
Should there be rules against teams which participate using "mostly" code from other teams?



- All usage of published code should be allowed without any restriction (as long as it complies to the terms and conditions of the publisher). This enforces enough progress that previous year's winner-code will be beaten by most teams.
- Teams using other's code at RoboCup should be required to conclusively show their own contribution to get qualified for the next RoboCup.
- Even new teams which want to use other's code should be required to conclusively show their own contribution BEFORE they are qualified for participation at a RoboCup.
- All teams should be required to hand in their code to verify the originality of at least a certain amount of their source code.
- No opinion

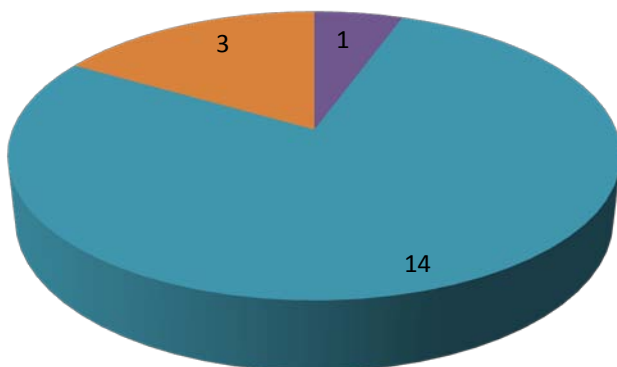
Software Framework

Would you like a standard robot software framework for the Humanoid League to support the exchange of software between teams?



- Yes, but strictly optional and voluntary.
- Yes, and after some time it should be mandatory for all teams.
- No, framework development is part of the research aspect and should remain the responsibility of each team.
- No opinion.

Which software framework are you currently using?



- ROS (Robot Operating Framework)
- Orocos (Open Robot Control Software)
- GermanTeam framework (Bremen version, e.g. from B-Human code release)
- GermanTeam framework (Berlin version, e.g. from NaoTH project "Multi-platform robot controller")
- We use our very own framework which is none of the above and which nobody else is using or developing besides us.
- Other

Other:

- 95% Own, 5% German Team
- RoboFrame developed by us, available on request and used by a few teams in other leagues
- Robotis Darwin-OP framework

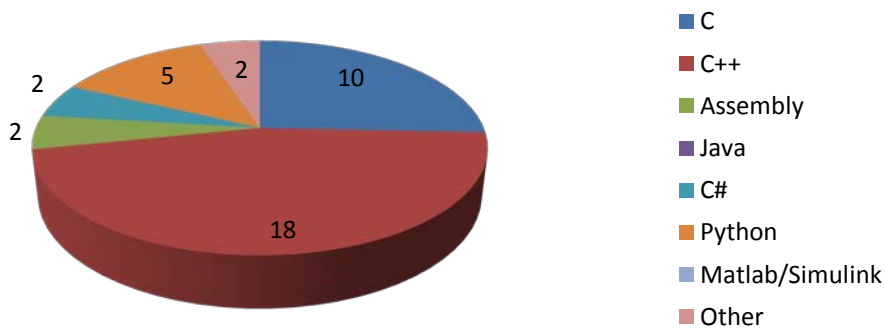
Additional Comment

- Although we are still using RoboFrame for legacy reasons, we would advise to make ROS the standard framework, because this is what we are using for all other projects at our group.

Software Development Environment

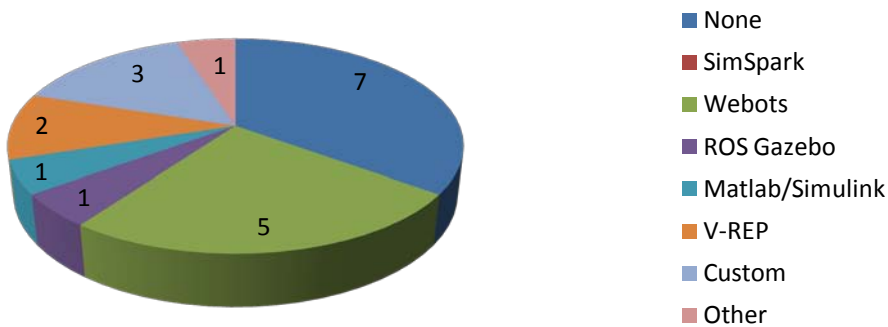
What language(s) is your robot software written in?

More than one option was selectable, so percentages may add up to more than 100%.



What simulator do you use?

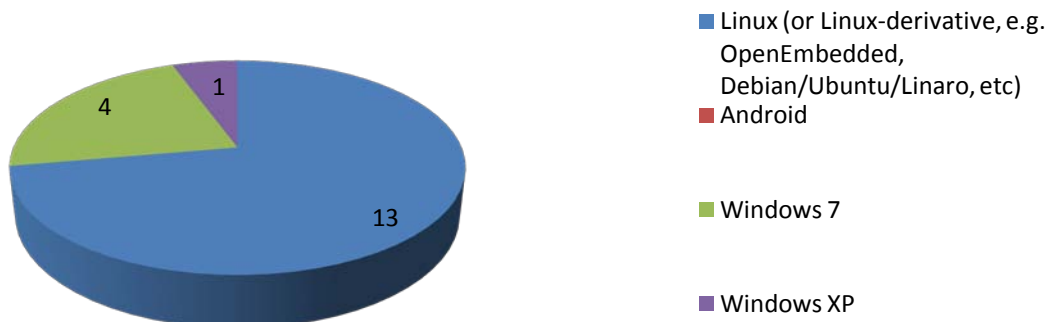
More than one option was selectable, so percentages may add up to more than 100%.



Other:

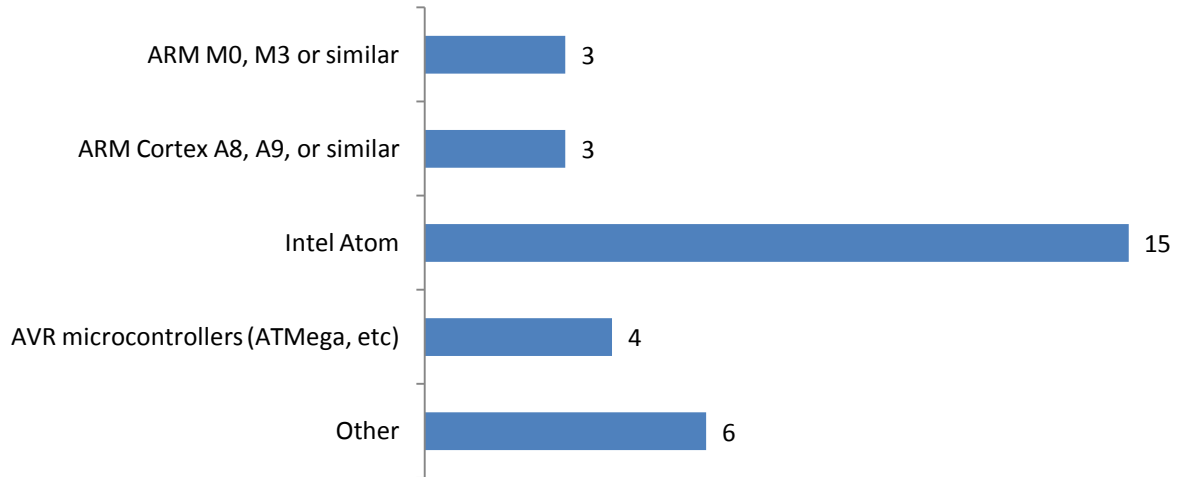
- Gazebo (regular non-ROS)

What operating system runs on your robots?



Hardware - Processors

Which microcontrollers/processors are used in your robot?

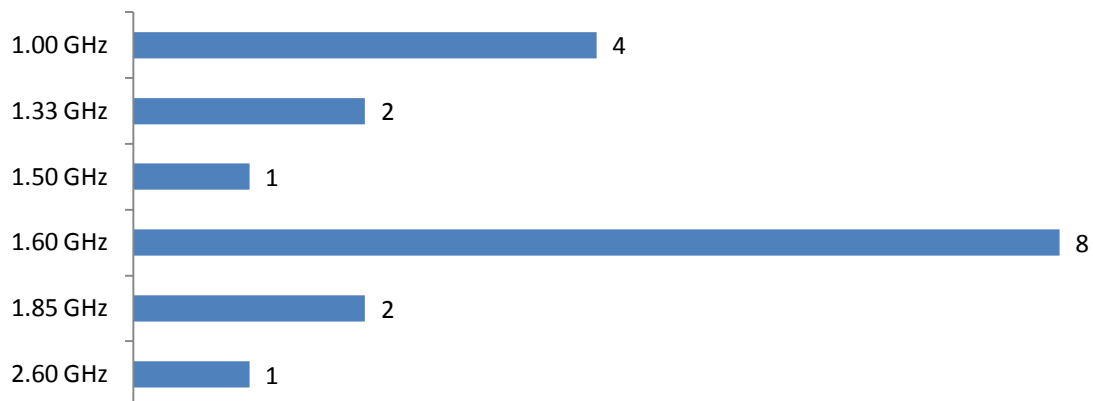


Other: Blackfin, Intel Core Solo, Intel Core Duo, Renesas SuperH, SH2

How many cores does your robot's CPU have?



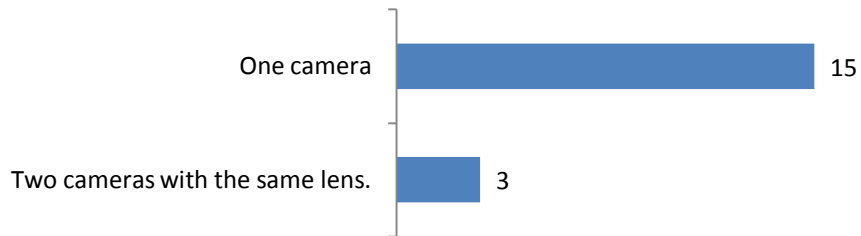
What is your robot's CPU clock speed in GHz



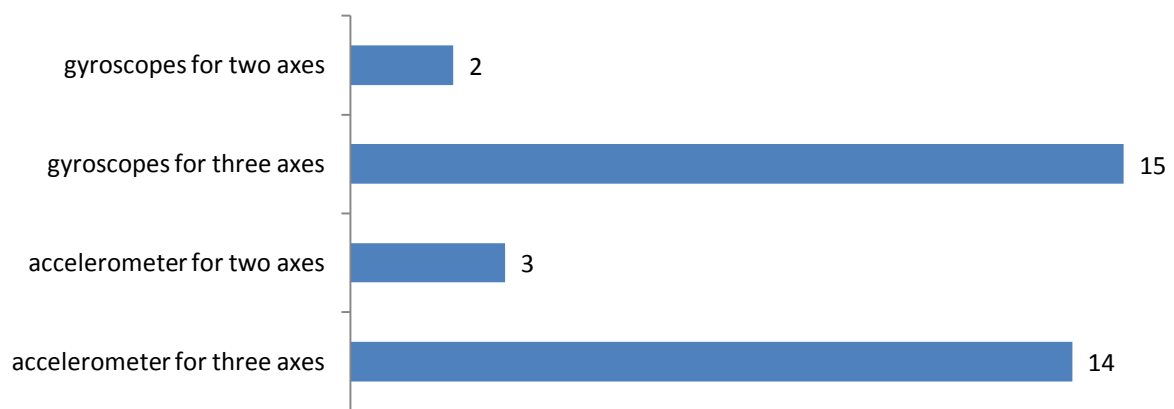
Average: 1.5 GHz

Hardware – Sensors

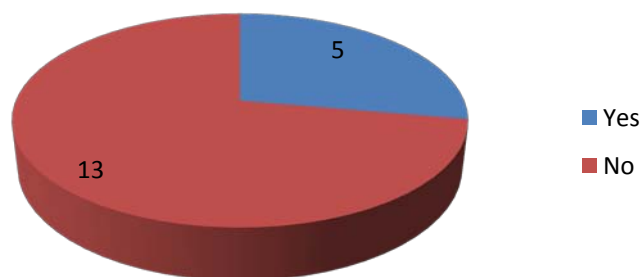
How many cameras does your robot have?



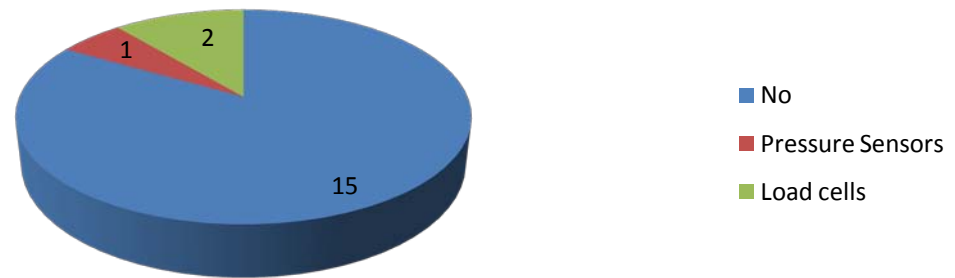
What kind of inertial measurement sensors does your robot have?



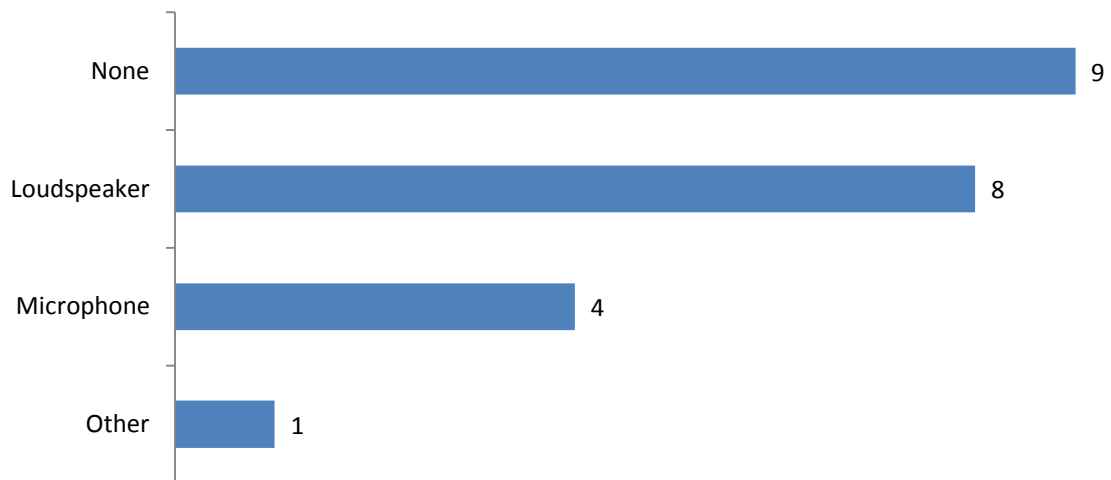
Does your robot use a magnetometer (e.g. as part of an IMU) or a compass?



Does your robot have sensors to determine ground contact of the feet?



What other sensors, besides actuator feedback, does your robot utilize?



Other: Buttons