

国际机器人竞赛 组织、管理架构

RoboCup Middle Size League
2017 ~ 2019 OC Chair
Fei Liu

RoboCup中型组
2017~2019国际组织委员会主席
刘斐



主要内容

- 1 RoboCup项目组织架构
- 2 RoboCup项目组织管理
- 3 RoboCup竞赛现场管理
- 4 几点启示



PART 01

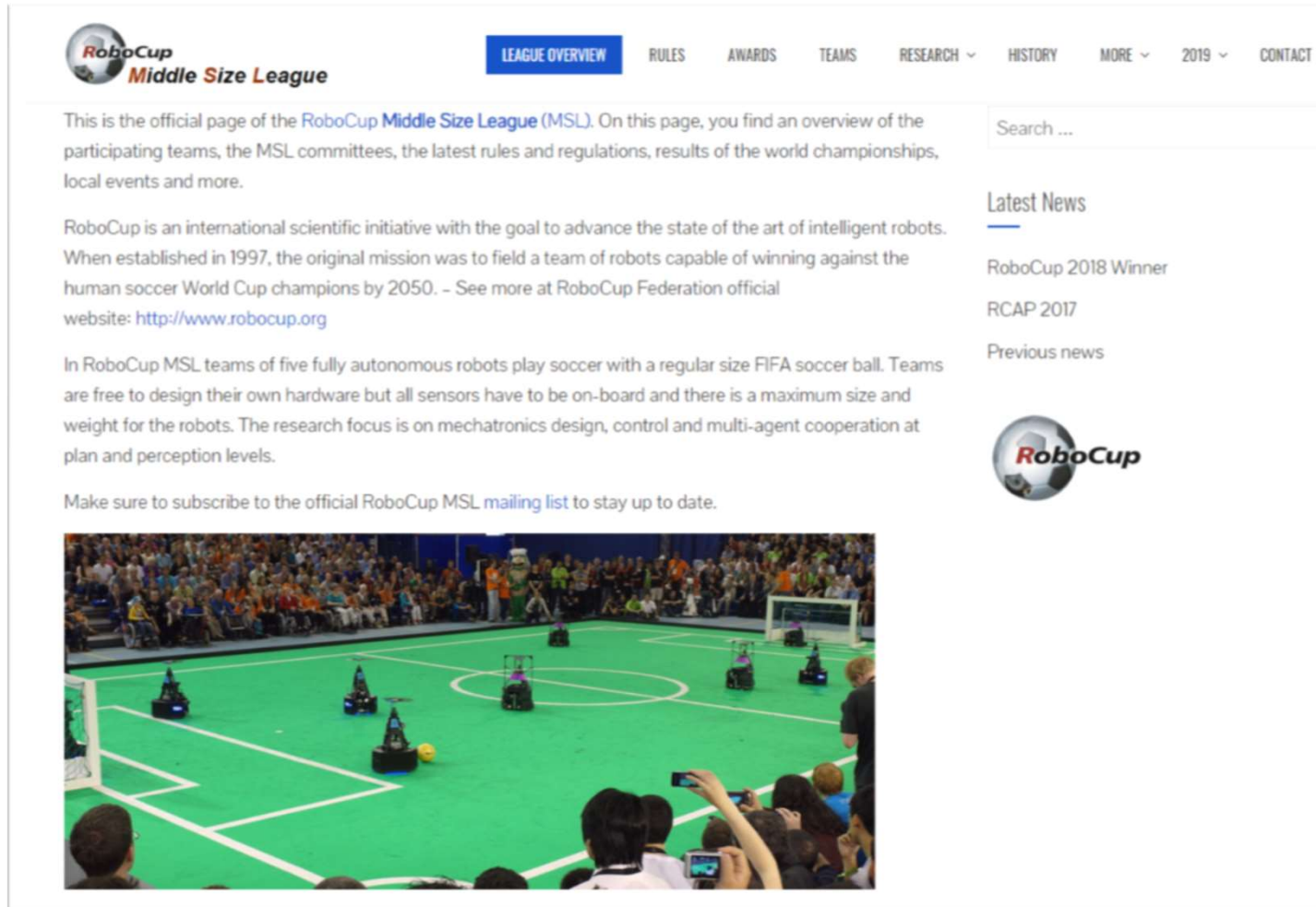
RoboCup项目组织架构

PART 01 RoboCup项目组织架构



<https://www.robocup.org>

PART 01 RoboCup项目组织架构



The image shows a screenshot of the RoboCup Middle Size League (MSL) website. At the top left is the RoboCup logo with the text "RoboCup Middle Size League". To the right is a navigation menu with links: LEAGUE OVERVIEW (highlighted in blue), RULES, AWARDS, TEAMS, RESEARCH, HISTORY, MORE, 2019, and CONTACT. Below the navigation is a search bar with the text "Search ...". The main content area contains three paragraphs of text. The first paragraph introduces the MSL as the official page for the RoboCup Middle Size League (MSL), mentioning participating teams, MSL committees, rules, regulations, world championships, and local events. The second paragraph describes RoboCup as an international scientific initiative to advance intelligent robots, established in 1997, with a mission to field a team of robots capable of winning against the human soccer World Cup champions by 2050, and provides the website URL <http://www.robocup.org>. The third paragraph explains that MSL teams use five fully autonomous robots to play soccer with a regular size FIFA soccer ball, and that teams are free to design their own hardware but must have sensors on-board and adhere to size and weight restrictions. Below the text is a link to the official RoboCup MSL mailing list. On the right side of the page, there is a "Latest News" section with links for "RoboCup 2018 Winner" and "RCAP 2017", and a "Previous news" section. At the bottom right of the page is a RoboCup logo. At the bottom of the screenshot is a photograph of a RoboCup MSL match in progress, showing several robots on a green field with a yellow ball, and a crowd of spectators in the background.

RoboCup Middle Size League

LEAGUE OVERVIEW RULES AWARDS TEAMS RESEARCH HISTORY MORE 2019 CONTACT

This is the official page of the [RoboCup Middle Size League \(MSL\)](#). On this page, you find an overview of the participating teams, the MSL committees, the latest rules and regulations, results of the world championships, local events and more.

RoboCup is an international scientific initiative with the goal to advance the state of the art of intelligent robots. When established in 1997, the original mission was to field a team of robots capable of winning against the human soccer World Cup champions by 2050. – See more at RoboCup Federation official website: <http://www.robocup.org>

In RoboCup MSL teams of five fully autonomous robots play soccer with a regular size FIFA soccer ball. Teams are free to design their own hardware but all sensors have to be on-board and there is a maximum size and weight for the robots. The research focus is on mechatronics design, control and multi-agent cooperation at plan and perception levels.

Make sure to subscribe to the official RoboCup MSL [mailing list](#) to stay up to date.

Search ...


Latest News

[RoboCup 2018 Winner](#)

[RCAP 2017](#)

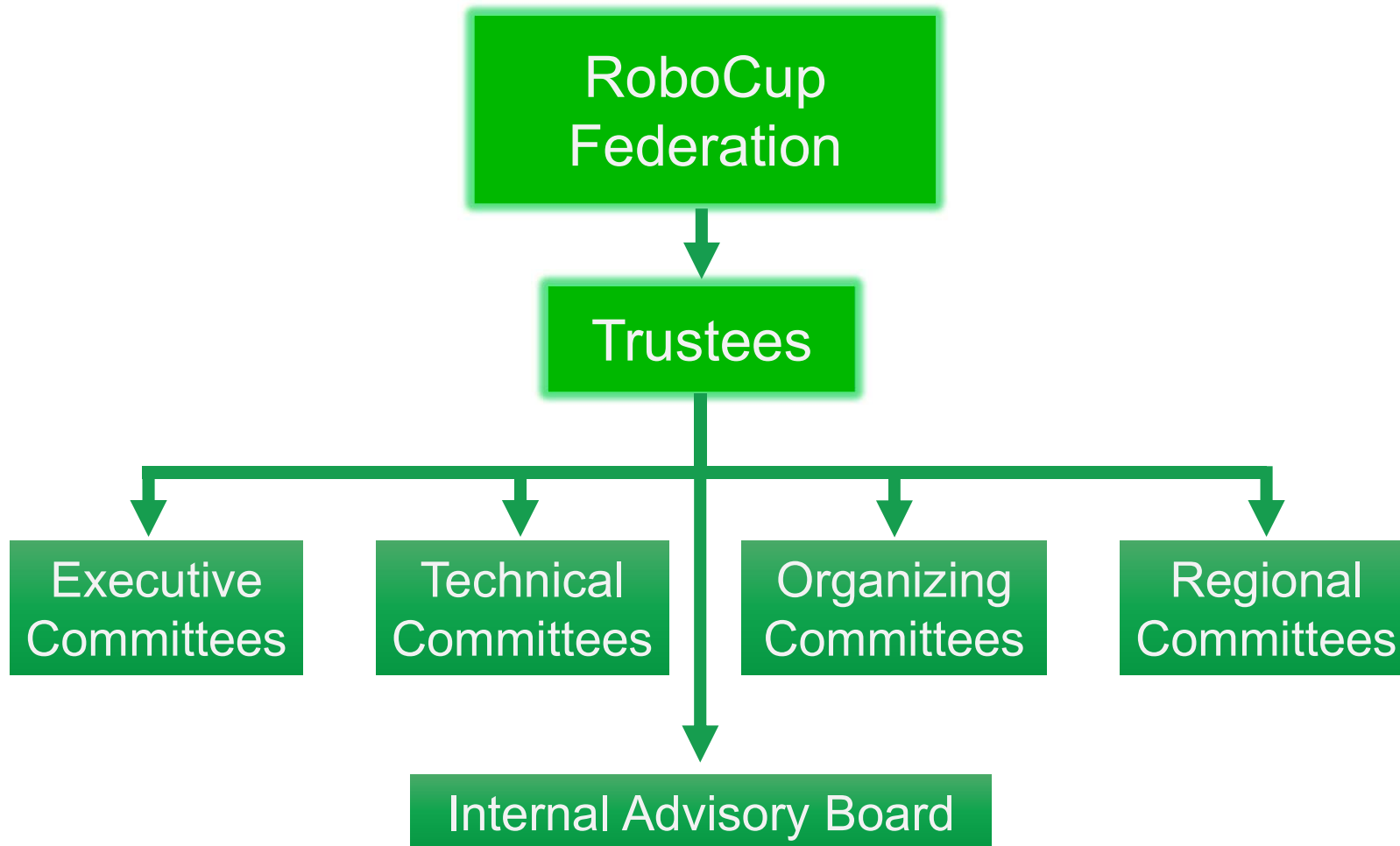
[Previous news](#)

RoboCup



<https://mssl.robocup.org>

PART 01 RoboCup项目组织架构





PART 01 RoboCup项目组织架构

Executive
Committees

Technical
Committees

Organizing
Committees

RoboCup Soccer
Humanoid
Standard Platform
Middle Size
Small Size
Simulation 2D
Simulation 3D

RoboCup@Home
Open Platform
Domestic Standard Platform
Social Standard Platform

RoboCup Rescue
Robot
Simulation

RoboCup Junior
Soccer
OnStage
Rescue

RoboCup Industrial
RoboCup@Work
Logistics



PART 01 RoboCup项目组织架构

RoboCupSoccer - Middle Size

Executive Committee	Technical Committee	Organizing Committee
Wouter Houtman	Bernardo Cunha	Fei Liu
Seyed Ehsan Marjani Bajestani	Yifei Han	Moeko Tominaga
Junhao Xiao	Edwin Schreuder	Shunxin Zhang
		Zhiqian Zhou

项目组织架构



PART 02

RoboCup项目组织管理



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

Mail List

robocup-mid : robocup-mid@cc.gatech.edu

robocup-worldwide : robocup-worldwide@cc.gatech.edu

MSL TC: rc-msl-tc@lists.robocup.org

MSL OC: rc-msl-oc@lists.robocup.org

邮件列表



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

Workshop 技术研讨会

8th Edition, Aveiro 2018

7th Edition, Eindhoven 2017

6th Edition, Kassel 2016

5th Edition, Aveiro 2015

4th Edition, Eindhoven 2014

3rd Edition, Kassel 2013

2nd Edition, Stuttgart 2009

1st Edition, Kassel 2008

PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

Workshop



PART 02 RoboCup项目组织管理



RoboCupSoccer - Middle Size

Workshop

Robocup MSL workshop 2017

Ton Peijnenburg¹, Jaap Vos², Wouter Kuijpers³, Ricardo Dias⁴

¹VDL Enabling Technologies Group, Eindhoven, ²ASML, Veldhoven, ³Eindhoven University of Technology, ⁴University of Aveiro



INTRODUCTION

Tech United Eindhoven, ASML, Falcons and VDI, Robot Sports hosted the 7th International RoboCup Middle Size League Workshop. The workshop was held at the 16th, 17th and 18th of November, in Eindhoven, the Netherlands.

OBJECTIVES AND PROGRAM

Thursday, 16th November
A mini-symposium was held at the Eindhoven University of Technology, where the participating teams showed their latest improvements and a guest speaker talk by Nuno Lau of CAMBADA explaining the details of the simulation leagues.


Friday, 17th November
The second day took place at the ASML Falcons and VDI Robot Sports MSL practice field. This day was dedicated to a joint brainstorm on a common MSL simulator. The results of this session can be found in the Wiki of the project repository.

Saturday, 18th November
The third day featured the wrap-up session. Teams were assigned to the MSL simulator tasks and a discussion about the league roadmap followed. The participants also came up with a list of proposals for rule changes for 2018, which is to be delivered to the Technical Committee in charge. After lunch, a mini-tournament of friendly matches began.

Sunday, 19th November
The morning was dedicated to more matches of the mini-tournament.

MSL simulator

The MSL Simulator is a joint effort of multiple active teams in the MSL, in building a simulator tailored for the RoboCup MSL league. The first efforts in running simulated versions of MSL matches between different teams were made in the MSL Workshop 2016 (Kassel, Germany) and a thorough discussion on the requirements and technologies to use was continued in the MSL Workshop 2017 (Eindhoven, Netherlands).



FINDINGS

Simulator Server

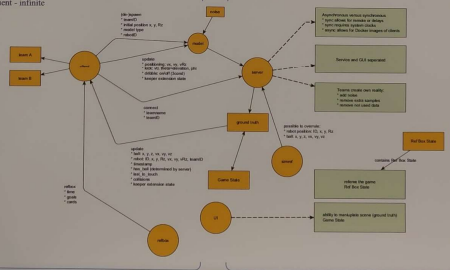
- An annual MSL Simulation League is already being organized in China, which uses the open-source NuBot Team simulator (simmatch, a.k.a. GroSim = Gazebo + ROS).
- A member of the NuBot team was present during the workshop and on the presented this simulator during the workshop presentation session.
- The general feeling of the other teams was that the Gazebo was the preferred simulation engine to use, but would like to drop the ROS dependency. So, the GroSim has been selected as a baseline starting point for the MSL Simulator. The idea is to strip ROS out of their simulator.
- Additionally, the ball possession and scrum broker algorithms must be enhanced with respect to the current GroSim approach.
- Because this is a bigger project and we will deviate quite a bit from the GroSim, instead of forking we decided to copy the simulator code and include it in a subfolder of this project.

Sync/Realtime Simulation

- A real-time simulation is the simplest one to develop – server sends the ground truth to the client and the client replies with their outputs as fast as they can.
- A sync'd simulation essentially pauses simulation waiting for the client to respond.
- Sync'd simulations would enable 2 nice features:
 - Remote simulations (minimizes connection delay impact, otherwise the remote team is always in disadvantage)
 - Speed-up simulation (a simulated match could potentially take less time than real matches)
- Most teams are using system time internally in their agents. This makes it impossible to take advantage of speed-up simulation.
- We settled that for now, we are not yet interested in remote and speed-up simulations, so we defined to have a real-time simulator working first.

Interface And Communications

- Server-Client paradigm – The simulator act as a server and communicates with several clients
- Types of clients: Team Client - 2 max, Referee Client - 1 max, Visualization Client - infinite



FINDINGS (continued)

- Will use ProtoBuf for messages between server and client, since Gazebo already uses ProtoBuf internally
- A TCP/IP link has been chosen to scale in the future to remote and synced simulations
- Single TCP port for all communications
- Make use of docker images to share agents between teams – no need for distributing source code, nor binaries + configuration files, etc. An opponent team only needs to provide a docker container that is able to communicate with the server and receive commands from the refbox.

Robot Models

- A default level of abstraction has been defined that should work for most teams generally.
- Four models initially considered: TRIANGULAR, SQUARE, CIRCULAR, KEEPER
- These models are not purely visual. The model sends also intention of interaction with the ball (then, a broker on the server decides which team has control of the ball)
- If a team wants to go deeper in the level of simulation with their robots, they can provide their model in a form of a Gazebo plugin that communicates with their Team adapter client extra information that was not included in the default models.

Noise Simulation

- The server communicates groundtruth (noise-free) data to the clients
- It is responsibility of the team to integrate similar noise levels as their robots have in their team adapters upon receiving this groundtruth info

Sim Referee

- In a first stage, the idea is to reuse the current official RefBox application - the RefBox2015
- The RefBox2015 application should be able to receive commands from an automatic referee application.
- This automatic referee is able to communicate also with the Gazebo server: has access to ground truth information and is able to reposition robots and the ball on the field.

FOLLOW-UP TASKS

Initial Documentation – FALCONS

- Overall architecture
- Sequence diagrams
- Documentation – ALL TEAMS
- Keep it in mind for all tasks below

[Referee] RefBox API verification – FALCONS

- Check if it's implemented, working locally...?
- Check 2 local Clients

[Server] Define the Server interface – VDL

- Messages (attributes per message), Serialization (ProtoBuf), Transport (TCP/IP)

[Gazebo] Adapt/Spoon GroSim – CNC, NuBot

- Strip ROS / start with gazebo and import changes on GroSim ??

[Gazebo] Create default models – NuBot, CNC

- TRIANGULAR, SQUARE, CIRCULAR, KEEPER
- Not only visual model
- Model sends intention of interaction with the ball, a broker on the server decides

[Server/Gazebo] Create the interface with clients on the server side – CAMBADA, VDI

[Client] Create a sample client (use defined messages to communicate with the server) – CAMBADA, VDI

[Referee] Create the automatic referee (arbitor) – interaction with server – TUE, FALCONS

[Docker] Dockerize the Server (use Ubuntu 16.04) – TUE

- Use scripts to install dependencies and avoid having huge images
- Provide a tutorial for teams to create images

[Docker] Provide a docker image per team – ALL TEAMS

FUTURE WORK

[Client] Instead of using gazebo client, use a custom visualization tool

[Server] Add sync mode to enable remote and speed-up matches

ACKNOWLEDGMENT

A big thank you to Ricardo Dias for excellent reporting on the workshop; the reporting has also been added to the MSL wiki under workshop dissemination and a GitHub archive has been created for the joint MSL simulator project.

PARTICIPANTS

ASML Falcons (ASML, Veldhoven, Netherlands)
Tech United Eindhoven (Technical University of Eindhoven, Netherlands)
VDI, Robot Sports (VDI, Enabling Technologies Group, The Netherlands)
CAMBADA (University of Aveiro, Portugal)
Carpe Noctem Gassel (University of Kassel, Germany)
NuBot (National University of Defense Technology, China)
HiBikino-Masashi (Kyushu Institute of Technology, University of Kitakyushu, Japan)
Guest Speaker: Nuno Lau (University of Aveiro)
Some members from Fortys ICT (Information and Communication Technology Eindhoven, Netherlands)

Shot on Smartisan R1

PART 02 RoboCup项目组织管理

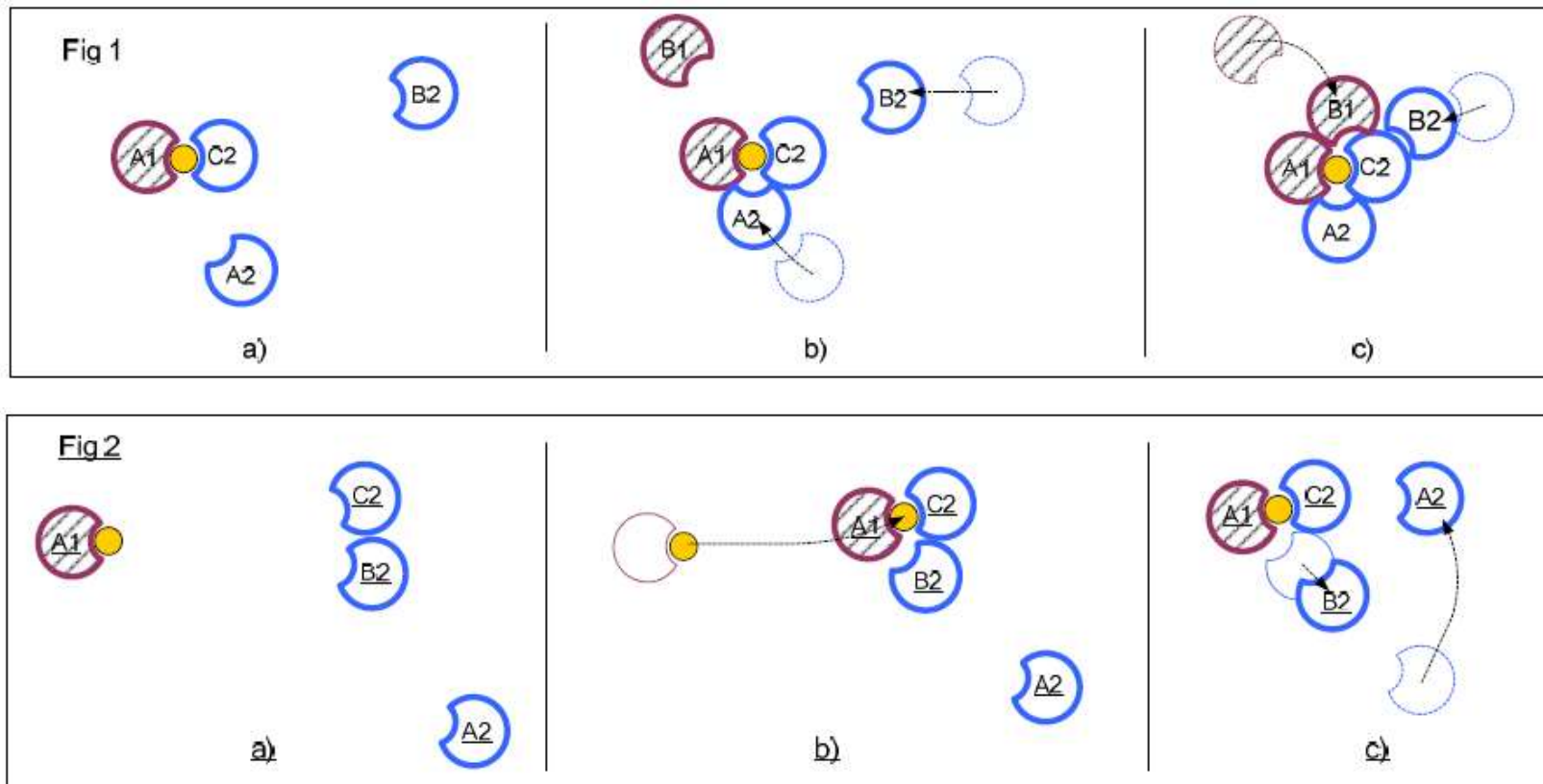
RoboCupSoccer - Middle Size

Themes	Description	2014	2015	2016	2017	2018
1.1	Play with arbitrary ball	Arbitrary color but known in advance. Use of saturated color balls recommended.	Arbitrary but only known at the beginning of the tournament. Saturated color balls recommended.	Play with any not previously known standard FIFA ball. (Unknown until begin of game)		
1.2	Playing outdoors	Not applicable	Not applicable	Demo	Trial	Tournament
1.3	Playing in uneven terrain	Not applicable	Not applicable	Demo	Demo	Trial
1.4	Ball free rolling distance in game restarts	Ball must travel free for at least 0.5m	Ball must travel free for at least 1m	Ball must travel free for at least 1m	Ball must travel free for at least 2m	
2.1	Limit the maximum available energy by player	Not applicable	Evaluation of average energy spend by the teams during a game	Determination of a maximum energy available for the teams (conservative)	Enforce a stricter maximum amount of energy per player/game	
2.2	Limit the max distance for ball dribbling	Not applicable	3m	2m	1m	
2.3	3D ball following	Not applicable	goal 3m wide by 1m height	goal 3m wide by 1.2m height		
3.1	Team equipment	Cyan / Magenta	Free saturated colors (green and white excluded)	Free saturated colors (green and white excluded)	Free saturated colors (green and white excluded)	Free saturated colors (plain green and plain white excluded)
3.2	Limit wireless bandwidth	1.5 Mbits/sec	1.5 Mbits/sec	1 MBit/sec	1 MBit/sec	500 KBit/sec
4.1	Enforce double passing in game restarts for goal validation	Not applicable	Double passing (can be between the same two players)	Double passing (can be between the same two players)	Double passing involving three different players	Double passing involving three different players

制定路线图

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RoboCupSoccer - Middle Size



路线图的执行



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

影响路线图执行的因素：

- 技术的可实现性（如：任意足球）；
- 比赛条件是否能满足（如：自然光线、不平整场地、户外）；
- 测试效果的影响（如：人工草坪）；
- 客观条件的限制（如：扩大场地、球门）。



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

路线图对技术进步的推动作用：

- 增加了项目的挑战性（如：有效得分判断、传球次数要求）；
- 增加了新的研究内容（如：3D空间下的足球识别）；
- 技术挑战的比赛内容（如：取消球门颜色、复杂的带球效果）。

PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

2018 中型组比赛规则 (MSLR) (Ver. 11.0)

引言

规则宗旨:

1. RoboCup 比赛规则不会对比赛如何进行作任何描述, 规则仅保证比赛能够公平进行, 并鼓励技术和创新的发展。
2. RoboCup 比赛规则应当避免对机器人的设计产生限制, 包括机器人的机械结构、传感器系统、通讯设备等。除非这些限制是促进技术进步和公平比赛的必要保证。
比如: 全局视觉在中型组中是禁止的。
3. 参赛球队应当避免利用规则上的漏洞或矛盾之处在特定的比赛条件下获利, 如果有球队发现了这样的漏洞或者矛盾之处, 应当向技术委员会报告。

设计宗旨:

1. 每个球队设计机器人时不应当对场地周围环境、观众、其它球队的机器人以及其它机器人怎样运作等做出自己的解释或者存在任何假设。
2. 每个球队没有必要为了适应其它球队的机器人而对自己的机器人进行改动, 任何这样的改动都应该是相互对等的。

规则的组成:

RoboCup 中型组规则有以下两个主要部分组成:

1. **比赛规则:** 国际足联规则包含于 RoboCup 中型组比赛规则中, 根据 RoboCup 进行相应的修改和解释。
2. **赛事规则:** 用于规定参赛球队资格认证等与每年的机器人足球比赛相关的事宜。

规则冲突的解决:

当国际足联规则与机器人足球比赛规则冲突时:

1. 在国际足联规则上进行的 RoboCup 修改与解释, 高于国际足联规则。
2. **赛事规则**高于国际足联规则以及在国际足联规则上进行的 RoboCup 修改与解释。
3. 比赛规则的中文版规则与英文版规则不一致时, 以英文版规则为准。
4. 赛事规则的中文版规则与英文版规则不一致时, 以中文版规则为准。
5. 比赛期间在领队或裁判会上做出的现场决定, 高于此前发布的比赛规则和赛事规则。

下载网站:

本规则可下载于: 中国 RoboCup 中型组官方网站
<http://msl.trustie.net>

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5. **比赛期间在领队或裁判会上做出的现场决定, 高于此前发布的比赛规则和赛事规则。**

规则的制定

PART 02 RoboCup项目组织管理

RoboCup Soccer - Middle Size

1、比赛用球

技术委员会在比赛开始之前为每一个场地指定一个比赛用球，比赛用球为 RoboCup 中型组专用五号足球，如下图所示。



赛事规则的作用



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

4、关于比赛中争议的处理方法

比赛过程中，参赛队必须服从场上裁判的判罚。如对判罚结果不服，可在比赛结束后向技术委员会指定的负责人或大赛指定的裁判长投诉。投诉时，必须提供清晰的、带有声音的录像，由技术委员会指定的负责人或大赛指定的裁判长根据录像做出裁定。根据实际情况，裁定结果可能包括（但不限于）维持原始判罚、修改比分、对参赛队提出警告、向技术委员会提出取消参赛队比赛资格建议等。参赛队如果对技术委员会指定的负责人或大赛指定的裁判长的裁定不服，可以向技术委员会提出申诉。如果对技术委员会的裁定不服，可以向大赛仲裁委员会申请仲裁。大赛仲裁委员会的仲裁结果为最终裁定，参赛队必须接受。

注：争议必须在本轮比赛全部结束前提出，一旦参赛队在比赛记录表上签名，则不得再提出任何争议。

赛事规则的作用



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

赛事规则 2.0 资格认证的必要性

比赛的组织委员会因为以下可能的原因限制参赛队伍的数量：

- 科学技术原因，比如，过多的参赛队可能会影响技术的交流和讨论，或者影响比赛的技术标准；
- 由比赛地点引起的比赛场地的限制；
- 由比赛进程引起的比赛时间的限制；
- 其他由于参赛队伍数量引起的组织方面的限制。

为了限制参赛队伍的数量，赛事组织委员会可以要求希望参赛的球队完成资格认证过程。资格认证过程应当以科学的方式进行并鼓励相互交流。

资格认证



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RoboCupSoccer - Middle Size

赛事规则 2.1 资格认证材料的组成

报名参加 2018RoboCup 机器人世界杯中国赛中型组比赛的参赛队，必须提交以下 4 项资格认证材料（总分 100 分）：

- 该队在 5 年之内发表的与 RoboCup 相关的 5 篇科技论文（10 分）；
- 3 年以内球队参加国际、国内比赛的情况以及获奖情况（20 分）；
- 队描述文章（含研究成果介绍）（20 分）；
- 资格认证录像（30 分）；
- 每支参赛队必须提供机械结构描述、电路描述（比如提供图示等）、软件流程图（20 分）。
- 声明是否需要 802.11b 无线路由器。

资格认证材料应当在技术委员会规定的截止日期以前提交给技术委员会，在截止日期以后提交的材料不作为资格认证的有效材料。

资格认证



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RoboCupSoccer - Middle Size

在预选赛中，同一组的参赛队中，如果有参赛队弃权比赛，则该参赛队直接小组垫底。弃权场次多的参赛队在小组排名最后。对同一组，都没有弃权的参赛队，根据积分排名。如果 2 支或多支球队积分相同，或者有相同的弃权场次并且积分相同，按照以下的附加规则进行排名：

1. 实际比赛场次（参见赛事规则 1.1 6、弃赛 实际比赛场次的规定）；
2. 净胜球
3. 进球；
4. 相互之间的直接比赛结果；
5. 资格认证评分结果；
6. 抛硬币决定。

不同组之间，选择排名相同的参赛队晋级下一轮的原则是：是否弃权—〉场均积分—〉资格认证评分结果。小组赛被淘汰的参赛队排名原则是：比赛轮数—〉是否弃权—〉小组排名—〉场均积分—〉资格认证评分结果。

由技术委员会确定所有分组进入淘汰赛的名额，具体细节将会在赛事之前发布。

资格认证



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

考虑第 i 号评委，其给所有队伍的分数： $m_1(i)$, $m_2(i)$, $m_3(i)$, $m_4(i)$, $m_5(i)$, \dots (1、2、3 代表不同队伍)，其所打分数总和为：

$$\text{sum_p}(i): \text{sum_p}(i) = m_1(i) + m_2(i) + m_3(i) + m_4(i) + m_5(i) + \dots$$

考虑第 i 号打分人员所打分数队伍数量为 $n(i)$ ， $n(i)$ 是所有队伍数或所有队伍数减 1，那么第 i 号评委评分的平均值为 $\text{ave}(i)$ ： $\text{ave}(i) = \text{sum_p}(i) / n(i)$

$\text{ave}(i)$ 将直接代表此评委给队伍打分时过高还是过低。

取所有打分人员中所打分数平均值的最高的为： $\text{ave}(\max)$

则第 i 号打分人员其权重为 $q(i) = \text{ave}(\max) / \text{ave}(i)$

那么第 i 号打分人员所打分数应乘上权重 $q(i)$ ： $m_1(i) * q(i)$, $m_2(i) * q(i)$, $m_3(i) * q(i)$, $m_4(i) * q(i)$, $m_5(i) * q(i)$, \dots

所以，第 j 支队伍所获分数总和为： $\text{sum_t}(j) = m_{j(1)} * q(1) + m_{j(2)} * q(2) + m_{j(3)} * q(3) + \dots$

共有 $k(j)$ 名评委对第 j 支队伍打分，最后，第 j 支队伍所获分数为 $\text{sum_t}(j) / k(j)$

资格认证评分方法



PART 02 RoboCup项目组织管理

RoboCupSoccer - Middle Size

RULES AND REGULATIONS

Most Recent Rulebooks

Rules for the MSL RoboCup Soccer World Championships

- 2018 Montreal, Canada (Version: 19.1 Published date: 2017-12-31) ([changes](#))
- 2017 Nagoya, Japan (Version: 18.4 Published date: 2016-12-31) ([changes](#))
- 2016 Leipzig, Germany (Version: 17.3 Published date: 2015-12-31) ([changes](#))
- 2015 Hefei, China (Version: 17.2 Published date: 2014-12-31) ([changes](#))
- 2014 João Pessoa, Brazil (Version: 17.1 Published date: 2014-01-23) ([changes](#))
- 2013 Eindhoven, Netherlands (Version: 16.1 Published date: 2012-12-08)
- 2012 Mexico City, Mexico (Version: 16.0 Published date: 2011-12-29)
- 2011 Istanbul, Turkey (Version: 15.0 Published date: 2010-12-31)
- 2010 Singapore, Singapore (Version: 14.1 Published date: 2010-05-12)
- 2009 Graz, Austria (Version: 13.1 Published date: 2008-12-12)

发布规则



PART 03

RoboCup竞赛现场管理

PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛前

发出参赛邀请

Call for Participation

RoboCup 2018 Middle Size League

June 17 to 22, 2018 (Montreal, Canada)

<http://www.robocup2018.org/>

We would like to invite all MSL teams to participate in the 2018 RoboCup MSL World Championships. If you are interested to participate please take the time to pre-register your team for the RoboCup 2018 MSL competitions.

1) Pre-registration

For the pre-registration please send an e-mail to rc-msl-oc@lists.robocup.org containing the following data:

- team name
- URL of the team's home page
- name of the team leader
- e-mail address of team or team leader
- affiliation
- country
- link to the qualification materials

2) Qualification materials

Please note that, according to the rules, the result of the qualification materials' evaluation will contribute to the scientific challenge final result.

By the time of pre-registration, please have ready the following qualification materials:

- A Team Description Paper describing the most innovative contributions or scientific results (the TDP is limited to 8 pages and must be formatted according to the LNCS format: <http://www.springer.com/computer/lncs?SGWID=0-164-6-793341-0>)
- A list of 5 scientific papers published during the last 5 years of the team which are related to RoboCup. Abstracts of these papers must also be submitted;
- A list of results and awards obtained by the team in the last 3 years;
- A video showing the capabilities of the team's robots (the maximum duration of the video is 60 seconds; if the submitted video is longer than 60 seconds, only the first 60 seconds will be considered for evaluation);
- A list of contributions of the team to the RoboCup MSL community.
- Declaration if the team will be part of a mixed team.
- Declaration if the team requires 802.11b access-point.
- A mechanical and electrical description together with a software flow chart (please include size and weight of the robots);
- List of MAC Addresses used by the team, with explicit indication of those that will be used for wireless communication and their type: robots or development computers. All other MAC addresses will be blocked.

The details regarding the qualification materials are contained in the rules and regulations document available at http://wiki.robocup.org/wiki/Middle_Size_League. Please read it thoroughly.

The qualification materials should be placed in a dedicated page of the team's web page. Please include the link to the qualification materials in the pre-registration information.

3) Important dates

- **Deadline for pre-registration and submission of the qualification materials: February 12, 2018**
- **Announcement of qualified teams: March 7, 2018**

4) Rules

The rules and regulations for the RoboCup 2018 Middle Size League had been published at: http://wiki.robocup.org/wiki/Middle_Size_League

The updated rules and regulations had been released at **December 31, 2017**, at the latest.

5) Publication

Please note that after the announcement of the qualified teams the qualification materials of the qualified teams will be made publicly available. Therefore, teams applying for participation, grant the right of publication of their qualification materials to the MSL league (MAC addresses are an exception and should remain private).

6) Plagiarism

Plagiarism, loosely the unattributed use of other peoples' words, code and ideas (see http://www.ieee.org/publications_standards/publications/rights/plagiarism_FAQ.html for a more detailed description) is not tolerated in the RoboCup community.

The teams and team members that plagiarize other peoples' work and present it as their own will be disqualified. For a first offense, the team and team members will be banned from RoboCup competition for two years (usually the current and next year). Harsher penalties will be applied to repeat offenders or extremely serious cases of plagiarism. A team may be disqualified at any time for plagiarism, even after the competition has started. RoboCup will not reimburse teams for any expenses related to their disqualification.

7) Waiver of the team fee for NEW Teams

For the 2018 International RoboCup competition, NEW major teams can apply for team fee waiver. A NEW team is defined as a team all of whose team members have never participated in an annual international RoboCup competition. The waiver concerns only the team fee and does not imply any waiver of fees for team members.

The 2018 MSL Organizing and Technical Committees

PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛前

Tutorial: Requirements for RoboCup MSL

Robin Soetens, Bernardo Cunha, Jose Luis Azevedo, April 2016.
Fei Liu, Seyed Ehsan Marjani, Update at November 2017.
Fei Liu, Moeko Tominaga, Edwin Schreuder, Update at March 2018.

Good playing conditions are crucial for a well organized competition. Based on past experience we have created this document containing a list of required materials and general tips and tricks on how to build a MSL field that meets the rules of the competition and is robust enough to last for an entire tournament.

Questions can be directed to:
lfufei@cas.org.cn (Chair of Organizing Committee)
rc-mst-ic@lists.robocup.org (Technical Committee, TC)
rc-mst-oc@lists.robocup.org (Organizing Committee, OC)

Or to the Exec Committee:
Ricardo Dias, ricardodias@ua.pt, DETI/IEETA, University of Aveiro, Portugal
Junhao Xiao, junhao.xiao@ieee.org, National University of Defense Technology, China
Seyed Ehsan Marjani Bajestani, ehsan.marjani@gmail.com, Qazvin Islamic Azad University, Iran

General info on the RoboCup MSL competition, along with the official rulebook, can be found on this wiki: http://wiki.robocup.org/wiki/Middle_Size_League

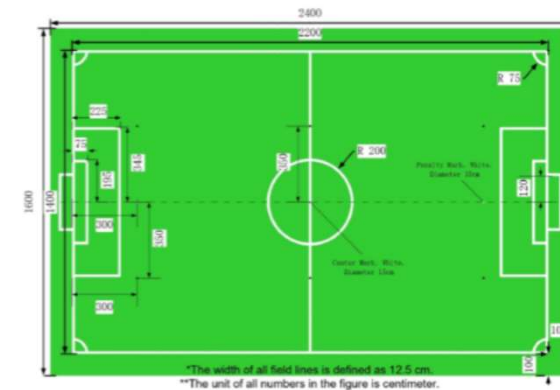


Playing Field Dimensions

Field dimensions are specified in the figure below. The width of each of the field lines is defined as 12.5 cm. The sketch is scaled properly.

Although it probably is clear from the image: White lines are integral part of the field or of any of the areas they contain. Therefore, measurements are to be done from the outer side of any line. The only exception is the mid field line, which must divide the field in two equal-sized areas.

Between the outer lines of the field and the absolute edge of the field, a green zone with a width of at least 1.5 meters should be present (for safety and for the robots to manoeuvre behind the ball during throw-in and corner kick situations). There is a large-scale field pic at the end of the document.



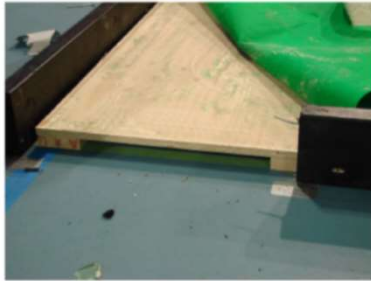
提交场地需求

PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛前

for safety reasons it is fundamental that the field border is build and attached in a way that ensures it can sustain a robot-crash under the described worst-case conditions. Height of the border should be between 8 and 15 cm (above the wooden floor).



Required Materials per Competition Field

The number of required fields depends on the number of participating teams. In case multiple fields are used, all of the materials in the table below are required for each of the competition fields.

Item	#	Description
Field	1	Green carpet, mounted on wooden base, with white markings (for more instructions, see Playing Field Dimensions and Constructing a Field).
Goals	2	White wooden made goals (for more instructions, see Goal Dimensions).
Referee computer (RefBox PC)	1	Computer running Linux or Windows OS in English version. During a match both teams will connect to this computer, software to do so will be installed by the RoboCup MSL OC.
PC Speakers on the RefBox PC	1	For the referee to hear the 7 seconds counter.
Extra Monitors for the RefBox PC	1	Show the referee client - displays time, score, robot repairs, etc. for the main referee.
Access point	1	One access point supporting IEEE 802.11a/g/n (5GHz), enterprise level. For 802.11a/g/n (5GHz), Middle Size League needs channel 40 & 44 for competition and practice . The access point will stand on the referee table (for more instructions, see Frequently Asked Questions).
Network cable	5	Each approximately 5 metres in length.
Network switch	1	With at least five slots.
LCDs	2	To connect to the base stations laptops of teams (teams notebooks must be closed during games).
Referee table	2	Tables for up to four people.
Referee chairs	4	-

提交场地需求

PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛前

2018 RoboCup Middle Size League General Schedule

	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun
	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
8:00	Setup					
9:00	Setup	Setup	RR1-1 A2-A5	RR2-1 B2-B5	RR3-1 C2-C5	Semi Final1
9:45			RR1-2 A3-A4	RR2-2 B3-B4	RR3-2 C3-C4	9:00-10:00
10:30						Semi Final2
11:00			RR1-3 A3-A5	RR2-3 B3-B5	RR3-3 C3-C5	
11:45			RR1-4 A1-A2	RR2-4 B1-B2	RR3-4 C1-C2	
12:30						3rd Place
13:00			RR1-5 A1-A3	RR2-5 B1-B3	RR3-5 C1-C3	12:30-13:30
13:45			RR1-6 A4-A5	RR2-6 B4-B5	RR3-6 C4-C5	
14:30						Final
15:00			Technical challenge 15:00-16:15	RR1-7 A1-A4	RR2-7 B1-B4	RR3-7 C1-C4
15:45		RR1-8 A2-A3	RR2-8 B2-B3	RR3-8 C2-C3		
16:30						
17:00	Scientific challenge 16:45-18:00	RR1-9 A2-A4	RR2-9 B2-B4	RR3-9 C2-C4		
17:45	Open Ceremony 18:00-19:00	RR1-10 A1-A5	RR2-10 B1-B5	RR3-10 C1-C5		
18:30					Award Ceremony 18:15-19:00	
19:30	TL meeting 19:30-20:30	Referee meeting 20:00-21:00	TL meeting 19:30-20:30		Major Banquet 19:00	
20:30						
21:30						
22:30	Close					
23:30	Close					

RR1	Rank after RR1	RR2	Rank after RR2	RR3	Rank after RR3	Semi-Finals		Finals	
Group A	Group A	Group B	Group B	Group C	Group C	SF1	SF2	F1	F2
A1	A1	A1	B1	B1	C1	C1	C2	L SF1	W SF1
A2	A2	A2	B2	B2	C2	C4	C3	L SF2	W SF2
A3	A3	A3	B3	B3	C3				
A4	A4	A4	B4	B4	C4				
A5	A5	A5	B5	B5	C5				

Rank	1	2	3	4	5	Total
Game Qty.	14	14	14	14	12	34

安排赛程



PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛中



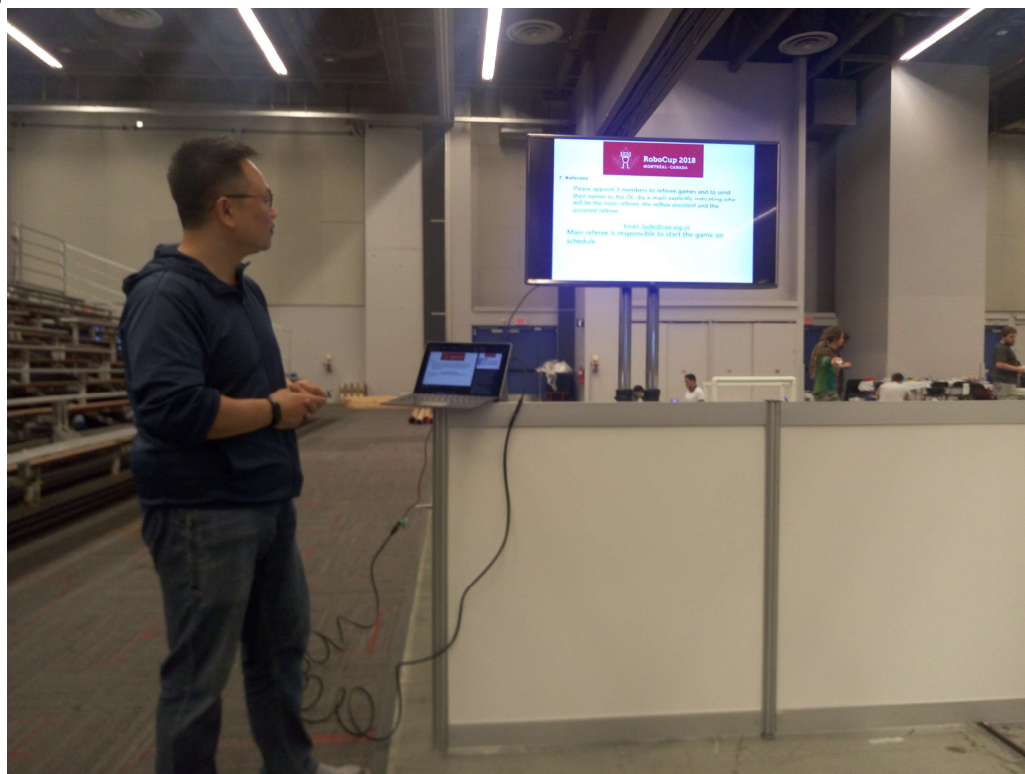
验收场地和比赛器材



PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛中



组织召开会议



PART 03 RoboCup竞赛现场管理

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信息发布



PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛中

2018RoboCup中型组直播间 2018-06-22 01点场 [举报](#)

科普 发布于: 2018-06-24 6次播放

随时随地看超清视频 斗鱼直播APP 



直播回看 推荐视频 弹幕列表

2018-06-22 场 2018年06月

06-21 06-22

完整 2018RoboCup中型组直播间 2018-06-22 ... 118:56

完整 直播录像·03点场 14:00 ▶ 3

58:41 / 01:58:56 说点什么吧 发送 弹幕 超清

分享 0 收藏 0 赞 0

鱼丸: 0 鱼翅: 0 充值

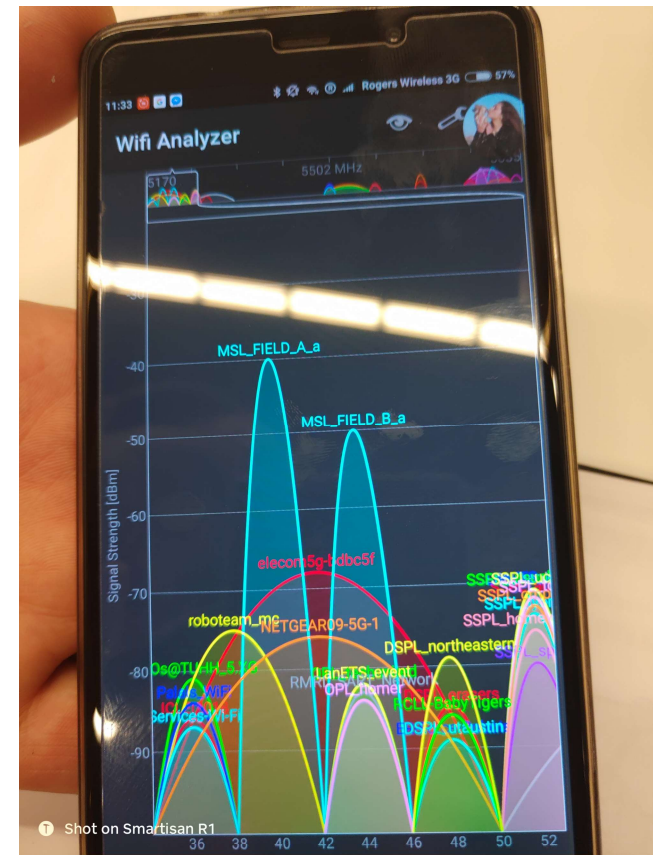
信息发布



PART 03 RoboCup竞赛现场管理

RoboCupSoccer - Middle Size

赛中



现场管理



PART 04

几点启示

PART 04 几点启示

项目管理形式

技术委员会+组织委员会

发挥“志愿者”作用

充分发挥热爱比赛、愿意为比赛出力的队员、老师的积极性



项目发展规划

长期规划与技术测试相结合

规范化的资料整理

为大赛组委会提供尽可能详细和准确的项目文档



谢谢大家

RoboCup Middle Size League
2017 ~ 2019 OC Chair
Fei Liu

