



Call For Participation



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## 2017 FIRA RoboWorld Cup

23<sup>th</sup> - 27<sup>rd</sup> August, 2017

National Kaohsiung First University of Science and Technology

No. 1, University Road, YanChao District, Kaohsiung City 824, Taiwan (R. O. C.)

Kaohsiung, Taiwan



## Important Dates

- 31<sup>st</sup> May 2017**      Deadline for submission of qualification material
- 15<sup>th</sup> June, 2017**      Notification to qualified teams
- 14<sup>th</sup> July, 2017**      Deadline for early-bird registration



# Introduction

In 1996, the Federation of International Robot Soccer Association (FIRA) organized the first robot soccer and other sports competition. The main goal of FIRA is to promote cutting edge research into robotics, machine learning, computer vision, and artificial intelligence by using robot sports as benchmark problems. A second goal is to introduce students to state of the art technologies and methodologies in the areas mentioned above and to prepare them for their future careers.

Many interesting research has come out of the FIRA community including the first ice skating and skiing intelligent humanoid robots. But just as robot hardware and software has changed dramatically in recent years, robot competitions must evolve to continue to act as important benchmark problem.

2017 provides a new start for FIRA with new challenges, new participants, and a new president. The new FIRA organization is broken up into four divisions:

1. FIRA Sports - autonomous robots competing in sport and similar events,
2. FIRA Youth - a new division for junior and high school students,
3. FIRA Challenge - more complex events such as search and rescue that can often only be solved with tele-operation, and
4. FIRA Air - a new competition for autonomous drones.

The first world cup competition using this new structure will be organized by [Prof. Kuo-Yang Tu \(tuky@nkfust.edu.tw\)](mailto:tuky@nkfust.edu.tw) and will be held from 23rd to 27th of August 2017 at the National Kaohsiung First University of Science and Technology (NKFUST) in Kaohsiung, Taiwan.

We hope that you can join us at NKFUST for exciting robot competitions with teams from all over the world. We believe that the FIRA World Cup is a wonderful event to make new friends and learn from each other.

## Game Categories and Rules

Links to all rules can be found in the [rules document \(https://goo.gl/owWvAK\)](https://goo.gl/owWvAK)

### FIRA Sports

1. HuroCup (Chair: [Prof. Kuo Yang Tu](#), Co-Chairs: [Prof. Karla Camarillo](#), [Dr. Kevin Lim](#), [Prof. Young Jae Ryoo](#))
2. AndroSot (Chair: [Prof. Tzuu-Hseng Steve Li](#), Co-Chairs: [Prof. Tae Goo Kang](#), [Prof. Ming-Yuan Shieh](#))
3. RoboSot (Chair: [Prof. Ching-Chang Wong](#))



4. SimuroSot (Chair: [Prof. Zhongwen Luo](#), Co-Chair: [Gonzalo Mon](#))
5. MiroSot (Chair: [Prof. Ho Seok Ahn](#))

FIRA Youth (Chair: [Yi-Ching Chen](#), Co-Chair: [Handson Lee](#), Co-Chair: [Hossein Mahdipour](#))

1. HuroCup Youth.
2. [Mission Impossible](#)
3. [Mission Impossible \(United Nation, Only for Camp participants\)](#)
4. [DRC Explorer](#) (Autonomous)
5. [City racer](#) (Line tracer)
6. [Cliffhanger](#) (Sumo variant)

FIRA Challenge

1. [Mini DRC](#) (Chair: [Dr. Soroush Sadeghnejad](#))

FIRA Air

1. [Drone](#) (Chair: Farzad Ahmadinejad)

## Qualification

Teams that are interested in participating must submit their qualification material before the deadline. The qualification procedure is dependent on the division. Please contact the chairs and co-chairs of the events if you have any further questions.

## FIRA Sports, FIRA Challenge, and FIRA Air

Qualification consists of two parts: (1) A max. 5 min long video showing the performance of your robot in the various sports events, and (2) a research paper (max. 12 pages in Springer LNCS format).

### Videos

Videos must be uploaded to a publicly accessible video sharing site such as [youtube](#) or [video](#). Post a message to the FIRA Facebook group (<https://www.facebook.com/groups/FIRARobosoccer/>) page with a link to your video.

### Research Paper

The EasyChair website for submission is <https://easychair.org/conferences/?conf=fira2017>. Note that there is no additional fee for teams submitting a paper to FIRA 2017.



## FIRA Youth

Teams that are represented by a FIRA Chapter must qualify and register via their FIRA Chapter.

Teams that do not yet have a chapter may contact FIRA HQ directly for qualification. In this case, they should submit a two page write-up in English describing their previous experience in robotics and their motivation for joining the FIRA competition.

In addition, participants that would like to take part in the United Nations Mission must submit a two page write-up in English describing their previous experience in robotics and their motivation for joining the United Nations Mission.

## Venue and Competition Schedule

23<sup>rd</sup> August: Set-up time, competition

24<sup>th</sup> August: Competition, opening ceremony

25<sup>st</sup> August: Competition, welcome reception

26<sup>th</sup> August: Competition

27<sup>th</sup> August: Competition, Closing (Award) Ceremony

The competition will take place in the student activity center at NKFUST. Fig. 1 is the main gate of NKFUST, and Fig. 2 is the building of competition venue.



Fig. 1. The main gate of NKFUST.



Fig. 2. The building of competition venue.

## Registration Fees

### FIRA Sport, FIRA Challenge, FIRA Air:

#### Early bird (14<sup>th</sup> July):

\$550 USD per each team in each game up to member of 5 (including coach)

\$160 USD per additional team member

Teams from the same institution but in different leagues are considered separate teams and must pay a separate registration fee.

#### Regular (21<sup>st</sup> July):

\$650 USD per each team in each game up to member of 5 (including coach)

\$220 USD per additional team member

### FIRA Youth:

#### Early bird (14<sup>th</sup> July):

160 USD per team member, 100 USD for coach

#### Regular (21<sup>st</sup> July):

220 USD per team member, 160USD for coach

Each registration includes a small souvenir/gift.



# Travel

Kaohsiung is Taiwan's second largest city and is easily accessible. The Kaohsiung airport (KHH) serves flights directly to Hong Kong, Vietnam, China, and some other Asian destinations.

Another option is to fly to the Tao Yuan International Airport (TPE) - Taiwan's largest airport - which has direct flights to many international destinations. The Taiwanese High Speed Rail (HSR) connects the entire west coast of Taiwan and provides convenient travel to Kaohsiung. The duration of the trip is between 1.5 hrs to 2 hrs and trains leave approximately every 20 minutes from 8:00 am to 10:00pm. Cost of a one way fare from Tao Yuan to Kaohsiung is about 1400 NTD.

NKFUST is located at the outskirts of Kaohsiung. The nearest subway (KMRT; Kaohsiung Mass Rapid Transit) stations are Qing Pu and Metropolitan Park. The distance from these stations to NKFUST is about 3km. The red line of KMRT runs between the Kaohsiung airport and Qing Pu. You can use this line to Qing Pu station when arriving at the Kaohsiung airport (40 min) or the Taiwan High Speed Rail Zuo Ying Station (15 min) to reach the competition venue at NKFUST.

The organizers will organize buses from Qing Pu station to NKFUST in the morning and in the evening. There is a small 20 seater public bus (Red Line 29) from NKFUST to Metropolitan Park MRT station. Taxis are about 300 NTD to Metropolitan Park station. Taxis to Nanzi and Ciaotou are around 750 NTD and about 1500 NTD to Kaohsiung downtown.

# Accommodation

## Hotels

Kaohsiung provides many options for accommodation and food. The nearest districts to NKFUST are Nanzi, Houjing, and Ciaotou.

## Dormitory

As a special offer, the local organizing committee has negotiated a special rate for a limited number of dormitory rooms on the NKFUST campus itself. The NKFUST dormitory is available from 22 August, and the check out time is the morning of 28 August. Teams that are interested in trying to stay on campus should indicate this during the registration process. Note that the cost of accommodation is in addition to the registration fees listed above.

A room is shared by four people and each room has its own bathroom. There are shared showers. See Appendix A for some pictures of the dormitories. Mattresses and pillows will be



provided. You need to bring your own light bedding, as the weather is very hot in August in Kaohsiung.

Accommodation also includes breakfast and dinner served in the dormitory restaurant. The menu is a small selection of Chinese dishes. During the busy competition days, we will provide a lunch box that will be delivered to the venue.

**Accommodation Fee - Early bird (Before 14<sup>th</sup> July):**

\$300 USD per person

**Accommodation Fee - Regular (Before 21<sup>st</sup> July):**

\$460 USD per person

## Food and Beverages

The organizers also offer the option of buying lunch boxes for each day of the competition. The cost of the lunch boxes is about \$5 per day. Because lot of hundreds lunch boxes are hard to prepare, we encourage to order lunch tickets during registration by cheaper price.

There are a few restaurants just outside the main gate of NKFUST and many restaurants in Nanzi and the surrounding areas. We recommend that you try 牛肉麵/Niu Rou Mian/Beef Noodle Soup and also sample the snacks at the Taiwanese night markets in 六合觀光夜市 /Liuhe Night Market and Ruifeng Nightmarket.

General Chair: Prof. Kuo-Yang Tu [tuky@nkfust.edu.tw](mailto:tuky@nkfust.edu.tw)

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Website: [www.fira.net](http://www.fira.net)

Facebook group: <https://www.facebook.com/groups/FIRARobosoccer/>

Official website FIRA 2017: [http://humanoid.nkfust.edu.tw/FIRA\\_2017/index.php](http://humanoid.nkfust.edu.tw/FIRA_2017/index.php)



Appendix A: Dormitory



Fig. A1. The dormitory main gate.



Fig. A2. One view of the dormitory building.



Fig. A3. Left: Room bed (Mattress and pillow will be provided); Right: The toilet in room.;



Fig. A4. The room inside (Mattress and pillow will be provided)



Fig. A5. Showers.



Fig. A6. One corner in the shower room.



Fig. A7. One study room in the dormitory.





Fig. A8. Another one study room in the dormitory.



Fig. A9. Restaurant.





Fig. A10. Convenience store.



Fig. A11. Laundry room.



Fig. A12. Table tennis in social room.



Fig. A13. Billiards in social room.

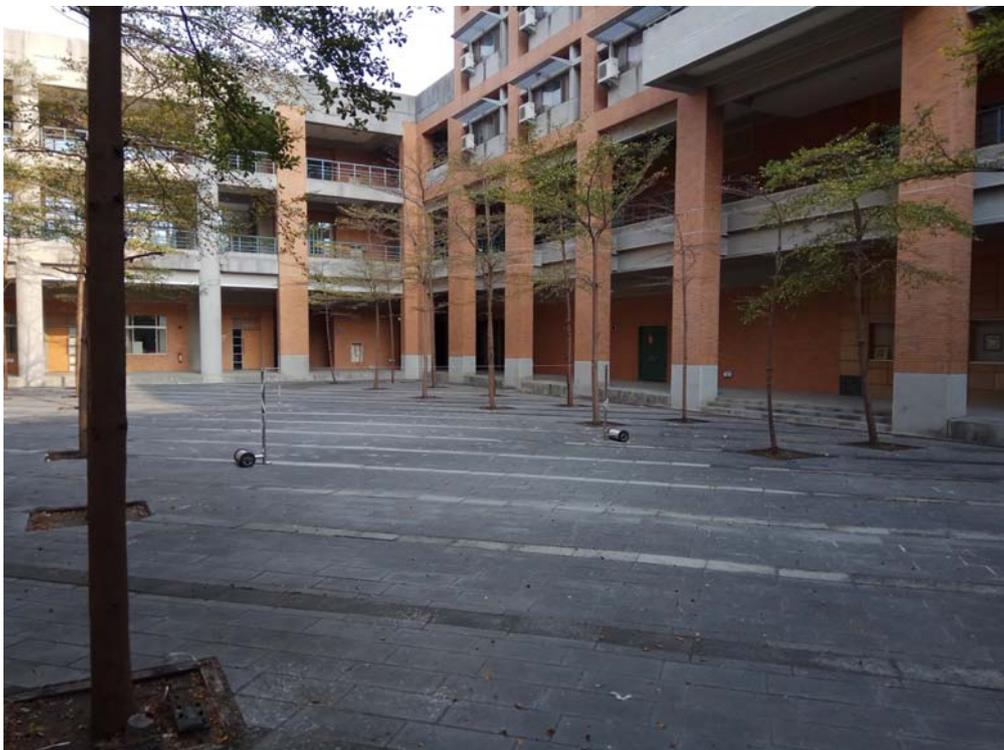


Fig. A14. Badminton court in this dormitory.