

ETC Hrvatska



RoboCup Junior Croatia

Category On Stage

RULES AND ORGANIZATION OF THE COMPETITION

1. Competition schedule

This year's competition will be held from 14 to 21 April 2022. Online on the Zoom platform.

2. Participants in the competition

Participants in the competition are teams of 2 to a maximum of 4 members. Team members are aged 13 to 19 and have not participated in international competitions.

3. Task teams

The team's task is to design a creative stage performance lasting one to two minutes that will include performances by robots and team members. Teams need to create a stage performance that will include reliable robotic constructions that will interact with team members in addition to song, dance, storytelling or play. The emphasis is on the construction of autonomous robots that the team members designed, made and programmed independently under the guidance of a mentor and the performance of the robot, and not on the performance of the team members.

4. Team evaluation

Teams are evaluated in the following areas - technical presentation, technical interview and performance on stage, according to the rules of RoboCupJunior OnStage - Rules 2022, which is available at the links:

http://2022.robocupjunior.eu/docs/2022 OnStage Rules final01.pdf





By March 25, 2022, the competition organizer will publish on the website scoring tables for technical presentation, technical interview and performance on stage (video from one to two minutes).

By April 14, 2022, all registered teams should put on Discord link https://discord.gg/VQsmUbBH :

1. Link to the technical presentation that should be available by clicking on the link without asking for access.

Technical presentation teams can create as a PowerPoint presentation, video presentation or presentation in a web digital tool of personal choice (Prezzi, Canva,...).

2. A link to a one- to two-minute video that should be available by clicking on the link

without seeking approval.

Important: The video must show the entire stage, robots and team members at all times, also the video must not be edited or interrupted.

On April 15, 2022, all received videos and the organizer of the technical presentation will be made public on the website:

https://robocupcroatia.com/

On April 16, 2022, the date and time of the team interviews with the judges will be published on the website <u>https://robocupcroatia.com/</u>. Each team will receive a link to join the Zoom platform to the email provided in the application.

On April 19, 2022, the names of the four most successful teams will be announced, which will perform a real-time stage performance with robots on April 20 via the Zoom platform. The link for Zoom teams will be sent to the e-mail specified in the application.

Important! The entire stage, robots and team members must be visible at all times during the performance.

The results will be published on

https://robocupcroatia.com/

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Scoring table

OnStage Technical Video Demonstration Score Sheet 2022

Category	Examples of how high marks may be achieved are:	Mark
Robotic	Demonstration of a fully working robotic system.	
Demonstration		
	Demonstrates the overall capabilities of the robot(s), including	
	the four chosen features.	
	Demonstrates fully working repetie systems without easturned as	
	described in the Technical Description Paper	
	described in the reclinical Description Paper.	/10
Design Process	Explain the design processes used during the development of the	/10
Design Trocess	robotic systems.	
	Highlights how they overcame challenges in their design process,	
	especially focusing on team's problem solving.	
	Communicates team member's roles and the contributions to the	
	different systems (electromechanical, software etc.)	/6
Presentation	Clarity and quality of the presentation.	
	Presents a well-polished demonstration.	
	Graphics and accompanying materials are clearly explained and	-
	presented.	/5
Communication of	Communicating	
lechnologies		
	Effectively communicates the technical capabilities of the robot to	
	the audience in a concise and clear manner.	
	Technically unusual creative or ambitious concents in the team's	
	robotic performance are clearly explained	/5
Feature Selection	Features	/5
Process		
	Teams will be rewarded for their explanation of the selection	
	process used in deciding their four features to be judged during	
	their performance.	
		/4
	Total Score	/30



Cast 121

OnStage Technical Interview Score Sheet 2022

Category	Examples of how high marks may be achieved are:	Mark
Programming	Ability to explain the program and the interactions between	
	the hardware and software:	
	- Choice of programming language	
	- Difficulties with the software - Development of appropriate	
	models, datasets and/or libraries to solve programming	
	solutions	
	- Innovative programming solutions	
	- Efficient and optimized programming with clear	
	documentation and commenting	16
Electromechanical Systems	Ability to explain why electromechanical design choices	70
	were made.	
	were made.	
	- Choice of materials and actuators	
	- System kinematics	
	- Development of custom electronics (including PCBs)	
	- Power management, regulation, and battery choices -	
	Microcontroller choice	
	- Design choices are made to ensure systems are reliable and	
	durable	
	Explain how systems are fit for purpose - examples include:	
	- Complex mobility - omnidirectional/legged robots - Traverse	
	different terrains - High precision systems including	
	pneumatics	
	- Functional arms/hands/faces - Robotic arms for	
	manipulation	
	- Automatic balance system	
	- Custom components	/9
Sensor and Communication	Ability to explain the role of sensors and communication in	
Systems	the systems and how the robots interact with the stage	
	environment:	
	- Robot systems can dynamically respond to unplanned	
	events	
	-Robots can sense their environment and use the	
	Information to dynamically respond with an action	
	- Integration of multi-sensor systems to develop solutions	
	- Creation of communication architectures (asymmetric	
	communication)	
	Explain how systems are fit for purpose - examples include:	
	- Visual/Audio recognition	
	- Developed guidance, navigation, and control systems	
	- Robot-Robot interaction	
	- Natural Robot-Human Interaction	10
	- Stage/Robot localization systems	/9



Technical Description Paper	Demonstrates authenticity in the project development.	
	Clear descriptions of the four chosen features Hardware and	
	software choices are clearly described.	
	The submission was made using the correct format.	/6
Deductions (At discretion of	- Judges believe the work was not done by team members	
judges, up to 15 points each)	- Team members are unable to discuss their technical	
	involvement with the robot	
Total Score		/30

OnStage Performance Score Sheet 2022

Category	Examples of how high marks may be achieved a	ire	Mark
Visual Impact and Quality of	The robotic performance makes attempts to communicate		
the Whole Performance	with and engage the audience. For example:		
	There is a clear link/ theme/idea/message displ	ayed	
	throughout the performance. Theme is consiste	ent and is well	
	understood.		
	Performance is engaging and takes steps to ent	ertain the	
	audience. Effective use of the performance space	ce, relative to	
	the theme or overall idea.		
	Robot costumes compliment the performance,	add value, and	
	provide visual impact.		
	Interaction with original and innovative props of	or scenery	
	impacts the performance in a way that is engaging and adds		
	value.		
	Risky/difficult movements are taken and compl	iment the	
	theme.		
	Impactful and interesting interaction between r	obots and/or	
	humans		/ 16
Effective implementation of	Implementation of Features/Robotic Interaction	on/System	
features presented by the	Integration:		
team.	0 No implementation		
	1 Poor implementation - does not work as expe	cted and does	
	not add value to the performance		
	2 Average implementation - works as expected but does not		
	add value to the performance		
	3 Good implementation and impact - works as expected and		
	adds value to the performance		
	4 Excellent implementation and impact - works as expected		
	and adds extensive value to the performance		
	Feature 1:	//	
	Feature 2:	/4	
	Feature 3:	/4	
	Feature 4:	/4	
	Robotic Interaction:	/4	
	System Integration:	/4	/24



Deductions:	- Each unplanned human intervention (including remote or	
-3 for each deduction at	human controlled actions)	
discretion of judges	-One or more restart(s)	
	-Each 10 seconds over the allotted time (on stage or	
	performance)	
Total Score		/40