



Virtual RoboCup Asia-Pacific 2020

Technical Description Paper

Team Information

League Name:	OnStage Preliminary
Age Group:	<i>Primary</i>
Team Name:	Kriloff
The Participants Name:	<i>Ivan Morozov</i>
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1. Abstract

An important problem on which we had to work is the search of materials in order to design the robots were light and durable.

As a result, we used:

- *plastic*
- *aluminum profiles*
- *polypropylene pipes*
- *foam Boar*
- *foil*

2. Introduction

Team Background: Team Kriloff started participating in the Robocup OpenRussia in 2019 and took 3rd place in the national championship and was awarded in the nomination. Members of the Krylov team have extensive experience in participating in robotic competitions, including international ones. In RCAP in 2019 in Moscow, we took the 3rd place.

3. Strategy. **Robots Design and Structure:**

3.1. The Robot-cosmonaut is made from Tetrix parts mounted on a base.

- The chassis consists of 2 omniotic wheels, 2 wheels with the formula 2x4, 3 servos and 2 DC motors (one servo was made by the team themselves).
- The covering is made of Pollensa for ventilation shafts.
- The robot is equipped with an ultrasonic distance sensor and a Bluetooth module.
- The robot is controlled using the Arduino Uno micro-controller.

The Robot Martian cat going from elements of Tetrix and LEGO.

It has 2 motors and 2 servo drives on Board.

The undercarriage of the robot consists of 3 omniotic wheels with a 2x3 wheel formula.

The robot is equipped with a light sensor and ultrasonic distance sensors and a Bluetooth module.

The robot is controlled using the Arduino Uno micro-controller.

The Robot Rocket is made of polypropylene.

On Board there is 1 motor for lifting the rocket, 5 segments of SMD 5050 RGB led strip with pixel addressing.

All elements are controlled by an Arduino Nano micro-controller.

The Mars Surface robots are made from LEGO structures and Mindstorm micro-controllers.

4 of them are elementary 2-wheel drive bogies.

The robots are equipped with ultrasonic distance sensors.





One robot controls the movement of others using commands transmitted via the Bluetooth module.

4. Track Record

a. RoboCup Achievement: In RCAP in 2019 in Moscow, we took the 3rd place.

5. Discussion and Conclusion. Our Training Experience:

- While working on the show, we learned how to collect various materials to create robots.
- In addition, during the COVID-19 quarantine, team members had to constantly communicate with each other remotely over the Internet to solve problems.
- Another skill we learned while preparing for virtual competitions is the ability to create a video story for your show.

6. Acknowledgements

- The Kriloff team is grateful to the administration of Krasnoyarsk Lyceum 7 for technical support, as well as to the National Russian RoboCup Committee for the opportunity to participate in RCAP.
- We are also grateful to our parents for their love and faith in our abilities.