



## Future Innovators

### Season Challenge

Season 2022



# MY ROBOT MY FRIEND

## AGE GROUPS ELEMENTARY, JUNIOR AND SENIOR

Official Game Rules for the WRO International Final. Version: December 1st 2021

*(Note: Rules for local WRO events may vary!)*

WRO International Premium Partner



## INTRODUCTION

Robotics and artificial intelligence are becoming an increasingly important part of current research and science. Continuous progress in the field of robotics enables new robots to act in a better way in the environment of humans. The combination of robotics and artificial intelligence can change the world and especially the environment of humans.

Some people see dangers rather than opportunities in direct human contact with robots in the daily environment. The challenges of the future will be to seize the opportunities and to make robot-human interaction helpful and safe.

Service robots are already performing partially or fully automated services. They help people in difficult environments or with monotonous or dangerous tasks. As supporters and friends, robots take on a wide range of tasks to relieve people of time-consuming tasks and mental strain and to increase human comfort.

However, development is far from complete. What other tasks can robots take on in the future? How can it be ensured that robots act as helpers in your daily life?

We need your idea for your robot friend!

## Your robot mission

For the WRO Open Category in 2022, teams have the task to develop a robot model which represents the robot as a friend and helper in the daily life of people. Teams may choose one of the three areas (1, 2, 3) to work on, but they can also choose to work on a project that focuses on a combination of these three areas.



### 1. Robots at Home

In your home there are a lot of tasks that have to be done regularly. Robots can take over work processes autonomously or support people with tasks in or around the home. Maybe you already do household tasks yourself where a robot could simplify the work processes.

Since the robot works in the household in the direct environment of the human being, mutual consideration is particularly important. The robot should act in a way that does not endanger humans and vice versa.

We are looking for robotic solutions that perform tasks in the household in order to relieve the people that live there.



## 2. Robots in Rescue

Every rescue poses new challenges for the people involved. Apart from extinguishing fires, think of rescuing humans or animals from threatening situations or recovering cars. The protection of the rescue workers is always the top priority. During rescue operations in dangerous or inaccessible surroundings, the rescue may be delayed if the situation is not safe for the rescue crew.

We are looking for robotic solutions that can support and relieve the rescue services or that can carry out rescue tasks independently.



## 3. Robots in Healthcare

Healthcare is an important part of our world. As soon as we feel unwell, suffer from injuries, or are in need of other help, we go to the doctor.

Working in the healthcare sector is often strenuous and requires a high level of concentration from employees. This applies to a doctor's office, hospital, nursing home, and all other sectors of health care.

When dealing directly with people, however, care and consideration is required. A robot can help to improve the situation in the health care system or to make the work for health care professionals easier. A robot can help improve social interaction, can fetch and bring materials, or can even perform medical tasks.

We are therefore looking for robotic solutions that improve or support aspects of healthcare.

For all sub-themes mentioned above (Robots at Home, Robot in Rescue, and Robots in Healthcare) you can find a connection and inspiration using the Sustainable Development Goals. There are multiple goals that support the theme, depending on your project idea: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>