

**MIDDLE EAST TECHNICAL UNIVERSITY
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
EE-493 SENIOR DESIGN COURSE**

**DEVICES COMPETING TO CATCH FALLING BALLOONS PROJECT
STANDARDS REPORT**

07.12.2018

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I. INTRODUCTION

This report contains information about the Standards Committee Meetings of the Devices Competing to Catch Falling Balloons project. It mainly deals with providing the reader with all the necessary information for a clear understanding of the project and the standards. This mainly includes the project description that provide a fair insight, organizational structure and operations of the standards committee and the standards for the project.

II. PROJECT DESCRIPTION

The aim of the project is to construct a robot that will compete with another one to catch falling balloons. Five balloons will be launched one by one and two robots will try to catch launched balloons before they touch the floor. The robot that catches the balloon wins the round and the robot with the most balloons caught wins the game.

Size and movement of the robot are restricted. Robot shall fit in a cylinder of diameter 30 cm and height 40 cm and it must avoid touching, colliding with the other competing robot at all times.

Teams may include extra feature about detecting a balloon that is on the floor and preparing for the next launch.

III. THE STANDARDS COMMITTEE AND ITS OPERATIONS

The Structure of the Standards Committee

The Standards Committee composed of a total of four participants that are the representatives of four design companies: Bilgehan Şenay representing the company Pikachu, Berkay Mert representing the company Unicorp, Furkan Ataş representing the company Bedi, Barış Fındık representing the company Last Night. Under the coordination of Prof. Dr. Aydan Erkmen and Prof. Dr. Lale Alatan, Standards Committee performed its operations with Barış Fındık as the chairperson and Berkay Mert as the rapporteur.

The Operations of the Standards Committee

The operations of the Standards Committee have lasted a total of four weeks with each of the weeks having a specific topic of the standards.

In the first week of the committee meetings, representatives have decided which properties for the project were needed to be standardised and made a plan for the following weeks and discussions. Initial ideas on the decided properties were also proposed during the first week.

Second week included the standard topics of balloon properties (color, size, launch height, material) and issues regarding some of the game rules. Color and size properties of the balloons were not set in the second week as the teams did not have common ideas about them and those properties were left for the week three.

Color and size of the balloons were set in week three of the committee meetings. A more in depth discussion regarding the duration for balloons to stay stable for calling a catch, distance between the robots at the start and collision avoidance was held.

In the last week of the committee meetings, possible issues that may occur during the game were discussed. General concern was the movement of the robots before the launch of the balloons. With each of the companies having different solutions for the problem, a standard that suit every company was set. Finally, the standards were finalised during week four.

IV. PROJECT STANDARDS

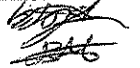
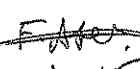
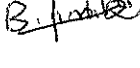

At the end of four Standards Committee Meetings, finalised standards for the project are as follows;

- Balloons shall be green colored.
- Balloons shall fit in a circle of diameter 22 cm.
- Material of the balloons shall be from Balonevi Pastel Balonlar.
- After their launch, balloons shall reach and pass 3 m height limit.
- Competitor robots shall be 2 m away from each other before the launch of the first balloon.
- A balloon is considered as "caught" if the launched balloon remained stable in either robot's catching mechanism for at least 3 seconds. Robot that catches the balloon is rewarded one point.
- Balloons that are not "caught" and touching the floor shall remain on the field for a duration of time. This duration is determined by the person who is launching the balloons and it is not set.
- If there is an uncaught balloon on the field, it shall be taken away before launching another balloon. Duration between taking away the uncaught

balloon and launching the next balloon is determined by the person who is launching the balloon.

- While launching a balloon, the person who is launching shall tell the companies that he/she is launching the balloon. Companies shall indicate the launch to their robots. Any indication method that the companies propose is allowed.

Signed by:

<u>Company Name:</u>	<u>Standards Com. Representative:</u>	<u>Signature:</u>
1. Pikachu	Bilgehan Şenay	
2. UNICORP	Berkay Mert	
3. Bedi	Furkan Ataş	
4. Last Night	Bariş Fındık	

Standard Committee Coordinators:

1. Prof. Dr. Aydan Erkmen
2. Prof. Dr. Lale Alatan

