

13th IEEE UAE STUDENT DAY, 2018

Engineering Design Project (EDP) Competition

Landing Object

General Information

- Only IEEE UAE Students Members are eligible for this competition.
- Each institution can submit a maximum of two entries in this competition.
- Each competing team shall have no more than four students.

Project Definition

Background

The idea of this project is about designing and building of a mechanical object (with no electrical parts) which will be dropped from a height. The team which achieves the longest falling time will be the winner.

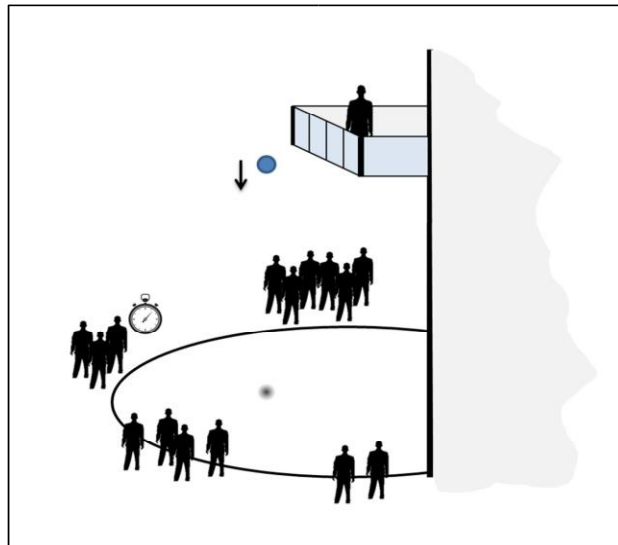


Figure 1 - Landing Object Competition

Competition Description

An object must be designed to extend its falling time when dropped from an indoor elevated platform (about 10 meters). The object could use a mechanical mechanism to perform any aerodynamic action that can help it achieve its target (e.g., wings, propellers, etc....). It can use simple aerodynamic structures (aeroplane) or any other method. **Innovate!**

Constraints and Requirements

- The stopwatch will be started once the object is released. The stopwatch will be stopped once the object lands.
- The object weight should not be less than 200 grams and not more than 500 grams.
- The maximum cross section of the object final form should not be more than 0.25m² for all sides, i.e. the object final form must fit inside a 50cm × 50cm × 50cm box.
- The object must fall within a 4-meter diameter landing circular zone.
- The object must not be electrically powered.
- The object should not use using gas (helium, hydrogen, hot gasses, etc.).
- Any type of hazardous materials and objects may not be used (fuels, explosives, etc.).
- Each team is allowed 2 trials; the best of them will be taken into consideration.

Evaluation Criteria

- The winning team achieves the highest score.
- In case of a draw, the teams repeat.

| # | Evaluation Criteria | Score (%) |
|--------------|--|-----------|
| 1 | Presentation + Poster * Information is clear and logical in the poster = 2.5% * Comprehensive presentation within 5 minutes = 2.5% * The object look is professional = 5% | 10% |
| 2 | Innovation * The object is considerably innovative | 40% |
| 3 | Falling Time * 1 st Place = 50% * 2 nd Place = 40% * 3 rd Place = 30% * 4 th Place = 20% * 5 th Place = 10% * Any other place = 0% | 50% |
| Total | | 100% |