



D-Drops

Launchpaper

Amsterdam – The Netherlands
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Introduction

For the first-ever drop, the treasure will be launched into space. From there the treasure will be dropped to a random location completely determined by the wind, temperature, and pressure differences in the atmosphere. Once the treasure has safely landed, holders of the DOP token can go hunting for the treasure. The treasure will consist of crypto assets worthy of 5% of the total raised sum during the ICO. In this paper, the means by which the treasure is launched, the overall system, and the process of the treasure hunt is described.

Timing

Approximately two weeks prior to the date of the drop the team will announce the country in which the treasure will be dropped and a countdown to that day will start on the D-Drops website. Somewhere within these two weeks, the team will launch the treasure, and once the treasure has safely landed the approximate location of the treasure will be sent to the DApp.

DApp and the Hunt

Once the treasure has safely landed, holders of DOP can connect their wallet to the D-Drops DApp and will be able to receive GPS coordinates of the treasure location. From that point, forward community members will be able to search for the treasure in the approximate location.

Claiming

When a community member finds the treasure they will have to send a claim request through the D-Drops website. A claim request will consist out of: the treasure code that can be found in the treasure, a wallet address where the content will be transferred to and a picture of the treasure found with surroundings

The team will check the code and confirm or reject the find based on the claim request. Once a claim has been confirmed the treasure is officially found and the treasure hunt ends. The person will receive the contents of the treasure after the team has contacted them and verified the request.

Physical launch

For the treasure launch, we will be using a weather balloon that can reach heights up to 35 km. From these heights, the curvature of the earth will be clearly visible and the sky will be dark as we would have placed ourselves above the majority of the earth's atmosphere. It is in these heights where the balloon will eventually succumb to the pressure difference outside and inside the balloon and pop. Once the balloon is popped a high-altitude balloon parachute will safely land the payload. The landing location will be within a specified radius (approximately 200km) from the launch sight but other than that it will be completely random.

Materials

The following materials will be used for the launch.

- 2 x GPS tracker GF-07, weight: (2x) 200g
- Plastic box, weight: 300g
- USB Stick, weight: 30g
- 4 meter of wires, weight: 250g
- 4ft. High Altitude Balloon Parachute, weight: 150g
- GoPro Hero5 + attachment setup 550g

Procedure description

Set up

A latex hydrogen balloon is attached to a 4ft High Altitude Parachute through a cord. A flat parachute is installed in such a way as to prevent the deployment of the main parachute prior to the desired fall speed. The main parachute is attached to the payload by means of a cord.

Process

The latex hydrogen balloon is launched from the ground and climbs to an altitude of 35km at a rate of 21km/h. The ascent will take approximately 2 hours. Once the balloon reaches burst altitude the balloon will pop and the payload will start accelerating towards the ground. At this time the flat parachute starts to generate more and more drag as the fall speed increases. Once the detach speed of the flat parachute is reached the flat parachute will detach itself and the regular parachute will be deployed which will reduce the fall speed to 20 km/h and safely land the payload.

The procedure is chosen in such a way as to make sure the payload doesn't drift too far away from the launch location and land within the predetermined radius from the launch location.

Appendix

Launch Math

Force Equilibrium: $F_g - F_h = F_y$

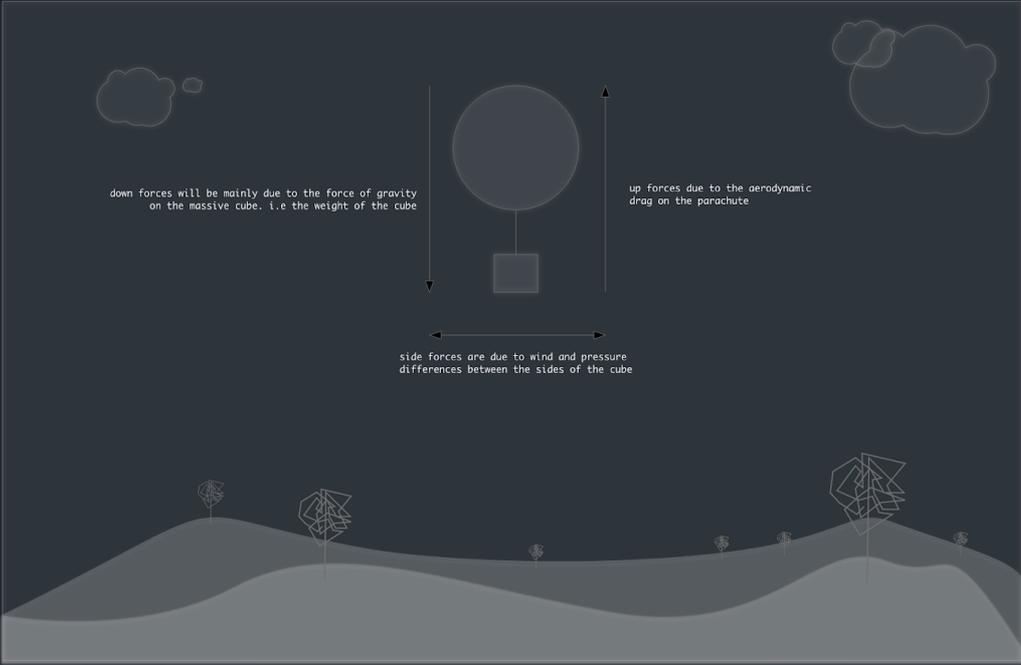
$S = \text{Surface area circle: } r^2 \cdot \pi$



$C_d \cdot 0.5 \cdot \rho \cdot v^2 \cdot S$
 $9.8 \cdot m = C_d \cdot 0.5 \cdot \rho \cdot v^2 \cdot S$
 $V = \sqrt{\frac{9.8 \cdot m \cdot 2}{\rho \cdot S}}$



$F_d = m \cdot g$
 $F_u = m \cdot C_d \cdot 0.5 \cdot \rho \cdot v^2 \cdot S$
Acceptable ground hit speed
= 20 m/s



<https://ddrops.world/wp-content/uploads/2021/05/launchmath.pdf>

End Note and Links

D-Drops is excited for the future we are trying to build. We hope that you share our vision and will join us in this journey.

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D-Drops Team

Website

<https://ddrops.world>

Documentation

<https://docs.ddrops.world>

Telegram Community

<https://t.me/ddropsworld>

Telegram Announcements

<https://t.me/ddropsannouncements>

Twitter

<https://twitter.com/ddropsworld>