

# Mechanical Data

For creating this models we had the following problems

1. Makes the drone attach to the surface of the ship
2. Make sure it can move by different forms of the satellite/ship
3. Make a design easy to build with aluminium.

## Attachment

In the earth there are a lots of ways to the drones to travel around but in the space just dont work. That is the case of propellers that needs atmosphere to work. The magnets works in the space but generally the fuselage of the ships are made by aluminium and aluminium is not a ferromagnetic material.

Whit a little investigation we find a NASA research about geckos and how they climb throw walls and roofs. The investigation shows than they attach to the walls by van der waal's forces and developed a material that uses the same principe to attach things in space. We use this materials to make the drone design putting it to the wheels.

A normal vehicle would have severals problems to move by sharp or strange forms without losing contact with the ship, so we had to develop a new form for the drone.

Inspired by centipods, Pangolines and other animals we decided to use a modular body as show in the image

This design allowed use to make the drone as big as we wanted just putting new bodys to the drone.

This design generates another problem, how do we join this bodys together without losing mobility? We solve this problem with the following mechanism



## Make it real

Each body has a “U” form with a little variations so we can make each one just using CNC cut machines ( laser, plasma or H2O cutters) and then creased to give them the form.

The unions (both parts) has to be created by lathe.

The materials we choose for this project is aluminium because it can be very thin and strong and is cheaper than materials like carbon fiber.