

## Concept

The concept we came up with solves one of the big problems of our current time: cleaning up the ocean of the huge amount of pollution. At the time, huge piles of plastic garbage exist that harm the ocean wildlife. These big piles are getting bigger and bigger due to the constant flow of new garbage into these designated garbage spot. Though there are solutions to clean up these large piles of garbage, no solution yet exists that prevents the big piles of forming. That's why we will make a drone that picks garbage relatively closely to the shore and retrieves it to the garbage spots on the shore. Therefore, preventing the problem instead of solving it after the problem has formed and damage has already been done.

## Operate

The drone will use a specially designed net to fish out specific pollution types. It will have floats to make sure that it does not have to generate power when there are no waves and the drone will be water tight. Eventually the aim is to use a cheap onboard camera to sort out the pollution to make it fly automatically, this will however probably not be achieved in the timeframe for the CDIO academy.

## Manufacture

Even though a precise idea of how the robot will be made is not present yet, a basic concept will be described in this section. Below the drone a net will be mounted just as some floats to keep the drone above the water and a protective layer will be applied to make the drone water tight. The net will be kept in place by a special lock to prevent the servos from constantly using power. All of this will be designed by the use of wire and parts that are precisely cut with the laser cutter.

## Notes

One might wonder why it is chosen to use a drone instead of a boat since it is operated in water anyway. The reason we chose to go with a drone is that however we do think boats are easier for the big piles of trash (a drone could not simply carry that much weight) we strongly believe that the drones are way more efficient than the boats for the small amounts due to two reasons:

1. A drone is able to locate small amounts of trash way better than a boat due to it floating in the air. It is not handy to hope for the best with boats to randomly float besides trash. A drone can see a bigger area at a time and can therefore locate the trash very fast.
2. The drone is able to operate at a speed that is way higher than is the case with boats, therefore drastically improving efficiency.