Level 5

Now that you can coordinate a fleet of drones, let's get to work and **deliver some parcels**!

Drones can now pick up and drop parcels. Each parcel must be picked up at its pickup location and then carried to its destination. One drone can possibly carry multiple parcels up to its bearing load, but it can only drop them in the same order they were picked up (FIFO, stack-like behaviour). But watch out, your drone will have to compensate for the additional mass with increased thrust!

A parcel is considered delivered if it is within 5m from its destination (Euclidian distance).

Model in the Simulator

1. Drone
    a. ID (integer)
    b. Position (3D, floating point)
    c. Velocity (3D, floating point)
    d. Thrust orientation (3D, floating point)
    e. Bearing Load (floating point)
2. Parcel
    a. Weight (floating point)
    b. Pickup Location (2D, floating point, always on the ground)
    c. Destination (2D, floating point, always on the ground)

Initial Input Lines sent by the Simulator

N M	where *N* is the number of drones available and *M* is the number of parcels to be delivered
c	the bearing load of the first drone
...	followed by subsequent lines of capacities
w px py dx dy	weight, pickup location and destination of the first parcel
...	followed by subsequent lines for the remaining parcels
t	the time constraint for this test case

Example	
2 3 2	Number of drones (2), parcels (3) and charging stations (2).

`1.0` `0.7`	Capacity of the two drones.

`0.5 25.0 25.0 75.0 75.0`
`0.5 25.0 50.0 75.0 50.0`
`0.5 50.0 25.0 50.0 75.0`
	Weight, location and destination for the three parcels.

`3000.0`	Time to deliver all parcels.

New Commands

In order to pick up a parcel, your drone must be at maximum 1m away from the parcel (Euclidean distance).
Remark: by design of the test cases no pickup locations are close enough so that more than 1 parcel could be within 1m. However, if you drop parcels at any location which could lead to multiple parcels close together. A `PICK` command would then fail (since it would no longer be deterministic which parcel you pick up).

Request	**Response**	**Description**
`PICK` *N*		where *N* is the ID of a drone
	`OK`	

Before you can drop a parcel, you have to land the drone. Then you can drop a parcel (i.e. the last parcel that the drone picked up).

Request	**Response**	**Description**
`DROP` *N*		where *N* is the ID of a drone
	`OK`	