

## **Abstract**

### **Theme:**

Industry

### **Title of the project:**

Ksheera

### **The Problem:**

The problem statement we have selected is that people who are in the fishing industry or who go fishing find it difficult in knowing the exact location or approximate site of the best fishing (high quantity and quality fish (swordfish, tuna fish, etc)) so that the time of being at the fishing location could be used more effectively and productively.

### **The team's approach to solving the problem:**

1. Our idea is to build a network of robots that moves inside the sea or ocean wherever the fishing is done in a specified area with the basic knowledge and get the data (microplastic concentration, pH, temperature, dissolved oxygen, etc.) of conditions of the ocean or sea, analyze the data and compares with the data which favors the fish and suggests the best area of fishing.
2. The design is chosen to be streamlined, as it makes the Robot move efficiently inside the water body.

The bot is equipped with four thrusters two present on the sides for the movement of the bot to move on the x and y-axis and for the movement on the z-axis the bot uses the concept of neutral buoyancy to move wherein There are two chambers present within the robot. The two chambers are equipped with 2 pumps which take water for the moment of the bot in the negative Z-direction and attains neutral buoyancy with the amount of water taken in, making the density of the robot equal to the water and remaining stable at that position at a depth of 5 meters, for the movement in the positive Z direction, the bot expel out the water which was taken in earlier making the bot lighter than the water to move towards the surface of the water.

There are 2 more thrusters present on the bot which take in information from the Gyroscope and accelerometer for maintaining the trajectory of the robot and attenuating the disturbances caused in the water body, thus making the robot complete the trajectory without changing the initial and final mapped points.

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