The garbage patch of the pacific is a cluster of trash that is produced by the ocean currents, this patch has twice the size of Texas.

Our challenge is to clean up that garbage patch using a ship that doesn't use fossil fuels. We also decided to make it autonomous, which is also a big challenge. Lastly we needed to make it durable, efficient, and capable.

We decided to use a catamaran ship, these ships are known to be very stable, fast and also have the perfect characteristics to support the amount of monocristaline solar panels and a sail that we would need to power this ship. For our trash clean up mechanism we would use a conveyor belt to pick up the floating debris, and by having a split hull we can put our belt in there and also it is really stable.

We would localize the garbage patch by following the oceanic curents traced by NOAA, and it would be guided by GPS aided with sensors to avoid objects.

Once inside the ship, water and solids would be separated. Water would be treated for pollutants (oil, gasoline, etc). Solids would be separated by organic and inorganics using vision sensors, were organics will be drop back to the ocean and inorganics further separated into categories. Once separated into materials by the vision sensors they would be compacted and packed in reusable mech-bags to be dragged by the boat or leaved on a common shipping route to be picked by other boats and then taken to ports either in Taiwan, Japan, or Singapore to be sold. that money then can be used to repair and take care for the boat.

For materials we were planning on using iron for the hull, fiber glass for the deck were the solar panels and navigations antenna would be. And carbon fiber for the props and reinforcement. The mass could be made using an aluminum tube reinforced with another of carbon layer.

History of catamaran:

Its design is based on a raft of two logs bridged by planks that had earlier been used by peoples in the Indonesian archipelago and throughout Polynesia and Micronesia. Early catamarans were up to 21.3 meters (70 feet) long, originally paddled by many men, and used for visiting, in war, and in exploration. Especially after the sail was added, voyages of more than 3,704 km (2,000 miles) were made.

During the 20th century the catamarans were widely use in sail races. Their design make them very stable and have a low drag on water, wihh in combination with an engine can achieve speeds higher than 36km/h.

(The Editors of Encyclopaedia Britannica. (1998). Catamaran. 10/20/2019, de Enciclopedia Britannica Sitio web: <https://www.britannica.com/technology/catamaran>)

Description of our ship:

Hydro-trash: It is a catamaran type ship powered by a hybrid system, monocrystalline solar panels and sail. This will allow our ship to keep working no matter the climate.

The way this boat collects trash is by trapping it on a red and then realizing it for other ships to collect.