

Turtle, the Oil Hunter

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Turtle is a reptile that has a hard shell with beautiful motif. This special 'turtle' is different from any other turtles because it has no hard shell as its body protector, nor can it walk on the land but the waters.

Don't get misunderstood, this 'turtle' has a special feature that can observe the availability of oil in its surroundings. Well, this is not a real turtle but a semi-automatic unmanned ship that is developed by a number of students of Faculty of Mathematics and Natural Sciences UGM. They are Meuthia Fawzia, Ary Kusumaningsih, Firdhaus Azhar, Kristiawan Devianto, and Muhammad Nur Fattah.

They all developed *Si Penyu* (Marine Areas Management System) due to their concerns over oil spills that pollute the sea which is not well taken care of. Also, there is the rampant stealing of fish by neighbouring countries.

"The presence of *Si Penyu* is expected to be able to help the government in mapping the sea areas that are polluted by oil spills. The ship is also able to map fish population to enable fishermen catch the fish," Meuthia said when contacted by telephone on Tuesday (10/9).

Meuthia explained that *Si Penyu* is equipped with two sensors, namely oil sensor and fish sensor. The data will be displayed in a graphic user interface.

"Sonar sensor is able to detect the presence of fish until 100 meter of depth, while the oil sensor can

detect oil of 10 centimeter depth,” she explained.

The ship weighing 3 kilogram, 50 centimeter in length and 27 centimeter in width is equipped with GPS, compass, accelerometer, gyroscope, and serial communication module, XBEE. Operated with batteries of 18 volt, Si Penyu can move up to 50 Km/hour covering a distance of 1 kilometer.

“Si Penyu is added with buoys on its right and left sides to balance the ship when in waters,” Firdhaus added.

It cost Rp10 million to make the ship. Most of its components are imported materials, including the GPS, batteries, accelerometer, gyroscope, and sonar sensor while the oil sensor is obtained domestically. “Almost 80% of the components are imported,” he said.

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