Seaswarm: MIT unveils robots capable of cleaning up oil spills (w/ Video)

August 26 2010, by Miranda Marquit

Seaswarm robot.

The Deepwater Horizon debacle has once again illustrated the difficulties we face when it comes to mopping oil spills. However, MIT thinks that it has found an answer to the problem: Tiny robots that can assess the situation and then clean it up.

MIT calls its group of robots Seaswarm. Seaswarm is a floating system of robots that looks like a conveyor belt sticking out of a boxy contraption bearing a resemblance to a cooler. The belt, though, is covered by a fabric made from nanowire mesh. The mesh absorbs the oil, while repelling the ocean water. There are two things that Seaswarm can do with the oil once it is collected:

- **Burn it**: The boxy part of Seaswarm is actually a heater, and can burn off the oil right there.

- **Save it for later**: A Seaswarm robot can also bag the oil, leaving it on the surface of the water. It can then be picked up and used for something else.

Each robot costs approximately $20,000, and is designed to work in a swarm with other robots. MIT's Senseable City Lab offers this explanation of how the swarm works:

Seaswarm is intended to work as a fleet, or "swarm" of vehicles, which communicate their location through GPS and WiFi in order to create an organized system for collection that can work continuously without human support. Because they are smaller than commercial skimmers attached to large fishing vessels, they are able to navigate hard to reach places like estuaries and coast lines. Seaswarm works by detecting the edge of a spill and moving inward until it has removed the oil from a single site before joining other vehicles that are still cleaning. Oil is "digested" locally so that Seaswarm does not need to make repeated trips back to shore, which would dramatically slow collection time.

Even if you had a fleet of these robots, costing $20,000 apiece, it should still be possible to reduce the cost and time involved in cleaning up ocean oil spills. CNN reports that the BP oil spill would have been cleaned up in two months, with a cost of between $100 million and $200 million -- an outcome much more desirable than the current reality.

Seaswarm is set to be unveiled on Saturday in Venice at the Biennale, whose current theme is how nanotechnology will change our lifestyle by 2050.

More information: -- "Sea Swarm," Senseable City Lab, Massachusetts Institute of Technology. Available online: senseable.mit.edu/seaswarm/index.html

-- John D. Sutter, "MIT unveils swimming, oil-cleaning robots," CNN.com (August 26, 2010). Available online: www.cnn.com/2010/TECH/innovati … 08/26/mit.oil.robot/

-- "MIT to debut oil-slick absorbing robot," MSNBC (August 26, 2010). Available online: www.msnbc.msn.com/id/38855938/ … _science-innovation/.