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## Wireless Robot Octopus Swims with the Fishes [Video]

By Katherine Harmon Courage | September 26, 2014 |

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Image courtesy of Dimitris Tsakiris et al.

Robot octopuses can already walk, jet along and even grasp tools. But new advances have these machines swimming faster than ever. And thanks to the addition of soft, fleshy webs, they're starting to look—and move—much more like the real thing, too. In fact, the latest octopus robot has already been for a successful swim—alongside real fish—in the sea off the coast of Crete.

The same team of researchers from Greece built an arm-y bot that mimicked the swimming

styles of real octopuses—and even added a “sculling” stroke—last year. This year they have made a new step toward a more lifelike robotic octopus by adding the web to its soft arms. And setting it free from cables.

The robot is controlled wirelessly via radio frequencies, and its on-board battery can last for an hour of solid swimming. The body of the robot is Polyurethane, cast in molds made on a 3D printer. The soft web-arm combo is made from silicone, which, like a real octopus, has a similar density to water. The webby octopus was presented last week at the IEEE/RSJ International Conference on Intelligent Robots and Systems in Chicago.

The robot can swim at speeds up to half a body length (or 180 millimeters) per

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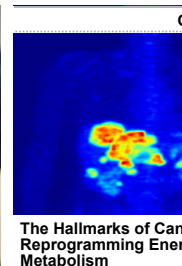
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intended purposes, as a search and rescue tool. But it still leaves other cephalopod robots in its figurative wake. And does so efficiently compared with web-less models, the researchers note.

The researchers hope that some day, such soft, efficient and speedy robots will be able to help with “inspection of underwater structures, search and rescue operations or the exploration of marine ecosystems,” they note in their paper.

Some swimming robot competitors, such as the [RoboJelly](#) and [AquaJelly](#) machines, have already used a web-style approach to propulsion. But these have been based instead on jellyfish and have more limited swimming styles, the researchers note. The robot octopus can turn and crawl, if awkwardly, as well.

Arms that serve double duty, helping with locomotion and with object manipulation, were “inspired by the outstanding capabilities of the octopus,” the researchers note in their paper.

Why not just hire a real octopus? They’re a little temperamental. And still haven’t learned how to take verbal instructions.

Read more about robot octopuses in *Octopus! The Most Mysterious Creature In the Sea*.

Illustration courtesy of [Ivan Phillipsen](#)



**About the Author:** Katherine Harmon Courage is a freelance writer and contributing editor for *Scientific American*. Her book *Octopus! The Most Mysterious Creature In the Sea* is out now from Penguin/Current. Follow on Twitter [@KHCourage](#).

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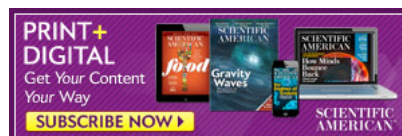
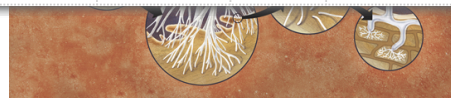


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