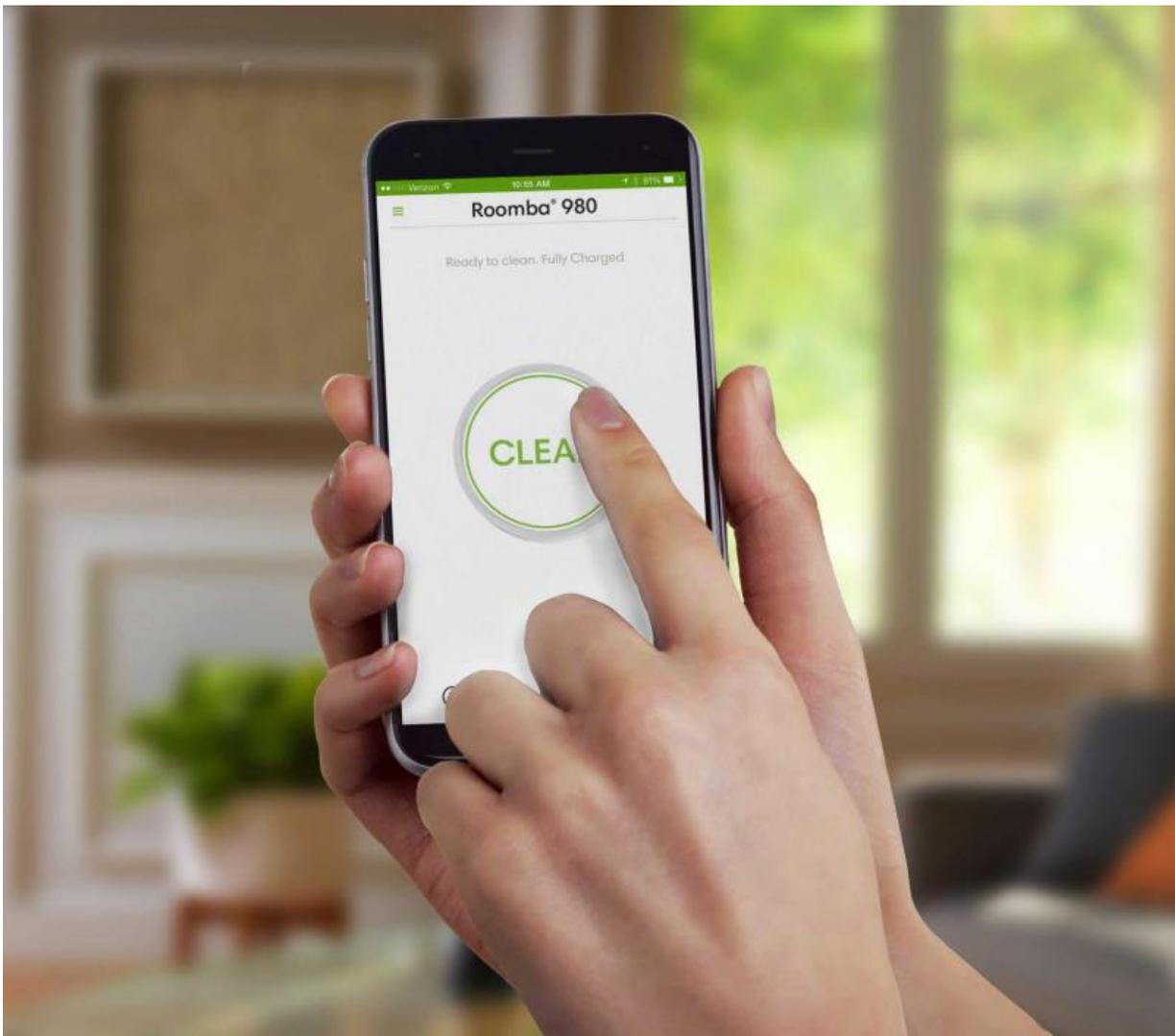


# Roomba 980 cleans smart, flexes muscles when on the carpet

September 17 2015, by Nancy Owano

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The iRobot Roomba 980 was announced earlier this week; many people recognize the "Roomba" name as standing for a little cleaning machine with smarts. The latest machine is attracting technology attention even among those who live in humble spaces where ordinary mops, sponges, cloths and brooms are enough to get them through the year. It's interesting.

The iRobot Roomba 980 is one round little robot, as technology watchers said at the announcement. It packs new features and functions into one cleaning form factor. Agitation, brushing, suction, and a spinning side brush that sweeps corners are all there to get the job done but that is not the full story.

There is a suite of sensors. When on carpets and rugs the device automatically increases power. It knows where it has already been and where it still needs to go. Evan Ackerman and Erico Guizzo brought their overview of the cleaner to *IEEE Spectrum*. Visual mapping and navigation features were highlighted in their report, along with Wi-Fi communication and remote control with a [smartphone app](#).

Its navigation system has it moving from surface to surface, room to room and avoiding stairs. A camera allows navigation, said *IEEE Spectrum*, via vSLAM (Vision Simultaneous Localization and Mapping).

In fact, the company said in its launch release that this is the first time it is using its vSLAM [technology](#) in a consumer product. With it, the little robot can navigate larger spaces than before.

Ackerman and Guizzo described how vSLAM works.

"On top of the Roomba 980 there's a camera pointed forward and up at what looks to be about 45 degrees. VSLAM is a way of dynamically building a map while keeping track of your own position at the same

time. To create a map, the camera takes a picture, and then some fancy software looks for distinctive patterns of pixels in that [picture](#)."

The robot continuously tracks features, adds new ones as it goes, until it has a picture-based map of the environment. It uses a simple camera and custom digital signal processors, said *IEEE Spectrum*.

Its app, for iPhone or Android devices, allows the user when away from the premises to schedule and monitor the cleaner. You can see how charged it is, can set different behaviors such as choosing between one or two cleaning passes or what to do when the dust bin is full.

It goes non-stop for up to two hours, and re-charges automatically.



An overview of the product in *MIT Technology Review* included some background on the company: iRobot was founded in 1990 by researchers from MIT's Computer Science and Artificial Intelligence Lab. The first

product was a remote-controlled machine for the military, capable of tasks such as bomb disposals. In 2002, the company got into Roomba [home](#) robots.

Beginning September 17, Roomba 980 is available in the United States and Canada for \$899; Roomba 980 will be available in Japan and select European countries later this year.

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Citation: Roomba 980 cleans smart, flexes muscles when on the carpet (2015, September 17) retrieved 24 April 2024 from <https://techxplore.com/news/2015-09-roomba-smart-flexes-muscles-carpet.html>

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