

New technology allows people to take a 'virtual field trip' to an aquarium tank

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A Boise, Idaho, company is taking armchair adventuring and learning to a new level by letting anyone on the Internet take command of a remotely operated underwater vehicle.

The LiveDiver device from Reach-In is now installed at the Aquarium of Boise. By logging into the aquarium's website, users can control a small mini-submarine in the shark and fish tank to get a diver's perspective of the marine life.

Visitors can even snap pictures of the finned critters - if Letterman the puffer fish will let them. But more on him later.

EYE ON ANIMALS

Reach-In's first public-access venture was iPet Companion, which let users play with cats in 13 animal shelters across the country, including the Idaho Humane Society, by controlling robotic toys over the Internet.

The iPet Companion helps increase cat adoptions and shelter donations, and provides an opportunity for disabled or sick people to interact with playful felines, said Reach-In owner Scott Harris.

At Seattle Hospital, children who cannot play with therapy pets because of their compromised health can go online and play with cats in animal shelters, he said. In June, Wolfson Children's Hospital in Jacksonville, Fla., said it would use the iPet system to connect 162 hospital rooms to

allow patients in isolation to play remotely with cats at the Jacksonville Humane Society.

Kittens are fun, but Harris wanted to find other ways people could use the real-time interactive technology.

Reach-In's Web-controlled submarine is the first of its kind, he said.

"Many zoos and aquariums have submarines that are controlled locally, but controlling devices over the Web is an entirely different ballgame," said Harris.

EDUCATIONAL AIM

While the Aquarium of Boise thinks the public will get a kick out of the device, its primary target is students, said aquarium biologist Nate Hall.

"This is another hands-on, interactive-learning way to promote science education," said Hall. "We can go into classrooms anywhere in Idaho or the country, and the students can do a live session with me as well as drive the submarine." Students learn about aquatic animals as well as the science behind the technology: Just how, exactly, does someone sitting in a classroom control a submarine hundreds of miles away in a fish tank in Boise? Hall envisions the program connecting with students throughout the state - especially in rural areas - who can experience the aquarium without a costly field trip to the city.

"It is a virtual field trip," Hall said.

When the submarine is not being used for educational purposes, the public can log on for two-minute sessions piloting the little vessel.

The submarine requires a tether, since it is difficult to transmit wireless

image and video signals through water. As technology improves, untethered remote devices could roam the ocean or other remote places, said Mark Bolander, LiveDive commander-in-chief.

"Imagine diving the Barrier Reef from Boise," Bolander said. "It is just a matter of time." Until then, viewers can whet their appetite exploring the Aquarium of Boise's 17,000-gallon tank, which is home to a 4-foot-long leopard shark, a 5-foot-long green moray eel and several other sharks and fish - including the infamous Letterman.

MORE ABOUT LETTERMAN

The [aquarium](#)'s leopard, bonnethead and blacktip reef sharks pay the submarine no mind. Instead, the sub's nemesis is a 30-inch-long gap-toothed mappa puffer named Letterman, who has developed a penchant for biting the mini-sub's cable.

"We were doing so well. Four weeks of flawless operation," Bolander said. Then Letterman decided to start chomping the mini-sub's tether, interrupting its video feed several times.

Crews tried wrapping the cable in Kevlar and stainless steel mesh. The persistent puffer keeps prevailing.

"He has got a set of jaws," Bolander said early this week while repairing Letterman's damage yet again.

The puffer is armed with four protruding teeth, which it uses to crush its prey - and cables.

"This little guy ... he is the most dangerous animal in here," Bolander said.

The curious puffer not only likes tormenting the mini-sub, but also hamming it up before the camera.

"He is not bashful, he comes right up to the camera," Bolander said.
"You can really get some good images of him."

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