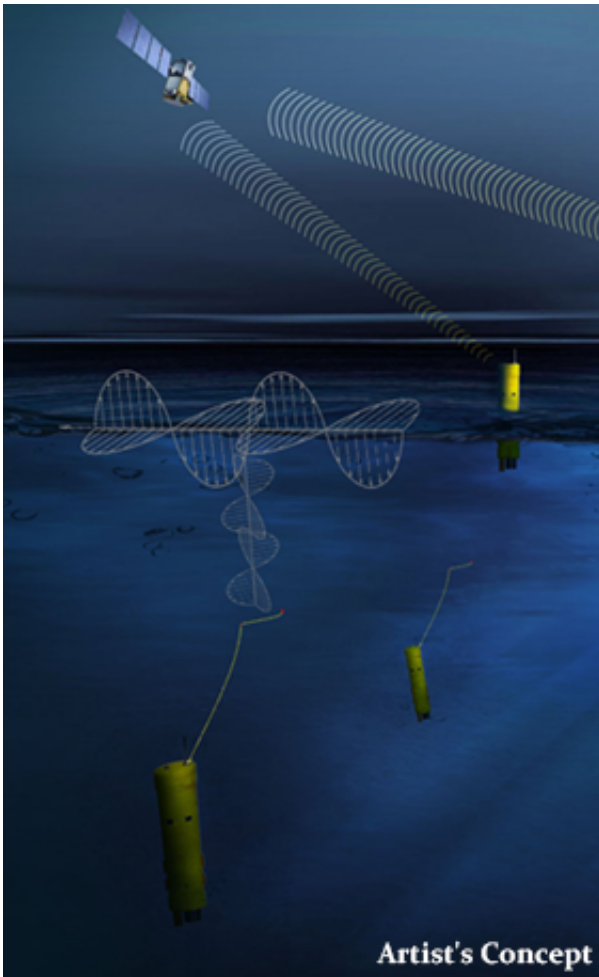


Upward falling payloads advances deep-sea payload technology

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This artist's concept shows a potential communications application of an upward falling payload.

DARPA's [Upward Falling Payloads \(UFP\) program](#), which intends to address these challenges, centers on developing deployable, unmanned, nonlethal distributed systems that would lie on the deep-ocean floor in special containers for years at a time. US forces could remotely activate these deep-sea resources from remote command centers, and recall them to the surface when needed. In other words, they would "fall upward." The program is completing its first phase and is about to enter its second.

During Phase 1, DARPA supported more than 10 study and design efforts to figure out approaches for long-range communications, deep-ocean high-pressure containment, and payload launch. The study teams also addressed a variety of missions for the payloads.

"In this first phase, we really learned about how the pieces come together, and built a community of developers to think differently about unmanned distributed solutions for the maritime domain," said Andy Coon, DARPA Program Manager for the effort.

"The trick is to show how these systems offer lower-cost alternatives to traditional approaches, and that they scale well to large open-ocean areas," said Coon.

In the next Phase, DARPA intends to learn from the studies, and develop and demonstrate prototype systems. DARPA is seeking teams to develop UFP nodes that combine expertise in both deep-ocean engineering and advanced payload development.

"We're also looking for the communications technologies for these nodes. As long as you can command the nodes remotely and quickly, and don't have to send a ship out to launch it, you're in good shape. Some Phase 1 approaches were more exotic than others, but we were pleased by the range of challenging options," said Coon.

In today's fiscally constrained environment, such a system of pre-positioned, deep-sea nodes could provide a full range of maritime mission sets that are more cost-effective than existing manned or long-range unmanned naval assets.

For Phase 2, DARPA is particularly looking for technology communities that can team to provide expertise and innovation for small sensors, expendable and small unmanned systems, distributed communications and navigation technology, novel long-range underwater communications, and long-endurance mechanical and electrical systems that can survive for years in dormant states.

Provided by DARPA

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