# DARPA develops technologies for aiding disaster relief

June 27 2012

This is the parafoil unmanned air-delivery system -- a low-cost, propeller-driven air vehicle that uses a parachute for lift and carries urgent supplies from the container ship to stricken areas on shore. DARPA's Tactically Expandable Maritime Platform (TEMP) program has completed the design of innovative technologies to transform commercial container ships into self-contained floating supply bases during disaster relief operations, without needing port infrastructure. Credit: DARPA

During natural or man-made disasters, the U.S. armed forces' rapidly deployable airlift, sealift, communication, and medical evacuation and care capabilities can supplement lead relief agencies in providing aid to victims. The Department of Defense's 2012 strategic guidance document includes humanitarian assistance and disaster relief operations as one of the missions for 21st Century defense.

DARPA's Tactically Expandable Maritime Platform (TEMP) program

has completed the design of innovative technologies to transform commercial container ships into self-contained floating supply bases during disaster relief operations, without needing port infrastructure. The program envisions a container ship anchoring offshore of a disaster area, and the ship's crew delivering supplies ashore using DARPA-developed, modular on-board cranes and air- and sea-delivery vehicles.

"To allow military ships and aircraft to focus on unique military missions they alone can fulfill, it makes sense to develop technologies to leverage standard commercial container ships, used around the world daily, as a surge capacity for extended humanitarian assistance and disaster relief operations," said Scott Littlefield, DARPA program manager.

DARPA recently completed the first phase of the program, which developed four key modular systems, all of which are transportable using standard 20-foot or 40-foot commercial shipping containers. The elements include:

- Core support modules—container-sized units that provide electrical power, berthing, water and other life-support requirements for an augmented crew aboard the container ship.
- Motion-stabilized cranes—modular on-board cranes to allow transfer of cargo containers at sea from the ship deck over the side and onto a sea-delivery vehicle.
- Sea-delivery vehicles—Captive Air Amphibious Transporters (CAAT) have air-filled pontoons on a tank tread-like design, enabling them to carry containers over water and directly onto shore.
- Parafoil unmanned air-delivery system—a low-cost, propeller-driven air vehicle that uses a parachute for lift and carries urgent supplies from the container ship to stricken areas on shore.

While DARPA's investment in demonstrating the technology has completed, the information obtained should reduce risk for efforts of the military Services or other government organizations with a humanitarian assistance and disaster relief mission.

Provided by DARPA