

AUTONOMOUS BRIDGING KIT

Safer, Faster, Wet Gap Crossing Operations

THE PROBLEM

Water (or “wet gap”) crossing operations are incredibly resource- and labor-intensive, requiring many personnel to maneuver and connect Improved Ribbon Bridges (IRBs) — temporary, mobile bridges.

Soldiers build IRBs to transport troops, vehicles, and equipment across bodies of water when permanent bridges aren’t available. Multiple sections, called “bays,” connect to form the IRB. One by one, bays are dropped into the water, pushed together by crewed boats, manually attached by Soldiers standing atop the bays, fully loaded with cargo, and then maneuvered by boats across the wet gap. As Soldiers and equipment remain in fixed locations to conduct these time-consuming operations, they become increasingly vulnerable to enemy detection and attack.

THE OPPORTUNITY

The total funding for awards in this Direct to Phase II (DP2) effort is \$1,900,000. Awardees will develop a prototype of a kit/system that autonomously assembles IRBs and includes waterway navigation.

DP2 proposals should build on the design formulated according to Phase I requirements described in the “PHASE I” section of the solicitation. Required Phase II deliverables include the Technology Readiness Level (TRL) 6 prototype for further Army evaluation, a demonstration of the prototype, and monthly and final reports detailing design and performance analysis of the prototype. The period of performance for this DP2 effort is 12 months.

Solutions should:

- Be interoperable with the [current IRB system bay connection](#).
- Not interfere with delivery of IRB or degrade emplacement and attachment of IRB.
- Provide a propulsion system that operates in water depths of 27 inches or fewer and maintains or exceeds a speed of 11 feet per second (fps), when loaded with [120/150 Military Load Classification](#).
- Enable bridging platforms to conduct fully automated waterway navigation across a minimum distance of 600 meters.
- Have a minimum continuous operating time of nine hours.
- Autonomously connect and disconnect bays while maintaining remote, human-in-the-loop capability.
- Autonomously navigate and maneuver bridging platforms on waterways while maintaining remote, human-in-the-loop capability.
- Detect and avoid obstacles in the water and transmit obstacle recognition and location data to external platforms.
- Enable full assembly of bridging solutions in under 20 minutes.

SOLICITATION MILESTONES

Applications open: May 16
Applications close: June 11 at 11:00am CT
aal.army



THE SPARTN PROGRAM

Special Program Awards for Required Technology Needs (SPARTN) blends government and industry best practices to introduce a new whole-of-Army, collaborative approach to solution innovation. The result is a way to solve Army problems faster and to accelerate the process by which successful technology is purchased by the Army.

All topics released through SPARTN feature challenging and important problem statements from problem owners across the Army. These represent some of our biggest challenges and the ones we want to work closely with industry to solve.

WHAT MAKES SPARTN DIFFERENT?

- Problems released through SPARTN are tied to the Army's critical needs and other focused modernization efforts
- Faster contracting speed, with businesses typically notified of award 4x faster than the conventional SBIR process
- Potential for millions in total value of follow-on contracts to build a concept or prototype related to the specific problems
- Acquisition teams included early on, with the goal of easing transition and building new tech into recurring Army budgets
- Potential for future high-value contracts by combining SBIR or other government funds, and private investment you secure

To learn more about SPARTN or how to apply for SPARTN topic, visit aal.army/SPARTN.



AUTONOMOUS BRIDGING KIT SPARTN PHASES

I

Phase I requirements include designing a preliminary autonomous kit that integrates into current Army wet gap bridging platforms. Preliminary design should describe the hardware, software, and a concept of autonomous assembly of wet gap bridging platforms and include autonomous waterway navigation.

II

In Phase II performers refine the preliminary design developed from Phase I equivalent and create a Technology Readiness Level (TRL) 6 prototype of an autonomous kit. Phase II deliverables include the TRL 6 system and operational demonstration for performance evaluation. Additionally, the performer will deliver monthly progress reports detailing design and performance analysis. At the end of the period of performance, the performer will submit a final technical report.

III

The objective of Phase III, where appropriate, is to transition the technology to a US Army Combat Capabilities Development Command (DEVCOM) lab for further development, or to a Program Executive Office (PEO) for potential acquisition pathways. Phase III goals may include multiple live demonstrations of the technology at an appropriate, Government-approved location.

ONLY DP2 PROPOSALS WILL BE ACCEPTED FOR THIS PROJECT

OTHER OPPORTUNITIES

AAL regularly launches new projects to apply cutting-edge commercial technologies to Army problems. AAL wants the best innovators and technologists in the world to help get real, relevant solutions into Soldiers' hands.

Keep your eye on aal.army/industry/#opportunities and join our network be the first to know about new projects.

JOIN OUR NETWORK

