S²MARTS "Coming Soon" Opportunity (22-03)

Delphinus Prototype

The Department of the Navy (DoN) is seeking prototype support in maritime systems of expendable unmanned systems with subsystem integration.

Unmanned systems and commercial components are becoming common place and readily available for a multitude of applications. Candidate component technologies that are available for design and integration to satisfy ONR's vehicle requirement include currently available vehicle housing materials, batteries, controllers, interfaces, and best practices.

It is expected that current high Technology Readiness Level (TRL) or Commercial Off The Shelf (COTS) material designs may meet some technical objectives, but will require varying levels of modifications to:

- Mechanical design and housing (e.g., containment, pressure rating, sealant and watertightness, and deployment mechanism)
- Electrical design (e.g., power density for battery operation, controller for subsystems and health status, and on/off/sleep functionality)
- Modularity and integration (e.g., incorporation of RF sub-systems and antennas)
- Hardening/ruggedization for a maritime application

The key objectives of the Delphinus Prototype include overall mechanical and electronic compatibility with modular payloads, inclusive of Neptune and other payloads to be integrated that will be provided as Government Furnished Equipment (GFE). The GFE will maintain original design parameters and form factor to meet Size, Weight, Power, and Cost (SWAP-C) objectives, such that GFE payloads can be modular and interchanged. Delphinus will provide flexibility for integration and procurement of a vehicle that can be deployed and incorporate a modular payload. Delphinus will include design flexibility to identify and develop alternative designs for other form factors and deployment mechanisms. A balance between performance/capability and cost is desired to provide an expendable vehicle that can be affordably fielded in quantities sufficient to make employment feasible.

The Delphinus project's period of performance will be defined based on the performer's proposed schedule, but is currently estimated to be complete within 48 months for the entire effort.