

WHO

**SYSCOM:** SSP

**Sponsoring Program:** SPC7 - Hypersonics

**Transition Target:** Conventional Prompt Strike (CPS)

**TPOC:** [SSP.SBIR@ssp.navy.mil](mailto:SSP.SBIR@ssp.navy.mil)

**Other Transition Opportunities:** Programs seeking agile RF protection and switching, particularly those with fast switching and/or high-power requirements and stringent SWaP constraints.

**Notes:** Compact Plasma Discharge Cells (CPDCs) enable nanosecond-fast, electronically tunable power limiting for defense against directed energy threats.



Left, U.S. Navy photo, <https://media.defense.gov/2018/Apr/05/2001900017/-1/-1/0/180326-N-UK333-005.JPG>. Right image courtesy of Verus Research, 2022.

WHAT

**Operational Need and Improvement:** Navy SSP must harden RF systems of the Conventional Prompt Strike (CPS) against a wide range of potential High-Power RF threats.

**Specifications Required:** Fast, electronically tunable, in-line RF power limiting for use aboard hypersonic platforms.

**Technology Developed:** Advanced RF manufacturing, high-performance dielectric potting, plasma device modeling and RF plasma controls.

**Warfighter Value:** RF switching and protection solutions spanning the power, bandwidth and lifetime demands of operations in contested electromagnetic environments.

WHEN

**Contract Number:** N68335-22-C-0673      **Ending on:** Apr 08, 2024

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Phase II base	Low	Demonstration Concept Prototype	4	3rd QTR FY24
Phase II option	Low	Environmental Testing of Transition Prototype	5	1st QTR FY25

HOW

**Projected Business Model:** Work directly with the Navy on integration of the devices into the application platform.

**Company Objectives:** Verus Research seeks to identify additional military and non-military customers for the range of CPDC solutions.

**Potential Commercial Applications:** Plasma switches are expected to be applicable for navigation, remote sensing and communication systems where tunable, high-power diplexing, antenna switching or isolation is required.