

Department of the Navy SBIR/STTR Transition Program

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NAVAIR 2019-1004

Topic # N141-015

Long range, High Capacity Backhaul (HCB) Ultra-wideband antennas for Ku and W Band network applications  
Pacific Antenna Systems

WHO

**SYSCOM:** NAVAIR

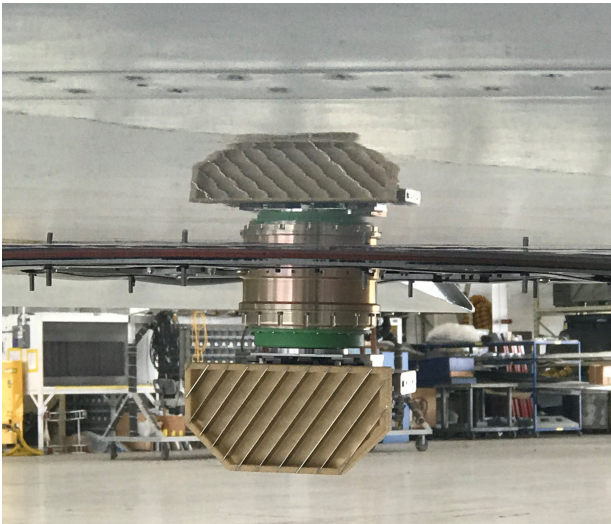
**Sponsoring Program:** Program Executive Office, Unmanned and Weapons (PEO U&W)

**Transition Target:** MQ-8 Fire Scout

**TPOC:**  
(619)553-8713

**Other transition opportunities:** Manned and unmanned aerial vehicles (UAVs) represent possible transitions. This technology also applies for commercial aviation and telecommunications.

**Notes:** Pacific Antenna Systems (PAS) W-Band Antenna, Ku Band Antenna not shown.



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WHAT

**Operational Need and Improvement:** The Navy needs a low profile antenna for Multi-Band (W, X, Ku, and Ka SATCOM), including potential option for Ku band Tactical Common Data Link (TCDL) capable of operating at bandwidths up to 14 Megabits per second (MBS), while maintaining the same effective radiated power as standard size antenna apertures.

**Specifications Required:** There is a need for X, Ku, and Ka modes to be reconfigurable during flight. The design solution must account for losses when going through the rotors

**Technology Developed:** Pacific Antenna Systems satisfies all the requirements under this SBIR project. Our Ku Band and W Band antenna provides high bandwidth wireless communications throughput up to 5G with a low probability of detection and interception.

**Warfighter Value:** Our cost effective antennas will offer up to 5G wireless communications in a denied environment with low probability of intercept (LPI) and low probability of detection (LPD).

WHEN

**Contract Number:** N68335-18-C-0585 **Ending on:** November 29, 2019

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Ku Band AD200 Antenna	Low	Completed and integrated into WB-57 aircraft with a cold start at over 40,000 ft ASL	7/8	June 2019
W Band AD400 Antenna	Low	Prototype antennas currently built with over 17 flt hours on an H-60 Blackhawk helicopter, currently working on building the next generation model	6	October 2019
Ku Band AD300 Antenna	Low	Design complete, prototypes assembled, many parts transitioned from AD-200, only difference is the size of the array, will be integrated on several pods for flight testing	5	October 2019

HOW

**Projected Business Model:** PAS is able to produce in house or and in a case by case basis is open to licensing this antenna technology to a larger prime contractor.

**Company Objectives:** Develop low cost, high band width antenna systems

**Potential Commercial Applications:** Commercial aviation and telecommunications

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