Topic: N141-015

Pacific Antenna Systems

Long range, High Capacity Backhaul (HCB) Ultra-wideband antennas for Ku and W Band network applications
Pacific Antenna Systems (PAS) has produced highly innovative low probability of intercept (LPI) / low probability of detection (LPD) advanced antenna systems in Ku Band and W Band that will provide up to 5G wireless capabilities. The antennas also provide multi-beam, directional network communications between surrogate nodes, connectivity between TDLs and IP-based networks to seamlessly move high density information. Increased network reliability is achieved through spectrum and waveform agility. Ours technologies have been flight tested in relevant environments on both fixed and rotary wing aircraft. Antennas are applicable to all ground, air, and surface platforms including manned and unmanned. Community of interest is Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR). PAS design history includes over 70 years of antenna systems design experience in Communications, Radar, High Power Microwave Antennas and Electronic Warfare.

Technology Category Alignment:

RF Components for sensing, transmission and communication
Fixed Wing Vehicles (includes UAS)
Networks and Communications
Distributed/Coordinated/Net-Enabled Systems
Survivability

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SYSCOM: NAVAIR
Contract: N68335-18-C-0585

Booth: 405
Room: FST at AIAA Aviation 2020
Corporate Brochure: https://navystp.com/vtm/open_file?type=brochure&id=N68335-18-C-0585

Department of the Navy SBIR/STTR Transition Program

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NAVAIR

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

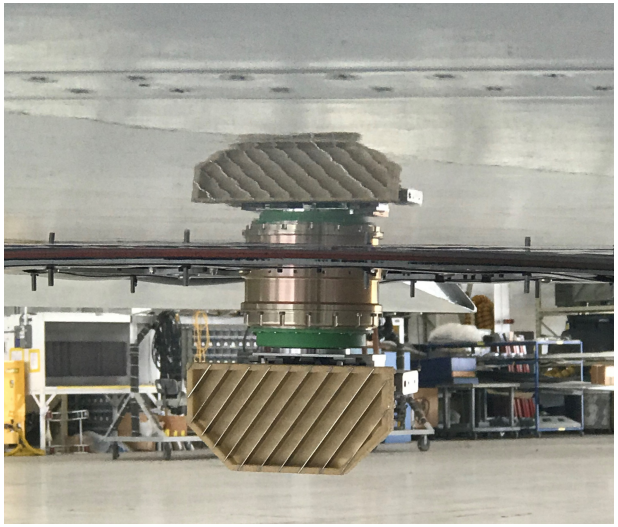
Sponsoring Program: Program Executive Office, Unmanned and Weapons (PEO U&W)

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.



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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