

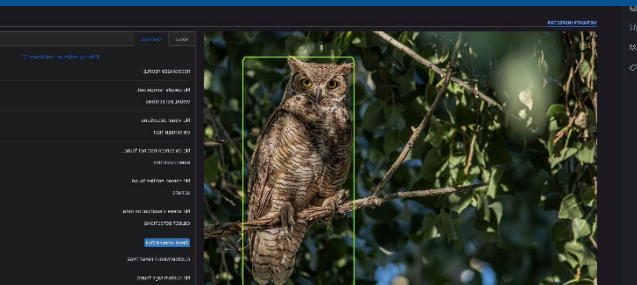


DEPARTMENT OF DEFENSE OSD TRANSITIONS SBIR/ STTR TECHNOLOGIES "OTST" PROGRAM SUCCESS STORY

Topic #: AF192-001

SBIR Investment: \$2.05 million

Phase III Funding: \$4 million



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THE CHALLENGE

The U.S. Air Force (USAF) issued a Small Business Innovation Research (SBIR) call in 2019 for innovative non-defense commercial solutions applied in unique ways to meet DoD stakeholders' needs in a short timeframe and at a low cost. Specifically, the Air Force required advanced artificial intelligence (AI) software capable of identifying and addressing wildlife's operational impacts on base operations throughout the U.S.

THE TECHNOLOGY

The Air Force Civil Engineering Center (AFCEC) sought computer vision & AI/machine learning (ML) solutions for biological species identification. Biological surveys are typically conducted using fixed-location, motion-sensing digital cameras to identify local species that could cause flight activity disruptions. Traditional camera surveys generate millions of photographs that require manual analysis with high resource and time costs, and inefficiencies. Vidrov Inc.'s system uses advanced computer vision (CV) and AI-powered monitoring systems to detect risks and extract species-specific information without manual processing.

THE TRANSITION

The Defense SBIR Program's funding supported Vidrov's efforts to adapt its pre-existing research to USAF needs. During Phase I, Vidrov used SBIR

funding to improve human-machine teaming using CV for imagery analysis. Under SBIR Phase II funding, Vidrov utilized CV and ML to identify all plant and animal species in photographs and catalog them based on USAF specific ontologies. Currently, Vidrov is under contract to refine and deploy the platform to meet installation specific ontological species identification and classification requirements.

THE BENEFIT TO THE U.S. AIR FORCE

The U.S. Air Force SBIR-funded efforts resulted in the planned deployment of wildlife monitoring systems to several USAF installations. The system will reduce potential flight and base operations disruptions from wildlife, which traditionally create significant safety concerns and monetary loss. It will also decrease personnel costs associated with monitoring wildlife safety issues and allow USAF installations to rapidly identify animals/objects using little to no personnel training or effort.

THE FUTURE

The asynchronous monitoring systems across large territories via multiple video sources systems could be used to trigger alerts on ecological events that require human decisions/responses. It could help DoD-wide installations develop hierarchies for plant and animal species at reduced survey costs.

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