



SUCCESS

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT

AIR FORCE AGREEMENT ENABLES Collaboration on Aircraft Anti-Icing Technology

CONTRACT

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COMPANY

NAME:

Battelle
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TECHNICAL

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Air Force
Life Cycle
Management
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REQUIREMENT

In order to achieve maximum operational performance, unmanned aircraft systems (UAS) must be able to complete missions in adverse weather conditions, such as light to moderate icing. Decreased flight performance and aborted missions occur when a UAS is unable to meet these challenges.

TECHNOLOGY TRANSFER

The Air Force Life Cycle Management Center (AFLCMC) and Battelle Memorial Institute established a Cooperative Research and Development Agreement (CRADA) to develop affordable, light-weight, easily-adaptable ice protection technology.



Leading edge of RQ-4 aircraft wing surface with and without using an active ice protection system. (photo courtesy of Battelle)

For the Air Force, this agreement supports research and development efforts for discovering an ice protection system that contributes to enhanced performance and less aborted missions. These types of agreements also allow the Air Force to explore technological developments without committing funding.

“From a traditional viewpoint, technological advancements achieved as a result of this collaboration would not have been made possible without structured and formalized research and development agreements,” said Maj. Andrew Soine, Chief, Intelligence, Surveillance and Reconnaissance Technology Development. “These agreements allow the Air Force to express a mutual interest in the future of the technology as both parties collaborate for a solution by utilizing resources other than taxpayer money.”

TECHNOLOGY INNOVATION

As of recently, the final stages for developing a cutting edge ice protection system that uses a carbon nanotube dispersant as a resistive heater for anti-ice/de-ice capability are being conducted by Battelle. Coupled with



The U.S. Air Force and Battelle CRADA facilitates the application of anti-ice protection technology to the High Altitude RQ-4 Global Hawk Unmanned Aircraft Systems. (U.S. Air Force photo)

an autonomous, intelligent, closed-loop controller, the system provides the lowest size, weight, and power electro-thermal solution available.

“Access to government furnished equipment allowed Battelle to validate multiple modeling and simulation tests and brought developments to the current integration stage on operational aircraft,” said Randy Johnson, Battelle’s program manager. “This agreement will also allow the Air Force to provide us with detailed technical information required for the actual integration.”

PAYOFF

In addition, this agreement will allow Battelle to continue to test and validate their research and development efforts on test wings and engine air inlets from operational systems. Battelle will also leverage their collaboration with the Air Force for acquiring additional external funding through various proposals and grants.

Linking technology with the mission and marketplace.

U.S. AIR FORCE TECHNOLOGY TRANSFER PROGRAM OFFICE

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