

Department of the Navy SBIR/STTR Transition Program

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NAVAIR Public Release 2022-18

Topic # N102-110

Cooling/Thermal Management System Development for Active Denial Technology (ADT) and High-Power Radio-Frequency vehicle Stopper (RF) Systems
International Mezzo Technologies, Inc

WHO

SYSCOM: NAVAIR

Sponsoring Program: PMA-275

Transition Target: V-22

TPOC:

(301) 342 - 0865

Other transition opportunities: Micro tube heat exchangers have the potential to be used many different military vehicles and aircrafts once tested and approved.

Notes: V-22 Osprey in high particulate environment



<https://www.navy.mil/Resources/Photo-Gallery/igphoto/2002742497/>

WHAT

Operational Need and Improvement: Improvement to existing heat exchanger needed to reduced fouling caused by sand and dust.

Specifications Required: Manufacture drop-in replacement micro tube heat exchanger that meets the performance requirements the current unit.
Provide solution that eliminates fouling issue while maintaining current unit weight and heat transfer.

Technology Developed: In-line micro tube heat exchangers have an unsurpassed combination of low air side pressure drop, high heat transfer, ruggedness, and resistance to air side fouling. These attributes create better performance for operation in sand and dust than the current V-22 oil cooler.

Warfighter Value: V-22 will be available for more flight time due to less maintenance.

WHEN

Contract Number: N68335-18-C-0189

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Design Oil Cooler	Low	All analysis meeting qualification test standards	4	January 2021
Manufacture Drop-in Replacement Oil Cooler	Low	Completion of manufacturing	5	July 2021
Qualification Testing	Med	Pass all qualification tests with Navy	6	TBD

HOW

Projected Business Model: Mezzo would manufacture the micro tube Nacelle Heat Exchanger (NHE) for it customers. Mezzo could also provide NHE's to a system integrator.

Company Objectives: Mezzo's objective is to have the micro tube Nacelle Heat Exchanger (NHE) replace the current heat exchanger on the V-22 with the listed objectives, while upholding all of the current requirements once tested and approved.

Potential Commercial Applications: Mezzo's products are being used in high performance automotive racing, military ground vehicles, and are beginning to penetrate the aerospace market.

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