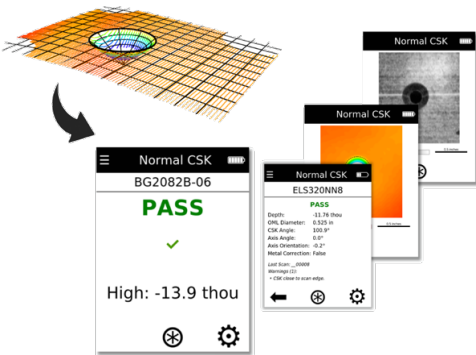


WHO

SYSCOM: NAVAIR
Sponsoring Program: Naval Air Systems Command
Transition Target: Non Contact Laser Metrology
TPOC: (301) 757-2048
Other Transition Opportunities: Commercial aircraft manufacturers

Notes: Creare's Fastener Measurement Tool is undergoing hardware and software upgrades to enable it to measure countersink geometry and detect defects in low observable aircraft outer mold lines



Creare LLC, 2022

WHAT

Operational Need and Improvement: Production and sustainment of high-performance military aircraft requires tools capable of providing highly accurate measurements on curved surfaces. Under this program, we have expanded the capability of Creare's award-winning Fastener Measurement Tool (FMT) to measure hole countersink and redesigned the next-generation hardware to be a complete, hand-held unit. In addition, we have developed the Defect Measurement Tool (DMT), which is based on the FMT, to measure, characterize, and locate defects on the outer mold line of the aircraft during sustainment activities, which are critical to maintain and Low-Observable (LO) profile of the F35. The FMT and DMT are critical to establishing the "digital thread" for the F35 and future military platforms.

Specifications Required: TBD

Technology Developed: The FMT measures thousands of fasteners in significantly less time than prior techniques. New capabilities will further reduce time and costs in the production and sustainment of military aircraft by enabling rapid and quantitative measurement of countersink outer mold line defects.

Warfighter Value: Increased aircraft availability by reducing time to conduct recurring OML inspections

- Replace manual tracing (minutes) with a single trigger pull (seconds)
- Accurately capture dimensions and orientation "the first time" with objective, operator agnostic results

Increase quality of information entered in LODEM and transferred to LOHAS

- Simplify process of digitizing defects and reporting orientation
- Encourage reporting, reduce "judgement" calls, and verify repairs meet original specifications
- Uniform input of performance-critical LO information

WHEN

Contract Number: N68335-20-C-0117 **Ending on:** Apr 18, 2023

Milestone	Risk Level	Measure of Success	Ending TRL	Date
Fastener Measurement Tool LRIP	Low	FMT produced and sustained	8	2nd QTR FY17
Fastener Measurement Tool commercialized	Low	FMT employed on F-35 production lines	9	2nd QTR FY19
FMT adopted for OML defects	Medium	Demonstration event	8	4th QTR FY23

HOW

Projected Business Model: The Fastener Measurement Tool technology has been licensed to Creare's sister firm (Edare Inc.) who is leading commercialization. Edare was formed in 2010 specifically to market, manufacture, and support technology developed by Creare. Edare maintains controlled storage and assembly space that is configured specifically for construction of the electro-optical assemblies in the FMT. Edare built and delivered the first eighteen FMT systems to the F-35 Prime in 2017. Since that time they have provided customer training, warranty support, and post warranty repairs. Edare is currently iterating the design of the FMT and preparing to deliver the second order of an additional 65 units to the F-35 Prime in 2022. Edare is also working with other potential customers in the aerospace sector who are interested in purchasing FMT systems. Some of these new customers have expressed specific interest in the use of the FMT to measure countersink geometry.

Company Objectives: Expand FMT's capability to improve and reduce sustainment costs. We feel that the market for FMT units used in the United States on the production of stealth aircraft is likely limited to approximately 125 units. However, this market will expand by 5x–10x when we include:

- F-35 depot/maintenance installations.
- F-35 international partners.
- Commercial aircraft manufacturers (Edare is currently in discussions with several manufacturers regarding the purchase of the FMT).

Potential Commercial Applications: Commercial aircraft manufacturers, surfaces or contours that require a high degree of quality control