Advanced Mobile Universal Electrical Tester (AMUET)

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Problem Statement

• Over half of all maintenance actions result from electrical systems anomalies
• Finding these anomalies is difficult due to increasing complexity and extremely manpower intensive
• ATE has been developed to address issues but can be costly and sometimes cumbersome to handle (on the flight line)
• Alternative hand held meters are more labor intensive and less effective in finding and tracking systemic issues
Solution to Problem

• Evaluate a new electrical testing technology able to quickly detect electrical wiring anomalies both at the Depot and O level, track results, and offer analytics for prognostics of the fleet over time

• Technology must be agile, lightweight, easy to program, and less costly than conventional ATE

• One man, 45 minute scan is the objective

• AMUET met the requirements, but must be proven to perform
Technical Approach

• Objective: Expand testing (beyond Proof of Concept completed in Phase I) of AMUET on multiple cross-Services aircraft (C-5, C-130, F18) electrical subsystems; validate benefits via a BCA

• Project Funding: $350K + $85K + $90K + $170K = $695K

• Funding Source: FCT (Foreign Comparative Testing) - OSD

• Air Force Cybersecurity/IATT (Interim Authority To Test) one year extension requested

• Air Force Cybersecurity/RMF Authorization to Operate (ATO) drafted
Project Status

• Working with AFSOC on identifying aircraft and subsystems at O-Level (Hurlburt AFB) for AMUET testing – extended test plan (6-12 months). ATO required – in progress

• CTMA Contract Mod for NAVAIR F-18 aircraft electrical subsystem(s) for AMUET testing in progress

• Navy Cybersecurity/IATT approval requirement identified

• AMUET to comply with JIT Mil-Perf Standard

• Testing expected to start September-October timeframe
AMUET the Benchmark

• Small, portable form factor
• Speed & ease of visual training, setup, and testing
• Wide range of tester and wiring troubleshooting capabilities including physical location(s) of opens, shorts and intermittent faults
• Fewer technicians required than needed for USAF Standard Tester
• Short lead time, cost and perhaps less complex execution for new subsystem’s TPS (Test Program Set)
AMUET Logistics Footprint

1. C-130 interface cables (Fuel, ICS, A-skid)
2. 5 Testers
3. Laptop
All-in-One Tester for CANADIAN Air Force

**MODERNIZATION**
- Production tool
- Accelerates installation and QC
- Manhours savings of 25%-35%

**O-LEVEL MAINTENANCE**
- Advanced Mobile Troubleshooting
- Fix it right the first time
- Improves readiness by 40%

**D-LEVEL MAINTENANCE**
- Preventive Maintenance Programs
- Avoids random electrical failure
- Improves readiness by 25%
AMUET in Commercial Aviation

Flaps Wing tip Brake

Avionic bay

Test time: 20 minutes

AMUET on the flightline
AMUET in Naval Application
AMUET is Ready for Prime Time

• Achieving one man, 45 minute test per electrical subsystem offers great potential for maintainers -- reduces cycle time, increases asset (aircraft, ship, vehicle) availability

• Cost and time savings to create TPSs (Test Program Sets), build cabling and connectors expands ATE capabilities to do more with less

• Technicians appreciate size, weight and agility of AMUET

• Capability to track and analyze performance (by unit/fleet)