

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)

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

AMUET cases closed



AMUET cases open



All-in-One Tester for CANADIAN Air Force

MODERNIZATION

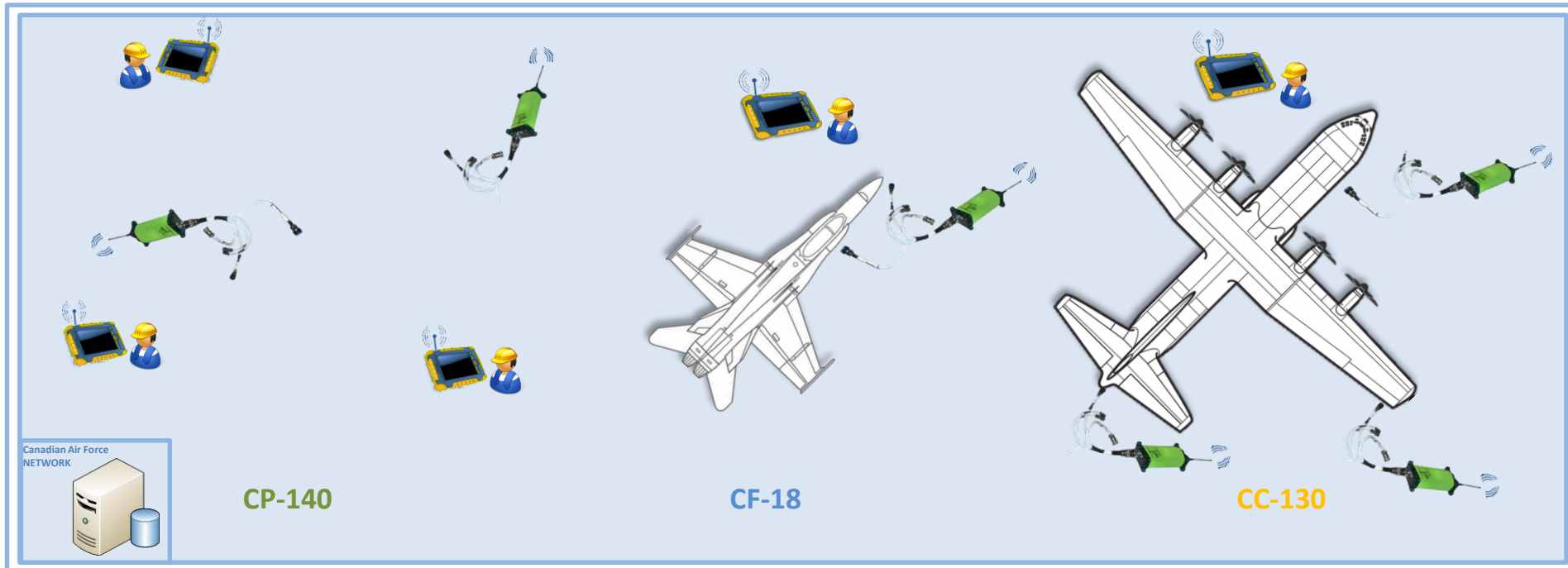
- Production tool
- ✓ Accelerates installation and QC
- ✓ Manhours savings of 25%-35%

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%



Wireless Tablet



Wireless Test box unit (TBU)



Interface cable

EWIS- Electrical Wiring Interconnect System

AMUET in Commercial Aviation

Flaps Wing tip Brake



AMUET on the flightline

Avionic bay



Test time: 20 minutes

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)