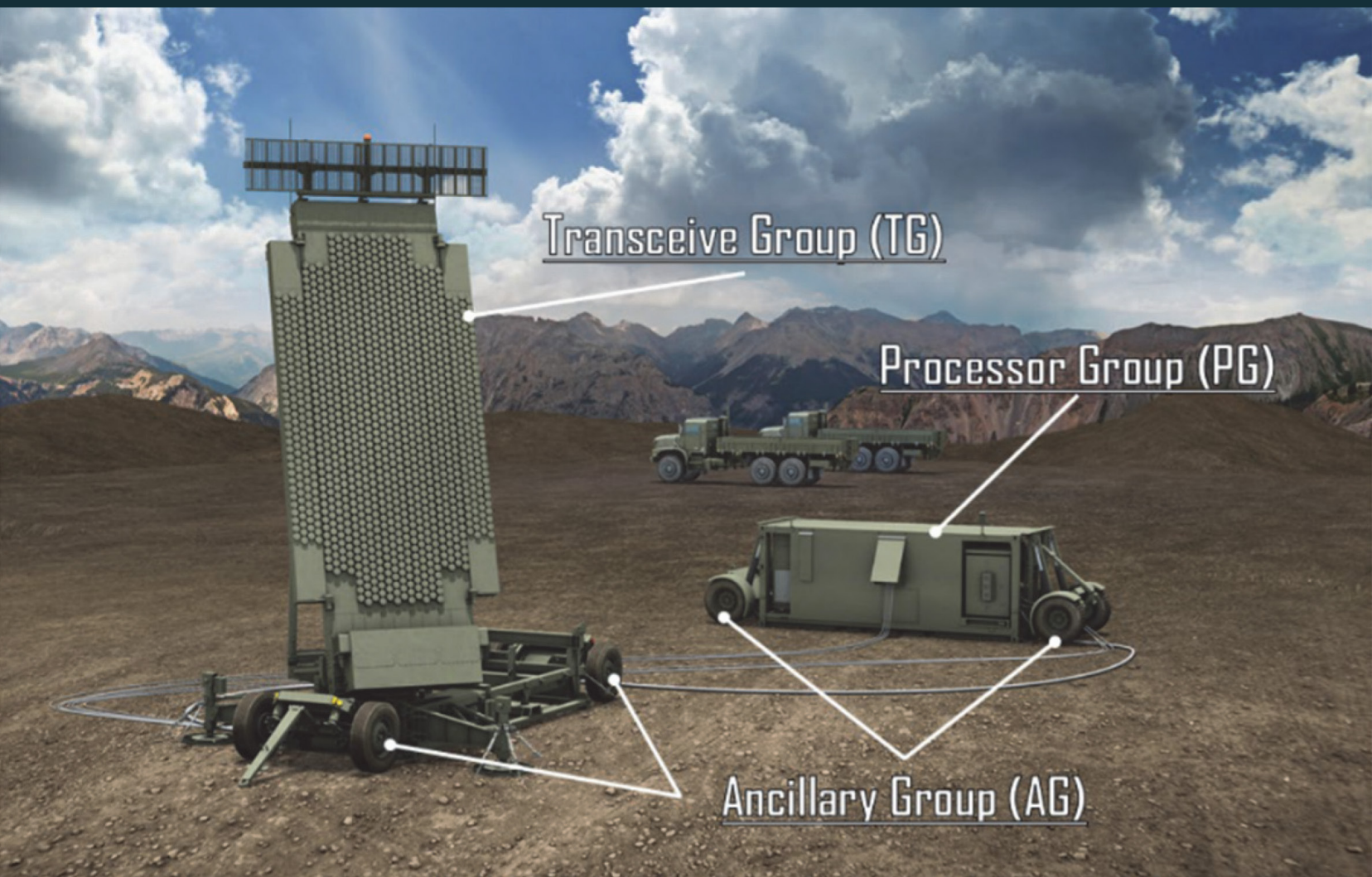


Three-Dimensional Expeditionary Long-Range Radar (3DELRR)



In February 2022, the Air Force selected Lockheed Martin Corporation as the Three-Dimensional Expeditionary Long-Range Radar (3DELRR) TPY-4 production contractor to replace the aging AN/TPS-75 passive electronically scanned array, three-dimensional radar. The planned start of 3DELRR TPY-4 testing in 4QFY23 has moved to 2QFY24 due to prime contractor production delays. The Air Force plans to start government-led developmental testing in 2QFY24 and dedicated IOT&E in 3QFY25 to support an initial fielding decision in FY25. The Air Force plans to begin mobility testing on Initial Production Radar #1 in 4QFY24 and government developmental testing on IP2 in 1QFY25.

SYSTEM DESCRIPTION

The 3DELRR TPY-4 is designed to serve as the organic radar for the U.S. Air Force Control and Reporting Center (CRC) Weapon System (WS), providing the capability to perform long-range detection of both aircraft and theater ballistic missiles. The 3DELRR employs a single-face, rotating, active electronically scanned array (AESA) with a highly distributed and scalable digital beam-forming architecture.

MISSION

The U.S. Air Force employs the CRC WS to conduct battle management, command and control, air surveillance, combat identification, airspace management, and tactical data link management to enable fluid, continuous, offensive and defense operations. The 3DELRR will support key CRC functions, including:

- Long-range, wide-area surveillance
- Detecting and tracking air-breathing threats and theater ballistic missiles
- Threat evaluation for timely defensive and offensive action

- Positive control of military aircraft

PROGRAM

The 3DELRR program is currently operating as a rapid fielding Middle Tier of Acquisition program, which the Air Force plans to transition to a major capability acquisition program no earlier than 2QFY24.

» MAJOR CONTRACTOR

- Lockheed Martin Corporation – Syracuse, New York

TEST ADEQUACY

There were no formal government test events in FY23. In 1QFY23, the government observed the contractor's TYQ-23A interface test event. The government plans to observe the validation/verification of requirements and the production acceptance test on Lockheed Martin's performance representative unit in 1QFY24. The start of 3DELRR government-led testing in 4QFY23 moved to 2QFY24 due to prime contractor production delays. The Air Force plans to conduct an operational assessment on a performance representative TPY-4 radar at Eglin AFB in 2QFY24. The 3DELRR

T&E Strategy and the 2QFY24 operational assessment test plan are currently in coordination for DOT&E-approval.

The Air Force plans to utilize integrated testing at every opportunity and resource the test for appropriate threat representative targets as part of the planned developmental testing that starts in 2QFY24. The Air Force plans to start dedicated IOT&E in 3QFY25.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

DOT&E will provide an assessment of the system's potential to be operationally effective, suitable, and survivable in the operational assessment report anticipated in 3QFY24.

RECOMMENDATION

The Air Force should:

1. Plan and resource for appropriate threat representative targets, as recommended in FY22 Annual Report.