

F-16 Radar Modernization Program

The APG-83 F-16 Radar Modernization Program (RMP) full-rate production decision, scheduled in March 2023, is currently at risk due to the Air Force's insufficient coordination and funding for the various hardware upgrades required to modernize the aircraft, as well as a failure to plan, schedule, and resource an adequate APG-83 IOT&E through the F-16 Integrated Test and Evaluation structure. In March 2021, the Air Force approved the F-16 RMP to enter Milestone C.



System Description

The APG-83 Scalable Agile Beam Radar (SABR) is a multifunction Active Electronically Scanned Array (AESA) radar intended to replace the legacy APG-68 radar. It provides F-16 pilots with air-to-air and air-to-ground situational awareness, high-resolution synthetic aperture radar mapping, fire control, and datalink support to air-to-air missiles.

Program

The APG-83 F-16 RMP is an Acquisition Category II program. The program does not have an approved Test and Evaluation Master Plan (TEMP). The Air National Guard acquired and is fielding 72 APG-83 radars with initial capability to meet a U.S. Northern Command Joint Emergent Operational Need (JEON) for homeland defense.

This initial JEON fielding was not on DOT&E oversight and included Phase 1 and Phase 2 developmental and operational testing of partial APG-83 capabilities and reliability enhancements. The JEON program was originally planned for completion in July 2021, but was delayed due to production issues and may continue into 2022.

The Air Force approved the F-16 RMP to enter at Phase 3 and Milestone C in March 2021, based on the JEON Phase 1 and Phase 2. The F-16 RMP, which is on DOT&E oversight, intends to deliver full APG-83 capability and begin purchasing up to 450 radars for active duty Air Force F-16s. The Program Office is currently planning on making a F-16 RMP full-rate production decision in March 2023.

Major Contractor

Northrop Grumman Mission Systems – Linthicum, Maryland.

Test Adequacy

The test adequacy of the F-16 RMP cannot yet be assessed since the Air Force has not submitted a TEMP, Test Strategy, or Test Plan for approval. To date, there have been working-level discussions between the Program Office, the Operational Test Agency, and DOT&E to develop an adequate test strategy and plan.

The Air Force has not adequately resourced the program nor submitted a TEMP for approval that includes an IOT&E and FOT&E plan with resources to support operational testing. There is very high risk to the F-16 RMP full-rate production timeline based on this failure to develop and resource an adequate IOT&E plan.

Performance

Effectiveness

The operational effectiveness assessment of the F-16 RMP is pending approval of an adequate TEMP and Test Plan, completion of IOT&E, and subsequent analysis of operational testing results.

Suitability

The operational suitability assessment of the F-16 RMP is pending approval of an adequate TEMP and Test Plan, completion of IOT&E, and analysis of operational testing results.

Survivability

The survivability assessment of the F-16 RMP in a cyber-contested environment is pending approval of an adequate TEMP and Test Plan, completion of IOT&E, and analysis of operational testing results.

Recommendation

1. The Air Force should develop and deliver an adequate TEMP and Test Plan for the F-16 RMP IOT&E to DOT&E for review and approval as soon as possible to meet the full-rate production decision scheduled for March 2023.