March 2021

F-35 JOINT STRIKE FIGHTER

DOD Needs to Update Modernization Schedule and Improve Data on Software Development

What GAO Found

The Department of Defense (DOD) delayed the completion of key testing until problems with the F-35 aircraft simulator are resolved, which GAO also reported last year, and will again delay its full-rate production decision. In August 2020, the program office determined the aircraft simulator—to be used to replicate complex test scenarios that could not be accomplished in real-world environment testing—did not fully represent F-35 capabilities and could not be used for further testing until fixed. Since then, program officials have been developing a new plan to ensure the simulator works as intended. Until they finalize the plan and fix the simulator, the next production milestone date—which would formally authorize DOD’s transition from development to full production—remains undetermined (see figure).

DOD is now in its third year of its modernization effort, known as Block 4, to upgrade the hardware and software of the aircraft. While DOD added another year to the schedule, GAO found the remaining development time frame is not achievable. The program routinely underestimated the amount of work needed to develop Block 4 capabilities, which has resulted in delays, and has not reflected historical performance into its remaining work schedule. Unless the F-35 program accounts for historical performance in the schedule estimates, the Block 4 schedule will continue to exceed estimated time frames and stakeholders will lack reliable information on when capabilities will be delivered.

DOD is now in its third year of its modernization effort, known as Block 4, to upgrade the hardware and software of the aircraft. While DOD added another year to the schedule, GAO found the remaining development time frame is not achievable. The program routinely underestimated the amount of work needed to develop Block 4 capabilities, which has resulted in delays, and has not reflected historical performance into its remaining work schedule. Unless the F-35 program accounts for historical performance in the schedule estimates, the Block 4 schedule will continue to exceed estimated time frames and stakeholders will lack reliable information on when capabilities will be delivered.

What GAO Recommends

GAO is making three recommendations to DOD, including that it update its modernization schedule to reflect achievable time frames, identify and implement tools to enable automated data collection on software development performance, and set software quality performance targets. DOD agreed with GAO’s recommendations.