



Pratt & Whitney
An RTX Business

F135
MILITARY ENGINES

ENGINE CORE UPGRADE



Photo by: USAF Ssgt Thomas Barley
©2024 RTX. This document has been publicly released and is not subject to the EAR or ITAR.
The appearance of U.S. Department of Defense (DoD) visual information does not imply or constitute DoD endorsement.

ENGINE CORE UPGRADE (ECU)



The World's Most Advanced Fighter Engine Proven Propulsion Designed to Enable Block 4 Capabilities and Beyond

The F135 Engine Core Upgrade (ECU) delivers the durability and performance needed to enable Block 4 capabilities and beyond. Easily retrofittable in all F-35 variants, ECU delivers substantial life cycle cost saving while enabling the increased power and thermal management capacity needed to support next generation weapons systems and sensors. Utilizing proven technologies developed for advanced programs, ECU ensures the F-35 Lightning II remains the most advanced fighter for decades to come.



PROVEN TECHNOLOGY

Design based upon demonstrated and proven advanced technologies



ENABLES BLOCK 4 AND BEYOND

Increased bleed air, horsepower and heat rejection enables Block 4 and beyond power and thermal needs



VARIANT COMMON SOLUTION

Maintains the current F135 architecture while focusing on engineering changes to the power module and gearbox to accelerate modernization and minimize risk



RESTORES FULL LIFE

Upgrades address "over bleeding" of F135 and higher mission demands to avoid looming lifecycle cost growth



MINIMIZES COST AND ACCELERATES MODERNIZATION
with 60-70% commonality with the F135



DESIGNING TO MAXIMIZE AIR VEHICLE POWER AND THERMAL CAPACITY

ECU will be fully compatible with any PTMS solution delivering up to 80kW. When combined with a new PTMS, it will also provide additional fuel burn and thrust benefits

"DROP-IN"

Retrofits allow for upgrades to already fielded and new production F-35s

Providing warfighters the technological edge to fight and win