PTMS MYTH BUSTING

MYTH: Honeywell's Power and Thermal Management System (PTMS) is degrading F135 engine life.

FACT: The PTMS meets all requirements set forth by Lockheed Martin, including for engine bleed air usage. Pratt & Whitney designed the F135 to meet a different bleed air requirement set forth by the Government. Neither Honeywell nor Pratt & Whitney is to blame for this systems engineering disconnect, which was discovered too late to fix during the System Design and Development (SDD) program.

MYTH: Honeywell's PTMS can't keep up with F-35 upgrades.

FACT: Honeywell designed the PTMS to grow with the mission. It was originally tested and gualified to supply 30kW of cooling capacity and has been incrementally upgraded over time. A low-risk software upgrade can further boost cooling capacity to 40kW by 2029 to enable post-Block 4 upgrades and reduce bleed air usage up to 41%, thereby extending F135 engine life independent of the planned Engine Core Upgrade (ECU). Using F-35 digital twin models, Honeywell successfully demonstrated a followon PTMS upgrade that can achieve the 62-80kW of required air vehicle cooling while reusing 95% of PTMS hardware and 80% of PTMS software. This reuse significantly reduces development and retrofit costs, risks, and mission readiness impacts. Honeywell's PTMS upgrade fits the same envelope and interfaces-zero chaos, maximum readiness.

MYTH: Other power and cooling systems are comparable to Honeywell's PTMS.

FACT: Honeywell's PTMS stands alone with over 1 million flight hours across 1,185+ F-35s—the only fielded system integrating auxiliary power, emergency power, environmental control, and thermal management into one package. This integration cut 1,000 lbs and 10 inches from the jet. Upgrades to reach 62-80kW are already at TRL 7+, ready for Block 4 and beyond. Clean sheet designs are less mature and will cost at least 100% more to develop and field than simply upgrading the PTMS. While others test prototypes that would take many years to achieve first flight, Honeywell's PTMS delivers real-world results today.

MYTH: Honeywell's PTMS can be replaced with a drop-in solution.

FACT: Honeywell rigorously developed and tested all 14 PTMS functions-many of which are safety-critical-over 2,500 hours in our purpose-built integrated test facility. These functions include cooling and pressurizing the cockpit, supplying emergency power to primary flight controls, and supplying ram air cooling to enable a safe landing during an in-flight emergency. A clean sheet design would unnecessarily require redevelopment, reintegration, retesting, and requalification of all 14 PTMS functions, greatly increasing development costs, schedule, and risks. Upgrading PTMS cooling capacity only requires modifying one function; the rest is unchanged.



Why rip out and replace when you can upgrade and save? Upgrading Honeywell's PTMS keeps jets flying, not grounded for costly and invasive retrofits.

MYTH: Replacing Honeywell's PTMS will save billions of taxpayer dollars.

FACT: Pratt & Whitney estimates the F135 ECU will save \$38 billion on lifecycle engine repairs. Claiming a clean sheet PTMS replacement designed to use less bleed air will save billions is double counting. In reality, the additional F-35 program cost to design, integrate, test, and qualify a clean sheet design to perform all 14 PTMS functions, retrofit in-service units, as well as build and maintain a redundant logistics and sustainment footprint exceeds \$7B. Selection of a clean sheet design would essentially double the operating and maintenance costs of existing spares, tooling, support equipment, depot and test facilities, technical publications, supply chains, training curricula, sustaining engineers, configuration managers, and field service teams—and would take decades to fully support aircraft readiness. Two systems, twice the burden and risk with no added benefit—a costly gamble. Upgrading Honeywell's proven PTMS is the smart choice.







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