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The U.S. Army's Indirect Fire Protection Capability (IFPC) System

Background

Protecting high-value military sites against enemy cruise missile (CM), unmanned aerial system (UAS), and rocket, artillery, and mortar (RAM) attacks has long been an important consideration in protecting military forces. The 2020 Nagorno-Karabakh Conflict between Armenia and Azerbaijan and ongoing conflicts in Ukraine and the Middle East have heightened interest in the efficacy of these force protection systems and highlighted the requirement to protect sites and other assets from such threats.

According to the U.S. Army, the Indirect Fire Protection Capability (IFPC) System “is a mobile, ground-based weapon system designed to defeat cruise missiles (CM), unmanned aircraft systems (UAS), and rocket, artillery, and mortars (RAM).” IFPC is to consist of a launcher and interceptors. IFPC is to use the Army’s Integrated Air and Missile Defense Battle Command System (IBCS) for mission command and integrate the AN/MPQ-64 Sentinel Radar as its sensor. IFPC is intended to “protect critical fixed- or semi-fixed assets,” and “bridge the gap between short-range air defense (SHORAD) systems, the Patriot air and missile defense system, and the Terminal High Altitude Area Defense (THAAD) system.”

Origins of the IFPC Program

The Army initiated the IFPC program, known as IFPC Increment 1, in 2004. In 2005, the Army deployed the Land-based Phalanx Weapon System (LPWS) along with associated radars to Iraq to intercept hostile rockets, artillery, and mortars (RAM). The Army treated this as an interim solution and continued developmental efforts. Concerned with the pace and direction of the Army’s counter RAM (C-RAM) development, some in Congress expressed an interest in acquiring Israel’s Iron Dome C-RAM system as an interim solution. In both the FY2019 National Defense Authorization Act (NDAA) (P.L. 115-232) and the FY2019 Department of Defense Appropriations Act (P.L. 115-245), Congress directed the Army to deploy four batteries—two in 2020 and two in 2023—of a medium-range air defense system to counter cruise missiles and other threats. In response to this mandate, the Army selected Iron Dome as providing “the best value to the Army based on its schedule, cost per kill, magazine depth, and capability against specified threats.”

Because of difficulties integrating the first two Iron Dome batteries into existing and planned Army air and missile defense command and control architecture, the FY2021 NDAA (P.L. 116-283) waived the requirement for the final two Iron Dome batteries. The decision not to adopt Iron Dome reportedly served as the basis for the Army initiating the IFPC Increment 2 program.

IFPC Increment 2

Figure 1. IFPC Increment 2 Prototype



Source: IFPC Increment 2 Prototype: https://asc.army.mil/web/portfolio-item/ms-ifpc_inc_2-i/.

On September 24, 2021, the Army announced “the award of a three-year prototype Other Transaction Authority Agreement (OTA) to Dynetics (a subsidiary of Leidos) for the development and delivery of 16 launcher prototypes, 60 interceptors, and associated all-up-round magazines for the Indirect Fire Protection Capability Increment 2.” The OTA was valued at approximately \$237.38 million over two and a half years.

Plans called for prototype development in Huntsville, AL, and Tucson, AZ, with deliveries to support testing beginning in the fourth quarter of FY2022. The first IFPC Increment 2 combat-capable battery was to be available to the Army in the fourth quarter of FY2023. The Army planned to make a Milestone C Decision (decision to transition to procurement) in the second quarter of FY2024 and field the first IFPC Increment 2 battalion by FY2026.

IFPC Variants

The Army is presently developing three IFPC variants, the Increment 2 Interceptor variant, the High Energy Laser (HEL) variant, and the High-Power Microwave (HPM) variant. Each variant is in a different stage of development, and variants are intended to operate in a complementary manner.

IFPC Increment 2 Interceptor Variant

The interceptor variant is to utilize an open architecture design to enable future missile integration. Reportedly, Increment 2 can employ the AIM-9X Sidewinder missile and the AGM-114L Longbow variant of the Hellfire missile. The Army is also testing the Israeli Tamir missile used by Israel’s Iron Dome system.

November 2023 IFPC Program Delay

Reportedly, the IFPC Increment 2 program is facing a delay of at least eight months and possibly a year attributed to “aggressive activity to support fielding in Guam by 2027.” Based on new plans, Initial Operational Test and Evaluation (OT&E), originally planned for FY2025, will now begin in FY2026. Despite the delay, the Army reportedly intends to meet its 2027 Guam fielding deadline.

IFPC High Energy Laser (HEL)

Figure 2. Notional IFPC High Energy Laser (HEL)



Source: Notional IFPC High Energy Laser (HEL): https://www.army.mil/article/233346/scrolling_up_army_advances_300kw_class_laser_prototype.

IFPC HEL is being designed by Dynetics to protect critical fixed- or semi-fixed assets against CMs, UASs, and RAMs using a laser as opposed to interceptor missiles. The Army planned to mount four operational 300 kilowatt (kW)-class IFPC HEL prototypes onto tactical vehicles by FY2024. If testing proved successful, the Army would transition the IFPC HEL to a Program of Record in FY2025.

IFPC High Power Microwave (HPM)

Figure 3. IFPC High Power Microwave (HPM)



Source: <https://breakingdefense.com/2023/01/us-army-selects-epirus-leonidas-for-high-power-microwave-initiative/>.

According to the Army, the IFPC HPM is intended to provide short-range protection for fixed and semi-fixed sites against small UAS (weighing about 55 pounds or less) swarm attacks. In January 2023, the Army reportedly awarded a \$66.1 million contract to Epirus to deliver four high-powered microwave prototypes to the Army in FY2024 for testing.

FY2025 IFPC Budgetary Information

Table 1. FY2025 IFPC Budget Request

| Funding Category | Total Request (\$M) |
|----------------------------------|---------------------|
| Procurement - IFPC Increment 2-1 | \$657.581 |
| Quantity - 44 | |
| RDT&E - IFPC HEL | \$31.643 |
| RDT&E - IFPC HPM | \$4.031 |

Sources: **Procurement:** Department of Defense FY2025 Budget Estimates, March 2024, Army Justification Book Volume 1 of 1, Missile Procurement, p. 1-49. **RDT&E:** Department of Defense Fiscal Year (FY) 2025 Budget Estimates, March 2024, Research, Development, Test & Evaluation, RDT&E – Volume 2a of 2, Budget Activity 4a, p. 318.

Notes: RDT&E = Research, Development, Test & Evaluation; \$M = U.S. dollars in millions.

IFPC HEL Funding Reduction

FY2024 Army budget documents and reports note the Army plans to cut approximately \$4.8 billion from planned IFPC HEL future spending, which the Army attributed to “changing priorities.” The FY2025 IFPC HEL budget request is a \$327 million reduction compared with the Army’s forecast in the FY2024 budget. Future funding is eliminated starting in FY2026, suggesting almost \$4.5 billion is to be redirected to higher-priority needs. While the Army says it remains committed to HELs, it is reportedly adopting a “buy-try-decide strategy” whereby the Army “purchases a small number of prototypes and conducts thorough testing before proceeding with additional investments.”

Considerations for Congress

Oversight questions Congress could consider include the following:

- To what extent would IFPC units be expected to protect the other services’ fixed or semi-fixed sites such as Air Force air bases, Navy port facilities, or Marine Corps sites?
- According to a February 2024 white paper, *Army Force Structure Transformation*, the Army plans to invest in four additional IFPC battalions. What is the Army’s timeline for establishing the four new battalions and where will the battalions be stationed?
- While the Army has said that the significant reduction in current and future IFPC HEL funding was attributed to “changing priorities,” did IFPC HEL developmental challenges play a factor in the Army’s decision? If so, what are these challenges and does the Army have future plans to address them?
- Does the Army plan to establish IFPC units in the Army National Guard? If so, what is the fielding timeline and basing plan for the units?

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