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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 between Israel and Palestinian militants in the Gaza Strip 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 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 U.S. 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 original IFPC program, known as IFPC Increment 1, in 2004 based on a Multi-National Force-Iraq Operational Needs Statement. 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 U.S. 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 plans 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.

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/scaling_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 plans to mount four operational 300 kilowatt (kW)-class IFPC HEL prototypes onto tactical vehicles by FY2024. If testing proves successful, the Army then plans to 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.

FY2024 IFPC Budgetary Information

Table 1. FY2024 IFPC Budget Request

Funding Category	Total Request (\$M)
Procurement - IFPC Increment 2	\$313.189
RDT&E - IFPC HEL	\$85.852
RDT&E - IFPC HPM	\$11.166

Sources: **Procurement:** Department of Defense FY2024 Budget Estimates, March 2023, Army Justification Book Volume 1 of 1, Missile Procurement, p. 1-45. **RDT&E:** Department of Defense Fiscal Year (FY) 2024 Budget Estimates, March 2023, Research, Development, Test & Evaluation, RDT&E – Volume 2a, Budget Activity 4, p. 338.

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

Considerations for Congress

Oversight questions Congress could consider include the following:

- To what extent would IFPC units be expected to protect other military services' fixed or semi-fixed sites such as Air Force air bases, Navy port facilities, or Marine Corps sites?
- A May 2023 Government Accountability Office (GAO) report on Missile Defense notes (p. 40) that IFPC launchers are to be used for the defense of Guam. When would IFPC be deployed to Guam? Would it be a rotational deployment or would an IFPC unit be permanently stationed on Guam?
- How many IFPC units does the Army intend to field? According to a February 22, 2022, article from *Inside Defense*, "Army Plan Could Double M-SHORAD Buy," the Army reportedly plans for an IFPC force structure of nine battalions, not including IFPC batteries within each of the planned nine Maneuver-Short Range Air Defense (M-SHORAD) battalions assigned to Army divisions. Does this force structure reflect IFPC support to other services as well as support to Guam air and missile defense efforts?
- How many soldiers would be needed for the establishment of proposed IFPC units? Would the Army ask for additional end strength, convert existing units, or deactivate existing units to obtain soldiers required for new IFPC units?
- Would IFPC units be established in the Army National Guard?
- What is the Army's timeline for fielding IFPC units, and where would they be stationed?

Andrew Feickert, Specialist in Military Ground Forces

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