Congressional Research Service
Informing the legislative debate since 1914

IN FOCUS

Updated November 28, 2023

The U.S. Army's Strategic Mid-Range Fires (SMRF) System (Formerly Mid-Range Capabilities [MRC] System)

What Is the Army's Strategic Mid-Range Fires (SMRF) System?

Reported improvements to Russian and Chinese artillery systems present a challenge to the U.S. Army. These improved, longer-ranged artillery systems, new employment techniques employing unmanned aerial vehicles (UAV) for target acquisition, and the proliferation of special munitions (such as precision, thermobaric, loitering, and top-attack munitions) have renewed concerns about the potential impact of Russian and Chinese artillery on U.S. combat operations and ground combat systems. In response, the U.S. Army is seeking to improve its ability to deliver what it refers to as long-range precision fires (LRPF) by upgrading current artillery and missile systems, developing new longer-ranged cannons and hypersonic weapons, and modifying existing air- and sea-launched missiles for ground launch.

Originally known as the Mid-Range Capabilities (MRC) System, SMRF is part of the Army's LRPF modernization portfolio. It is intended to hit targets at ranges between the Army's Precision Strike Missile (PrSM) (about 300 miles maximum range) and the developmental Long-Range Hypersonic Weapon (LRHW) system (about 1,725 miles maximum range). The SMRF Weapon System leverages existing Raytheon-produced SM-6 missiles and Raytheon-produced Tomahawk cruise missiles and modifies them for ground launch. The SMRF system is also known as the "Typhon" missile system (**Figure 1**).

Figure 1. Typhon Launchers and Battery Operations Center

Source: *The Drive*: https://www.thedrive.com/the-war-zone/army-fires-tomahawk-missile-from-its-new-typhon-battery-in-major-milestone, accessed July 6, 2023.

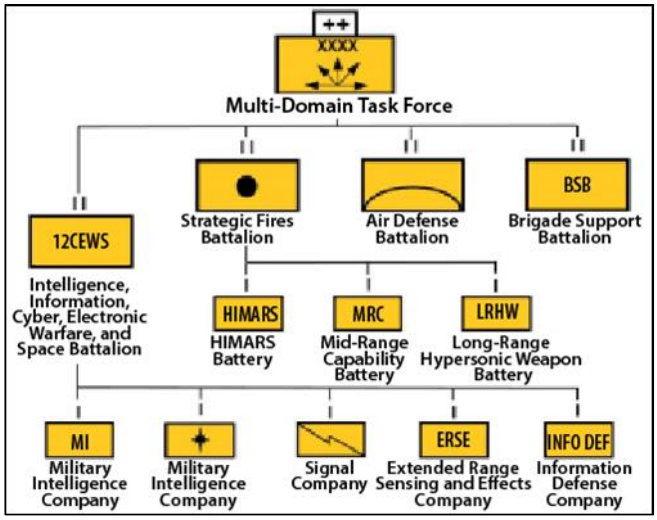
SMRF Weapon System Components

According to the Army, the prototype SMRF battery is planned to consist of four launchers and a battery operations center (BOC) (**Figure 1**). Reportedly, a decision has not been made on how many missiles each battery will have. SMRF batteries are to be equipped with a number of prime movers, trailers, generators, and support vehicles. Numbers of soldiers assigned to each battery is presently unknown. The Army plans for the first prototype SMRF battery to be fielded no later than the fourth quarter of FY2023 and three additional batteries are to be fielded on an annual basis thereafter. It is not clear at this time if the Army will field more than four SMRF batteries or if any of the batteries will be Army National Guard units.

MRC Unit Organization

The Army plans to field a SMRF battery in the Strategic Fires Battalion of the Army's regionally aligned Multi-Domain Task Force (MDTF) (**Figure 2**).

Figure 2. Army Multi-Domain Task Force (MDTF) Organization



Source: Chief of Staff Paper #1 Army Multi-Domain Transformation Ready to Win in Competition and Conflict, March 16, 2021, p. 12.

Note: MRC Battery depicted above is now known as the SMRF Battery.

The Army describes MDTFs as "theater-level maneuver elements designed to synchronize precision effects and precision fires in all domains against adversary anti-access/area denial (A2/AD) networks in all domains, enabling joint forces to execute their operational plan (OPLAN)-directed roles."

What Is Anti-Access/Area Denial (A2/AD)?
Anti-Access (A2) is an action, activity, or capability, usually long-range, designed to prevent an advancing enemy force from entering an operational area.
Area Denial (AD) is an action, activity, or capability, usually short-range, designed to limit an enemy force's freedom of action within an operational area.
Source: Department of Defense Dictionary of Military and Associated Terms, November 2021.

Program Status

Reportedly, Lockheed Martin delivered the first of four prototype Typhon systems to the Army on December 2, 2022. The Army plans to field its first prototype SMRF battery no later than the fourth quarter FY2023.

SMRF Test Launches and Full Operational Capability

On June 27, 2023, the Army reported:

> The Army's Rapid Capabilities and Critical Technologies Office's Mid-Range Capability Project Office, in conjunction with soldiers from 1st Multi-Domain Task Force, and the U.S. Navy Program Executive Office Unmanned Aviation and Strike Weapons, successfully demonstrated the launch of a Tomahawk missile from the Army's prototype Mid-Range Capability system. Soldiers assigned to 1st Multi-Domain Task Force conducted this live-fire event in which successful communications from the Battery Operations Center to the Launcher resulted in the launch of a Tomahawk missile. This test follows the successful launch of an SM-6 missile from the Mid-Range Capability system earlier this year, confirming the full operational capability of the system.

Plans to Deploy SMRF in 2024

Reportedly, in November 2023, U.S. Army Pacific Commander General Charles Flynn noted:

> We have tested [Typhon] and we have a battery or two of them today. In 2024, we intend to deploy that system in the region. I'm not going to say where and when, but I will just say that we will deploy them in the region.

FY2024 SMRF Budgetary Information

Table 1. FY2024 SMRF Budget Request

Funding Category	Total Request ($ Million)	Total Request (Qty.)
RDT&E	$31.559	—
Procurement	$169.519	58

Sources: RDT&E: Department of Defense Fiscal Year 2024 Budget Estimates, Army Justification Book 2b of 2, Research, Development, Test & Evaluation, Army, RDT&E–Volume II, Budget Activity 4B, March 2023, p. 235. **Procurement**: Department of Defense Fiscal Year (FY) 2024 Budget Estimates, March 2023, Army Justification Book Volume 1 of 1 Missile Procurement, p. 83.

Notes: RDT&E = Research, Development, Test & Evaluation; **Qty.** = FY2024 procurement quantities.

The House and Senate Armed Services Committees, in their reports on the FY2024 National Defense Authorization Act (NDAA) (H.R. 2670/S. 2226), recommended approving the Army's SMRF RDT&E and Procurement funding requests. The House and Senate Appropriations Committees, in their reports on the FY2024 DOD Appropriations Act (H.R. 4365/S. 2587), recommended approving the Army's SMRF RDT&E and Procurement funding requests.

Potential Issues for Congress

Additional SMRF Units

As previously noted, the Army's current plans call for fielding four SMRF batteries starting at the end of FY2023. The Army, however, plans for five MDTFs, with each MDTF having one organic SMRF battery, suggesting that one MDTF might not have an organic SMRF battery. Given this potential inconsistency and questions about additional SMRF batteries, including the possible fielding of SMRF batteries to the Army National Guard, Congress might seek to clarify the Army's long-term requirements for SMRF batteries beyond the four currently planned.

Overseas Stationing of SMRF Units

On March 30, 2021, the Chief of Staff of the Army discussing the LRHW, reportedly noted, "The politics of where they're based, how they're based, will be up to the policymakers and the diplomats." In a similar manner, overseas basing of SMRF batteries will also be subject to political decisions. Given range limitations of Army LRPF systems, the inability to secure overseas basing rights for these units could limit or negate their effectiveness. On December 1, 2021, the Secretary of the Army reportedly stated, "the Army is ready, when called upon, to be able to put those kinds of capabilities in the region. But it's really [the State and Defense Departments] that will take the lead in those discussions." Reportedly, in May 2022, the Secretary of the Army stated the Army did not yet have basing agreements for long-range systems but "discussions were ongoing" with a number of countries in the Indo-Pacific region. As previously noted, the Army reportedly plans to deploy SMRF in 2024 in support of U.S. Army Pacific at undisclosed locations in the Pacific region. Given the importance of basing, Congress might examine ongoing efforts to secure Army long-range precision fires unit basing in both Europe and the Indo-Pacific region.

Andrew Feickert, Specialist in Military Ground Forces

IF12135

Disclaimer