# Trump executive order calls for a next-generation missile defense shield

The White House bills this as an "Iron Dome for America." It's a lot more than that.

STEPHEN CLARK – JAN 28, 2025 7:52 PM |

256

Israel's Iron Dome aerial defense system intercepts a rocket launched from the Gaza Strip on May 11, 2021. Credit: Jack Guez/AFP via Getty Images



One of the new Trump administration's first national security directives aims to defend against missile and drone attacks targeting the United States, and several elements of the plan require an expansion of the US military's presence in space, the White House announced Monday.

For more than 60 years, the military has launched reconnaissance, communications, and missile warning satellites into orbit. Trump's executive order calls for the Pentagon to come up with a design architecture, requirements, and an implementation plan for the next-generation missile defense shield within 60 days.

A key tenet of Trump's order is to develop and deploy space-based interceptors capable of destroying enemy missiles during their initial boost phase shortly after launch.

"The United States will provide for the common defense of its citizens and the nation by deploying and maintaining a next-generation missile defense shield," the order reads. "The United States will deter—and defend its citizens and critical infrastructure against—any foreign aerial attack on the homeland."

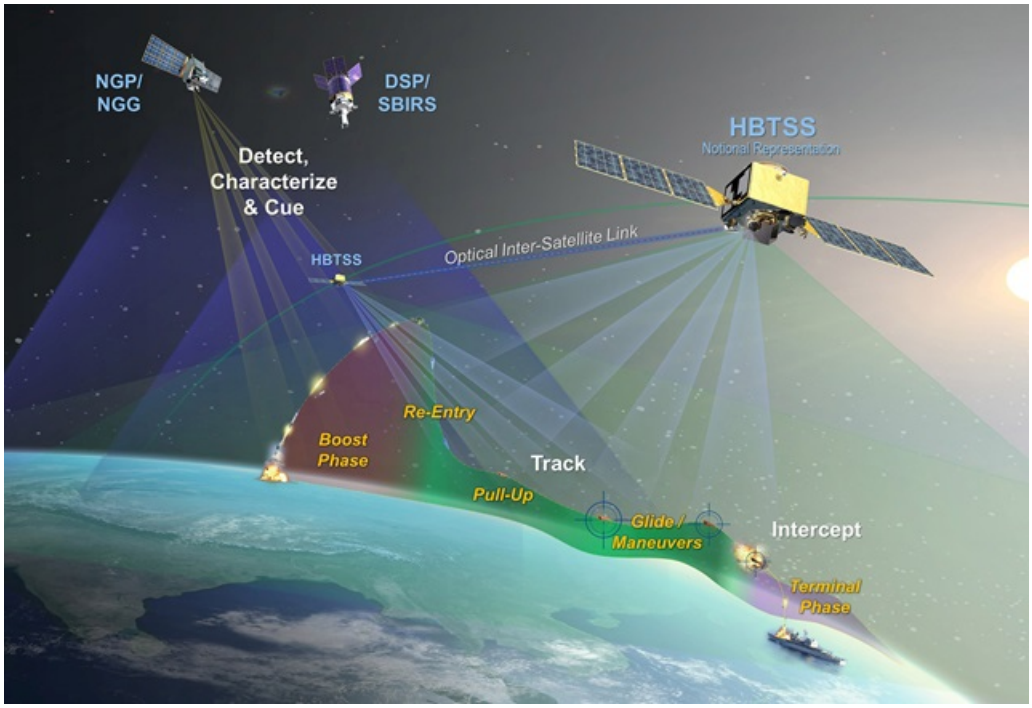
The White House described the missile defense shield as an "Iron Dome for America," referring to the name of Israel's regional missile defense system. While Israel's Iron Dome is tailored for short-range missiles, the White House said the US version will guard against all kinds of airborne attacks.

## What does the order actually say?

Trump's order is prescriptive in what to do, but it leaves the implementation up to the Pentagon. The White House said the military's plan must defend against many types of aerial threats, including ballistic, hypersonic, and advanced cruise missiles, plus "other next-generation aerial attacks," a category that appears to include drones and shorter-range unguided missiles.

In space, Trump's order would accelerate the deployment of the Hypersonic and Ballistic Tracking Space Sensor (HBTSS) layer, a fleet of satellites tuned to detect and track hypersonic missiles, providing warning of an attack against the United States or its allies. These missiles are smaller and more maneuverable than conventional ballistic missiles, which the US military's legacy early warning satellites can detect when they launch. Ballistic missiles are easier to track because they produce a bright exhaust plume and fly a predictable parabolic trajectory through space before reentering the atmosphere near their targets.

Hypersonic missiles typically spend more time flying in Earth's atmosphere. Their maneuverability makes them difficult to track.




This illustration shows how the HBTSS satellites can track hypersonic missiles as they glide and maneuver through the atmosphere, evading detection by conventional missile-tracking spacecraft, such as the Space Force's DSP and SBIRS satellites. Credit: Northrop Grumman

The first two HBTSS satellites were launched last year during a demonstration mission for the Missile Defense Agency. Another network of satellites managed by the Space Force's Space Development Agency—set up during the first Trump administration to develop new space capabilities more quickly—will combine missile detection, tracking, data relay, and targeting functions. Ultimately, SDA plans to field a fleet of hundreds of satellites with global coverage, allowing the network to sense a threatening missile, plot its trajectory, and then create a targeting solution to send to the ground for the launch of an interceptor to shoot it down.

The Pentagon wants this multi-layer fleet of missile-tracking satellites to handle all of these tasks autonomously in space and do it fast enough for ground forces to respond to the threat. These are things the military was already working on.

What's different with Trump's directive this week is a call for the US military to place weapons in space. Putting military weapons into orbit has been a controversial subject for decades and was a point of criticism made by opponents of the Strategic Defense Initiative (SDI) announced by former President Ronald Reagan in 1983.



SDI's cost, which Reagan's opponents tallied as high as $1 trillion, was another thing that sank the initiative in the

1990s, following the fall of the Soviet Union. Often derided as "Star Wars," SDI never achieved its lofty goals, but the Army, Navy, and the Missile Defense Agency developed land-based and ship-based interceptors capable of destroying a small number of missiles heading toward US or allied targets.

That's good enough for defending against a missile attack from a rogue state or an accidental missile launch by one of the world's other nuclear powers. It's not sufficient to protect against a large-scale missile strike.

The Israeli Iron Dome missile defense system (left) intercepts rockets (right) fired by the Hamas movement toward southern Israel from the northern Gaza Strip on May 14, 2021. Credit: Anas Baba/AFP via Getty Images

US military officials in the Biden administration were already discussing the reality of putting weapons into space, breaking a long-held taboo on the topic. This followed a Chinese test of a Fractional Orbital Bombardment System in 2021 and reports last year that Russia was seeking to deploy a nuclear anti-satellite weapon in orbit, which Ars covered in December.

In addition to placing interceptors into space, Trump's order calls for the Pentagon to shield major cities with their own local missile interceptors and develop a capability to defeat missile attacks prior to launch. The White House edict also says the military will secure the supply chain for the missile defense shield with "next-generation security and resilience features." The Pentagon will also look into "non-kinetic" systems to take out threatening missiles. These options might include lasers or directed energy.

There's no estimate on how much this missile shield will cost. The order said Secretary of Defense Pete Hegseth and the White House budget office will oversee the development of a budget for the program in time for the start of the next fiscal year, which begins October 1. Congress must weigh in on Trump's proposed budget before it becomes law.

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