

Igor Moric, "Dome of
Delusion: The Many Costs of
Ballistic Missile Defense",
Arms Control Today,
June 2025

Golden Dome

network of systems to shield every city in the United States against ballistic, hypersonic, and cruise missiles no matter **from where** they are launched, and **by who**

defense against any foreign attack, including **peer and near-peer adversaries**; theater missile defenses of forward-deployed troops, and allied territories, troops, and populations.

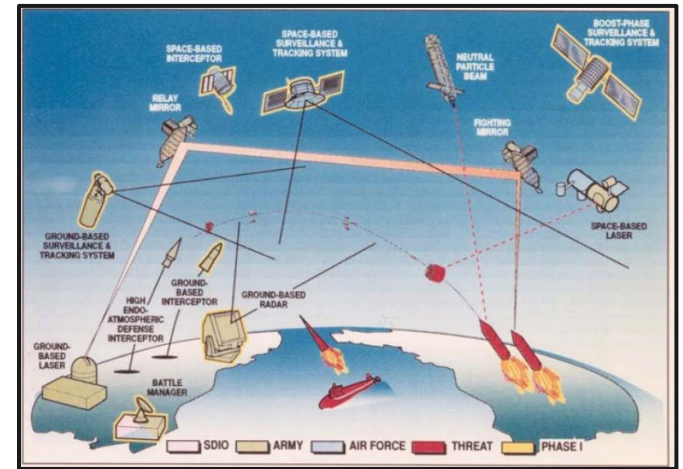
order asks development of **space-based interceptors** capable of **boost-phase intercept**, as well as able to **defeat missile attacks prior to launch**.

President Reagan on SDI:

— an “**invincible shield**” that can protect against nuclear war like a “**roof that protects a family from rain**”, “**eliminating the threat of nuclear attack**”.

President Trump on nuclear weapons:

— “**no greater menace**” than the threat of nuclear weapons, need to reduce “**massive nuclear arsenals**” and “**massive budgets**” spent on them.



Strategic Defense Initiative, 1983

Golden Dome will accomplish the opposite of these goals; it will damage U.S. security by causing an **expansion** of already bloated nuclear arsenals, **increasing** the risk of nuclear escalation, **without** providing any meaningful protection against nuclear war.

space-based interceptors close enough to launching sites could destroy missiles **immediately**, before they exit the atmosphere and deploy warheads.

-> Russia and China will not accept **tens of thousands of weapons** overflying their territory

-> **a single layer of interceptors not enough**, because the attacker could destroy them with relatively cheap missiles

-> defender must deploy **multiple layers in different orbits**, multiplying the overall cost and complexity



President Bush in 2000:

*“our missile defense must be designed to **protect all 50 states and our friends and allies and deployed forces** overseas, from missile attacks by rogue nations or accidental launches”*

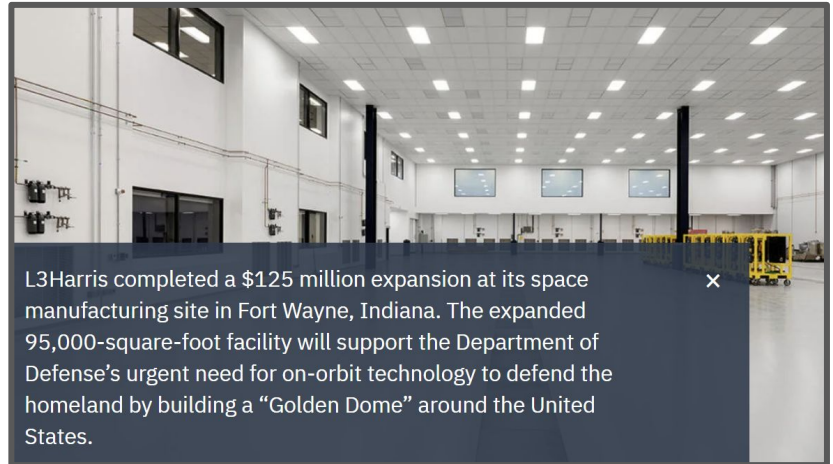
*“**the world has changed a lot since the '80s. Science is evolving, laser technology is evolving,** there is a lot of inventiveness in our society”*

LOCKHEED MARTIN: *"this is a Manhattan Project-scale mission, one that is both urgent and crucial to America's security."*

Lockheed Martin is ready to partner with the best in industry, emerging and large technology companies together to safeguard our nation."

L3HARRIS: "In the face of this rapidly evolving threat landscape, it's encouraging to see the U.S. take decisive action. President Trump's recent executive order to accelerate the development of a Golden Dome for America is, in our view, a proportionate response to a catastrophic threat."

SpaceX, Palantir And Anduril Lead The Race To Build Trump's Golden Dome



L3Harris completed a \$125 million expansion at its space manufacturing site in Fort Wayne, Indiana. The expanded 95,000-square-foot facility will support the Department of Defense's urgent need for on-orbit technology to defend the homeland by building a "Golden Dome" around the United States.

ARLINGTON, Va. — The U.S. Senate has formed a new "Golden Dome Caucus" focused on developing what could become one of the nation's most expensive defense initiatives in history — a **comprehensive missile shield** designed to protect the American homeland from an increasingly complex array of aerial threats.

U.S. spent **~200 billion dollars on missile defense since 2002**, and a **total of ~500-700 billion since the 1960s**.

Trump set aside **\$25 billion in next year's defense budget**, with the total cost at **\$175 billion by end of term**.

according to CBO, the costs for U.S. missile defense system development **2020–2029** were estimated at **about \$200 billion**, focusing on land and ship systems **without** the space-based component.

CBO estimated that the space elements could reach **\$542 billion** over the next 20 years, to defeat against a **North Korean** strike of 1-2 ICBMs.

**Space component of the Golden Dome against Russia or China would cost trillions \$:
it will not be deployed in 3 yrs**

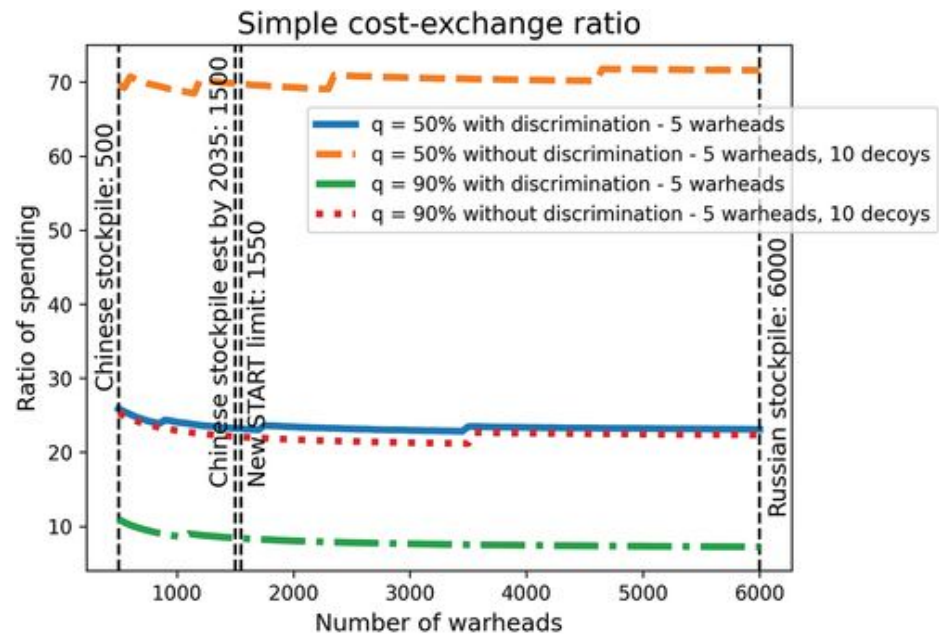


Focusing on land and ship based interceptors (Aegis and NGI): we compared the cost of Russian or Chinese **ballistic missiles with warheads** to the **cost of U.S. interceptors**:

a) OPTIMISTIC CASE: US would need to spend 8 dollars to defend itself for every dollar Russia or China spend to attack, if the system can stop 90% of all incoming warheads, and perfectly reject all countermeasures

b) MORE REALISTIC CASE: with interceptor kill effectiveness of 50% and if the U.S. cannot reject all countermeasures, **U.S. need to spend 70 dollars for each dollar Russia or China spend.**

The cost-exchange dynamics heavily favors the attacker.



Total Costs including maintenance, per unit	
BMD System	
NGI	\$487 M
Aegis Ashore	\$208 M
Aegis Ship	\$60 M

Included Costs	
ICBM	\$24 M unit cost
Missile maintenance	\$16 M per 30 years, per missile
Silo and launch facility	\$2 M
Warhead	\$4 M

"Forecasting Costs of U.S. Ballistic Missile Defense Against a Major Nuclear Strike", Igor Moric, Timur Kadyshev, 2024.

President Trump: *"some funding is tough and some is easy, when we say we will save everyone's lives, in a crazy world, it **seems to be very easy to get.**"*

President Reagan: *"but isn't it worth every investment necessary to free the world from the threat of nuclear war? **We know it is.**"*



Real issue is that **missile defense is so much more expensive to attack** that attempts to establish it incentivize attackers to **outspend the defender by acquiring offensive weapons at a much lower relative cost** → nuclear arms race.

→ Golden Dome is **not a solution for nuclear war**; it cannot protect and is **bad for deterrence as its cost-exchange dynamics invites adversaries to build-up.**

→ Golden Dome **will end in failure**, but not before **hundreds of billions of dollars are spent**, the **world becomes less safe** because U.S. adversaries end up with **even more nuclear weapons**, and **more ways to deliver** it to the United States.

the flight of a ICBM from Russia or China is about 30 minutes.

defender either destroys missiles:

a) **immediately** after launch when they are **big, bright, slow-moving**, targets,

b) later when individual reentry vehicles containing warheads are **released from the payload**, and the number of targets are multiplied.

attacker would employ **countermeasures** to fool the defense and make interception more difficult.

defender must **identify decoys and ignore**, or **waste** interceptors to **destroy**

