Understanding the Long-Range Strike Debate

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What are the issues?

- **DOD has a shortfall in long-range strike capabilities**
  - High-volume long-range strikes needed to rapidly halt Chinese aggression in the Indo-Pacific or a Russian attack on a NATO ally in Europe
  - Not just bombers and other launch platforms—must increase inventories of precision-guided munitions (PGMs) and posture them forward
- **All services plan to acquire new capabilities for long-range strike to meet this need, including hypersonic (Mach 5-plus) weapons**
- **How should DOD prioritize its long-range strike investments?**
  - DoD should balance the cost of redundancy vs. benefit of resiliency; ground and sea-based strikes can increase targeting complexity for aggressor and the diversity of attacks possible

What are the most cost-effective alternatives for conducting long-range strikes at scale in an era of flattening or declining defense budgets?

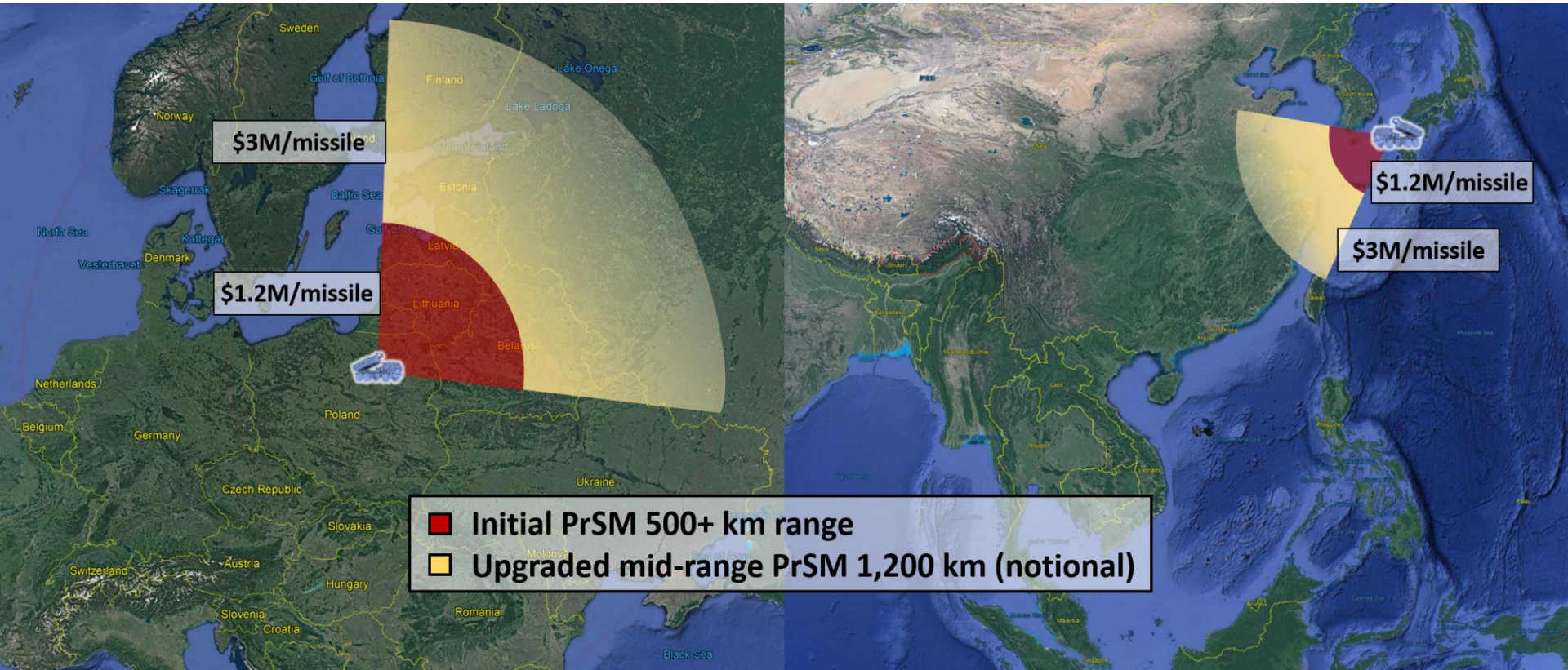
Key findings

- **Army's initial Precision Strike Missile (PrSM) and future Mid Range Capability (MRC) useful for counter-A2/AD strikes in Europe**
  - Sufficient range for battlespace; can fire from defended areas
  - Intra-theater transportation and logistics networks to support
  - Can complement high-volume airstrikes by attacking from under A2/AD envelope

- **PrSMs launchers located in Japan and elsewhere along First Island Chain would have limited utility for strikes against targets in China's mainland**
  - Ranges from defended areas are at least 700-800 km to China, requires longer-range weapons; weapon cost and size greater than weapons needed in Europe
  - If PrSMs have seekers needed to attack moving ships, they could complement Marine Corps counter-maritime strikes in Indo-Pacific littoral areas

Comparing potential PrSM coverage

- PrSMs are smaller and have more range than ATACMs, 200-pound class blast-frag warheads (trade missile size and weight for range), INS/GPS guided
- Planned rocket motor upgrade could double or more PrSM range, plus Army will add multi-mode seeker to attack emitting targets—upgrades will increase cost



Key findings (continued)

Rules of thumb for munitions

- Size and cost increases with range
- Cost increases with speed
- Surface-launched weapons generally larger & cost more than air-delivered PGMs
- Must also consider cost of delivery platform and their required defenses

Army Long Range Hypersonic Weapons (LRHW) will have range needed for Indo-Pacific and ability to penetrate defenses

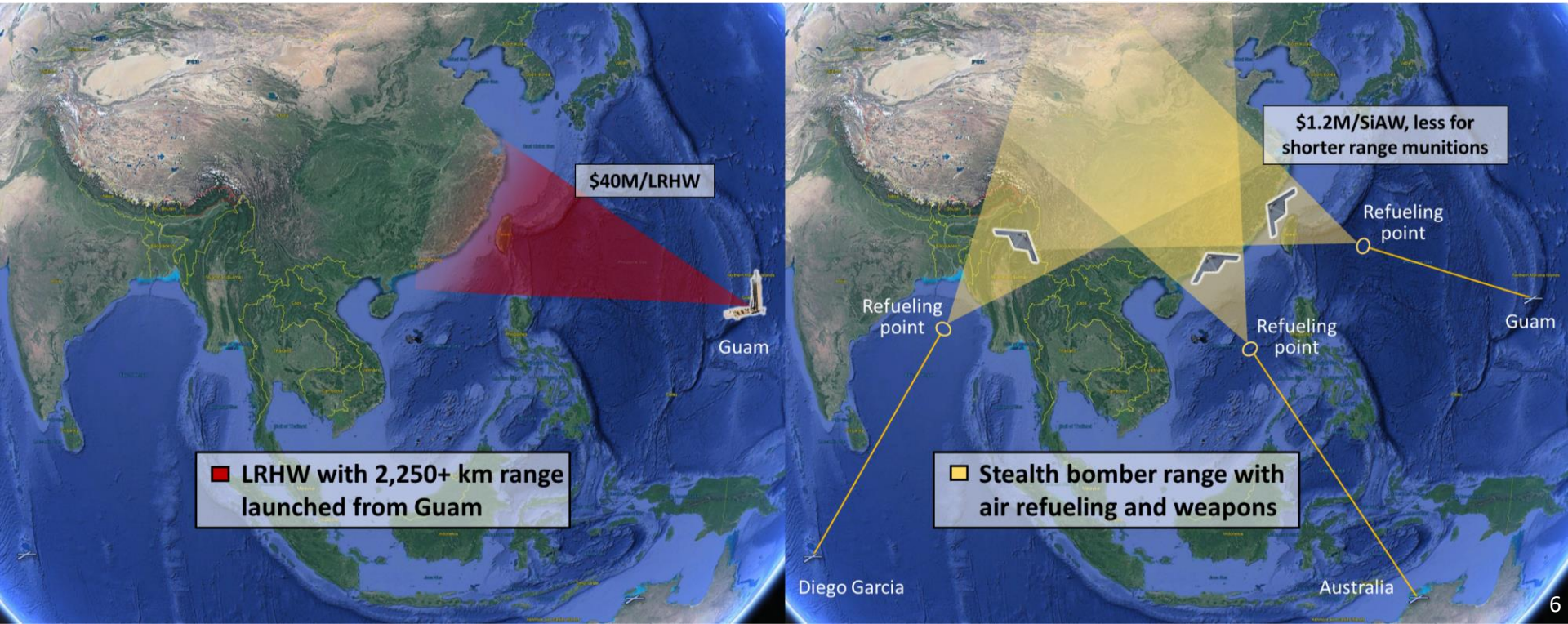
- However, they will be large weapons and could cost $40-50 million each…difficult to buy in significant numbers
- Strike aircraft and surface ships that maneuver closer to target areas can use smaller, less expensive weapons


Artist's depiction of LRHW launchers

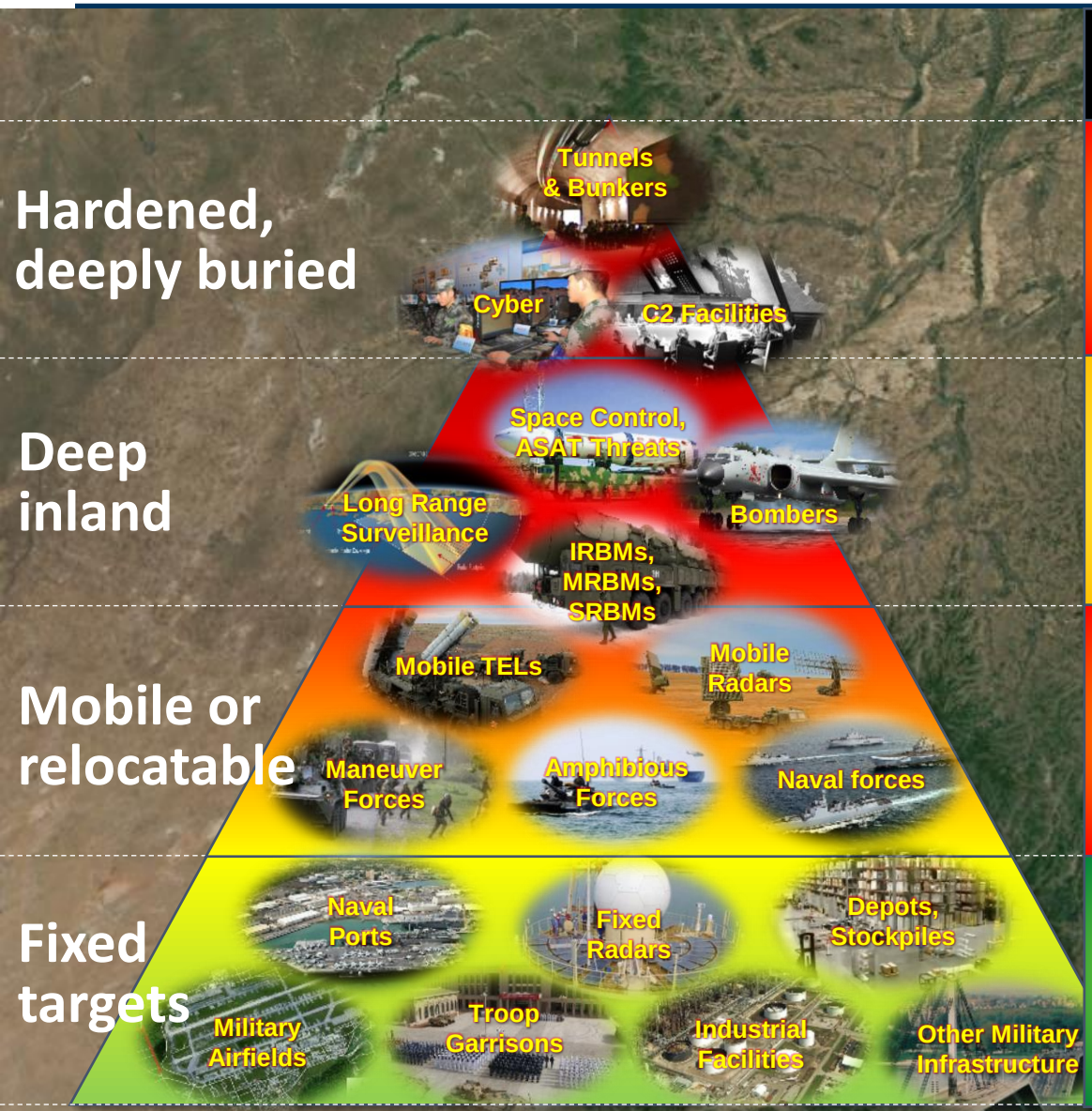
Missile cannister delivery

Illustrating these relationships

- If they have sufficient range, LRHWs launched from Guam could strike Chinese targets from U.S. territory—but their cost would limit size of their inventory
- Supported by aerial refueling, long-range bombers carrying less expensive JASSM-ER or Stand-in Attack Weapons (SiAW) could strike Chinese targets from multiple directions



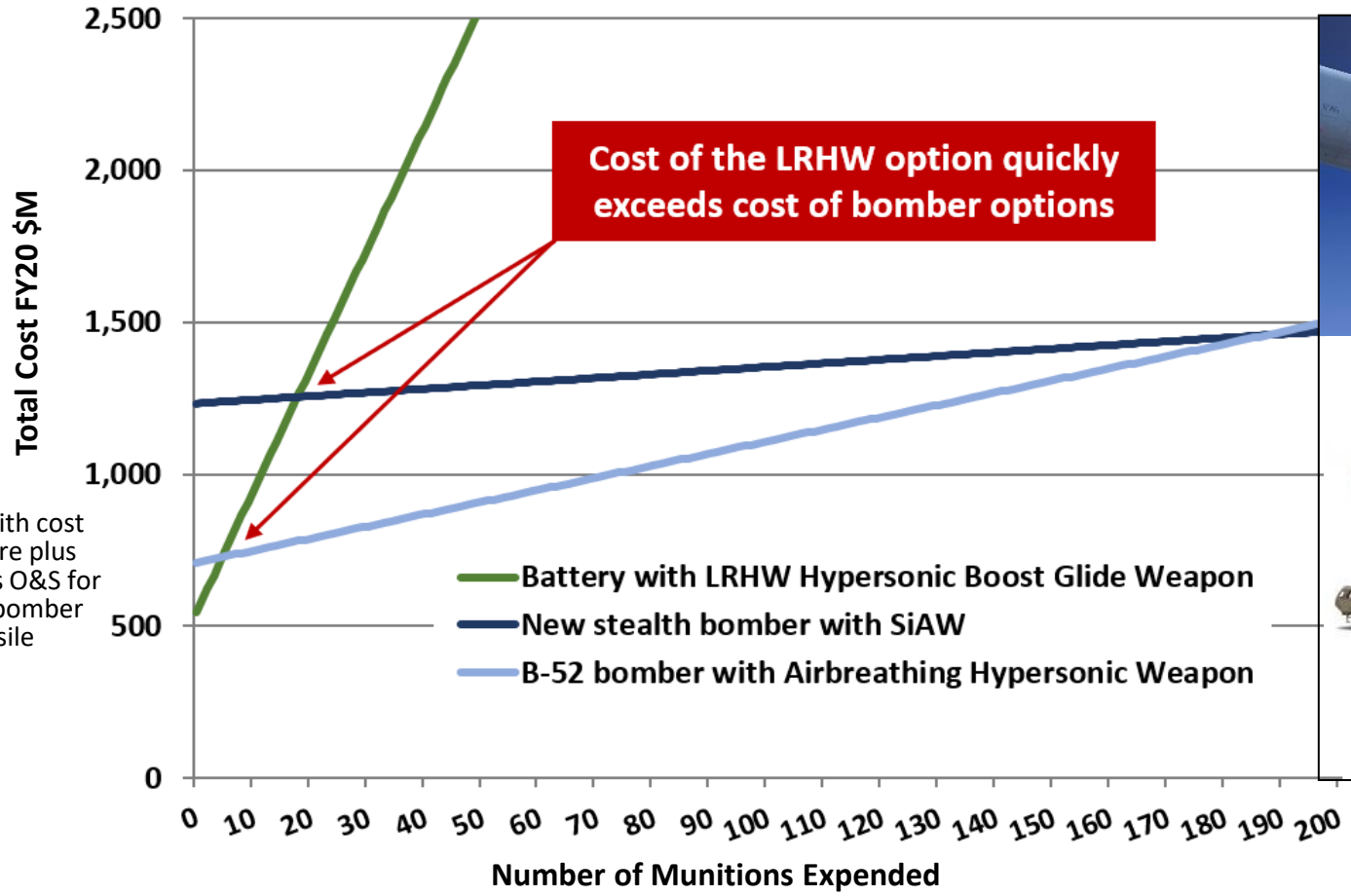
Must consider effectiveness of different weapons against challenging targets



	Subsonic Long-Range Missiles	Hypersonic Long-Range Missiles	Penetrating Aircraft
Hardened, deeply buried	Insufficient penetration	Insufficient penetration	Still challenging, but only means to deliver very large penetrating munitions
Deep inland	Insufficient range for very deep targets, increased potential to be intercepted	Very long ranges possible, more survivable, but unit cost could limit inventory	Bombers with air refueling have range, may need support to reduce threats
Mobile or relocatable	Time needed to complete kill chain and weapon flight times a challenge	Time needed to complete kill chain still an issue for very long-range weapons	Still challenging, but can complete own "find-fix-track-target-attack" kill chain
Fixed targets	Good	Good	Good

Also assess cost effectiveness of alternatives to determine mix that maximizes capacity

- Cost to achieve effects against targets should be considered, not just unit costs
- Total costs include missile battery and new stealth bomber acquisition plus their 30-year operating and support (O&S) as well as the cost of their weapons



Starts with cost to acquire plus 30 years O&S for stealth bomber and missile battery

Notional missile battery in long-range fires battalion

Our recommendations

- **Complete a cost effectiveness assessment** to determine the mix of capabilities that would maximize DOD's long-range strike capacity and provide theater commanders with multiple options
- **Also consider the opportunity costs** of the Army's long-range strike investments to determine if resources could be better used for its core mission of defending U.S. forces and theater bases against missile salvos
- **Address potential host nation concerns** with stationing U.S. strike batteries in Japan/other Indo-Pacific allies and then using them to strike China in a crisis
- **Procure Army mid-range weapons for Europe** to deter and defend NATO allies against Russian aggression
- **Integrate Army and Marine Corps counter-maritime strike** by cooperatively developing operating concepts, tactics, techniques, and procedures that integrate their littoral strike operations in the Indo-Pacific

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