Shipbuilding and Acquisition

USMC Landing Craft Case Study

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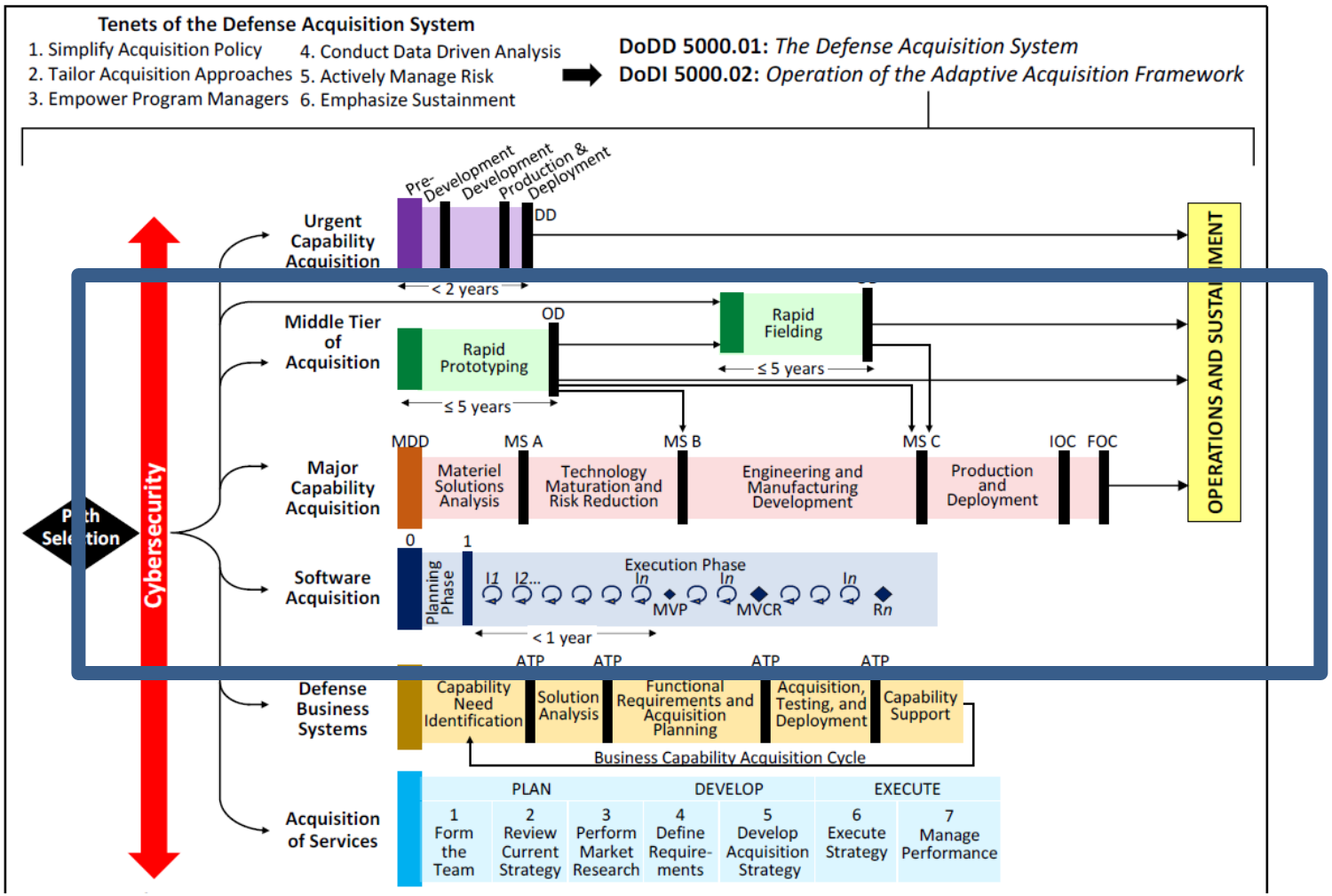
Shipbuilding and Acquisition

- **General Approach:** Use the USMC Landing Craft program to enhance critical thinking and decision-making skills with respect to program's acquisition program baseline, and affordability considerations.
- **Applicability:** Defense Acquisition professionals
- **Overall Learning Objectives:**
  - Analyze a program at a key decision point—***critical thinking***.
  - Identify and engage key stakeholders—***stakeholder engagement***.
  - Develop and compare alternative recommended strategies—***decision making***.
  - Identify second-order considerations of the recommended strategies—***strategic leadership***.

DoD Acquisition Framework

Adaptive Acquisition Framework



SECNAVINST 5000.2G

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY

DON's Two Pass Seven Gate Governance:

- Applies to all acquisition programs
- ***integrated, collaborative, and disciplined*** framework for requirements, resources, acquisition, and warfighting communities to make sound ***investment decisions*** at key points within the ***JCIDS and the DAS***
- ***CNO/CMC and ASN (RD&A) shall*** implement these procedures in a collaborative manner to arrive at informed decisions.

Acquisition – *Ship Building*

DoD 5000 regulation's emphasize program tailoring, but….

- ***Ship programs normally formally initiated at MS A as PoR*** (normally at MS B)
  - ➢ Concurrency of technology development and system design activities
- ***MS B is initial production authorizing construction of lead ship*** (normally at MS C)
  - ➢ Begin manufacture during EMD phase
- ***Leads to ambiguous definitions for MS C (LRIP and FRP decision points for ships***

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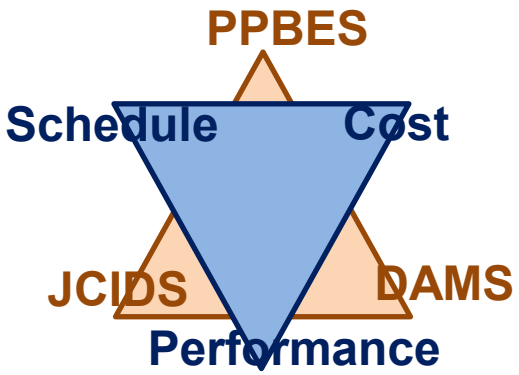

- Landing Ship Medium (LSM) is a priority USMC acquisition program
- USMC Force Design 2030 identifies a requirement for 35 ships.

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LSM Need

- Marine Littoral Regiments (MLRs) lack ability to move company-sized forces between Pacific islands.
- Larger than Landing Craft Air Cushion (LCAC) or Landing Craft Utility (LCU)
- Smaller than Landing Platform Dock (LPD)

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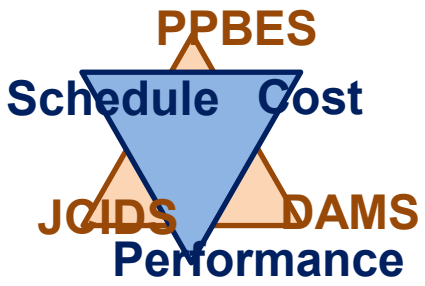
Acquisition Strategy

- AO: 35 ships
- APUC: $100-150 million
- Design Contract awards: AY21
- LRIP Contract award: AY25
- IOC: 2028
- Simple modified commercial design approach



Source: U. S. Navy| GAO-23-106059

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LSM Requirements:

- length of 200–400 feet
- maximum draft of 12 feet
- displacement of up to 4,000 tons
- ship's crew of no more than 40 USN sailors
- ability to embark at least 75 Marines
- 4,000–8,000 square feet of cargo area
- stern or bow landing ramp
- modest suite of C4I equipment
- 30mm gun system and .50 caliber machine guns
- transit speed of at least 14 knots
- minimum transit range of 3,500 nautical miles
- tier 2+ level of survivability - level broadly comparable to that of a smaller USN surface combatant (e.g., a corvette or frigate): absorb a hit and keep the crew safe until transfer to another LSM
- ability to operate within fleet groups or deploy independently
- 10-year minimum and 20-year expected service life

Key to the LSM design are mobility and survivability to hide among commercial shipping lanes and surrounding Pacific Islands

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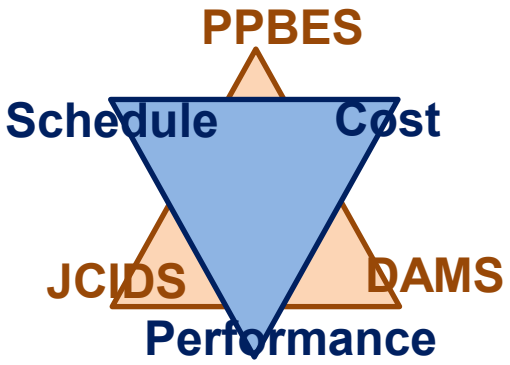
Issue: Navy concerns over limited survivability requirement with potential AUPC increase to $350M, schedule delays and AO uncertainty

Root Cause: unapproved AoA and limited Navy Shipbuilding budget

Stakeholders

- CMC
- SECNAV
- Marines and Sailors
- PEO Ships
- DASM Ships
- N86 – resource sponsor
- Shipbuilders and shipyards
- Congress



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Background:

- LSM program renamed from Light Amphibious Warship (LAW) program
- AoA anticipated to justify a new ship over repurposing existing USN, Maritime Sealift Command, or U.S. Army watercraft.
- Concept design contracts awarded to create digital prototypes to five production-capable shipbuilders (not all traditional Navy amphibious shipbuilders) with the option to award a follow-on PDR contract – totaling $7.5M and $14.7M.
- AoA not approved because key requirements of the new vessels are very similar to the capabilities of vessels operated by U.S. Army Transportation Command

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Revised Acquisition Strategy:

- LRIP procurement contract award in 2025, with the first LSM estimated cost at $187.9M
- Using a single ship builder, the follow-on manufacturing contract award for the second LSM would occur in FY2026 and cost $149.2M
- Third and fourth ships would be procured in FY2027 and cost a combined $297M, or $148.5M per ship.
- The LRIP fifth and sixth LSM procurement contract awards are scheduled for FY2028, costing an estimated combined total of $296.2M, or around $148.1M per ship

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Program Challenges:

- 35 LSM would require 280 junior naval officers, and put officers at a disadvantage compared bigger warship experience
- Survivability requirements increase $150M to $350M AUPC
- AO: USMC wants 35, but Navy supports only 18
- USMC values ship procurement and delivery speed by requested procurement funding before the final requirements are determined
- DIB capability and capacity: 4 LSM's per year to complete AO buy with 5 years.
- USN prefers a single shipyard that manufactures all LSMs but would consider a multi-yard approach if it accelerated schedule or reduced costs

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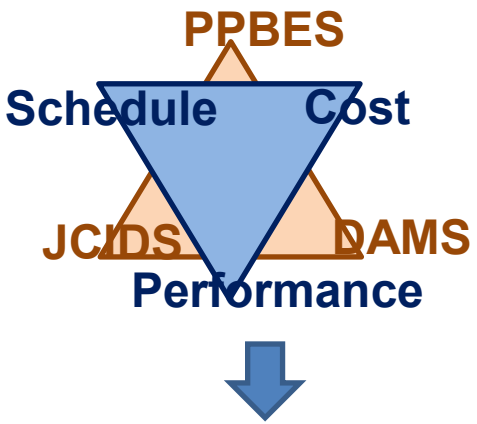
Decisions:

1. What is the best option to solve the warfighter's medium size amphibious ship capability gap?
2. Assuming the LSM AoA justifies a materiel solution, what's the best acquisition pathway to follow?
3. What's the best LSM contract award strategy?

Issue: Navy concerns over limited survivability requirement with potential AUPC increase to $350M, schedule delays, AO uncertainty
Root Cause: unapproved AoA and limited Navy Shipbuilding budget



Pressures and Decision Criteria:

- Performance
- Cost
- Schedule
- Technical/Manufacturing Risk
- Industrial Base
- Security

Path Forward / Recommendation

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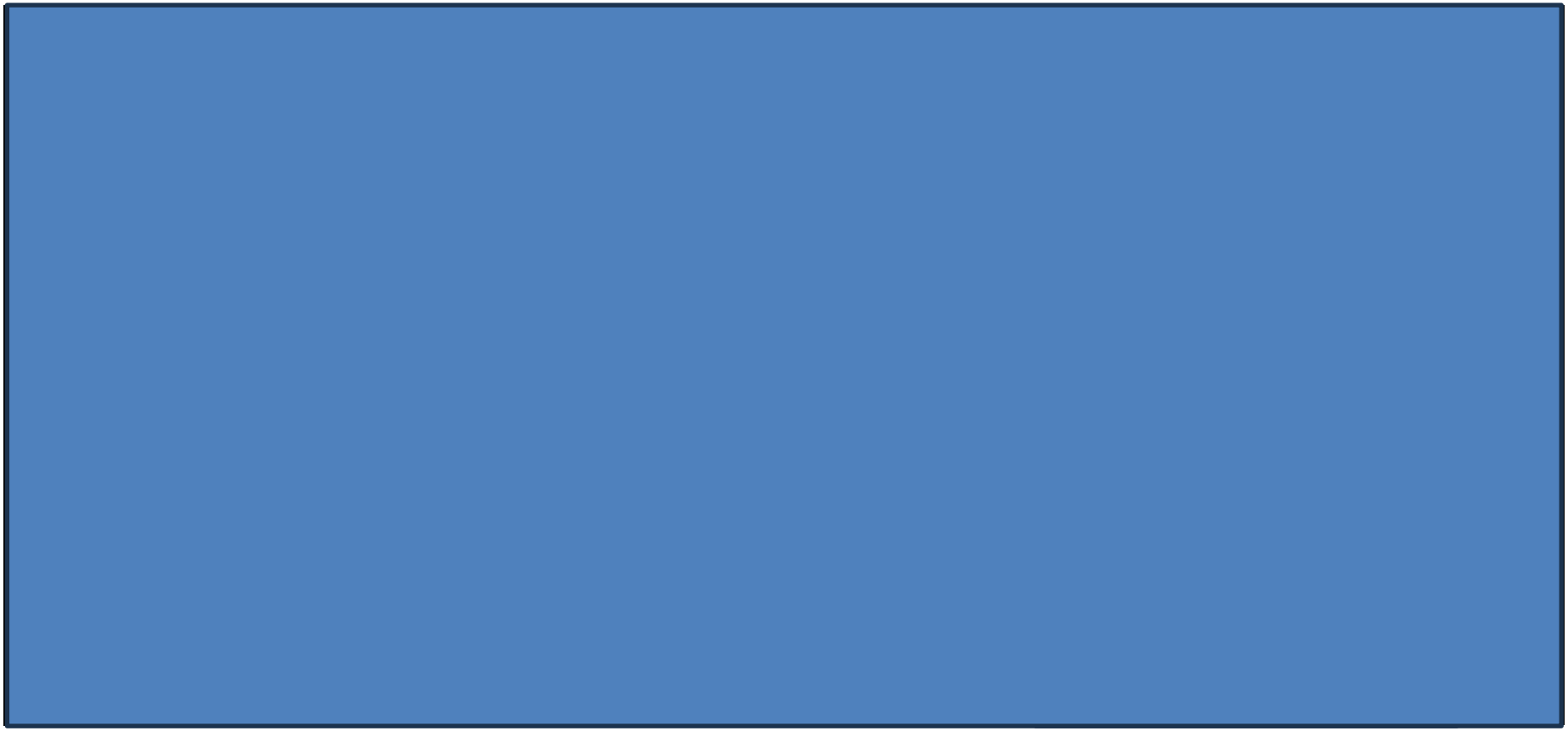
- **What is the best option to solve the warfighter's medium size amphibious ship capability gap?**
  - Analysis of DOTmLPF Assessment that supported the MDD MS A



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- **What is the best option to solve the warfighter's medium size amphibious ship capability gap?**
  - Challenges to DOTmLPF Assessment that supporting the MDD MS A

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Capability Gap Analysis:

- Using existing ships is worst in meeting performance requirements, operational need dates, and industrial base considerations; therefore, it not a viable option.
- If performance requirements and industrial base considerations are more important than budget constraints, operational need date and technical/manufacturing risk, then the USMC leadership should pursue the LSM Program.
- When comparing the LSM Program to the Joint Program with the Army's MSV-H, meeting the USMC performance requirements must be more important than potential cost savings considerations.

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- **Assuming the LSM AoA justifies a materiel solution, what's the best acquisition pathway to follow?**
  - Assumes the USMC continues to pursue a modified COTS approach
  - Assumes the AoA justifies the AO, survivability requirements and AUPC
  - Performance, cost, and industrial base criteria are non-discriminating

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Acquisition Pathway Analysis:

- Performance requirements tradeoffs to reduce the AUPC are acquisition pathway agnostic – making performance and cost criteria non-discriminating.
- Competition makes industrial base considerations non-discriminating.
- The choice between the MCA pathway and MTA pathway comes down to schedule (going fast) versus risk (increases the chance of program failure)
- MTA pathway 5-year objectives are arbitrary
- To meet a specific need date, programs must reduce cost and technical risk by trading off performance requirements.

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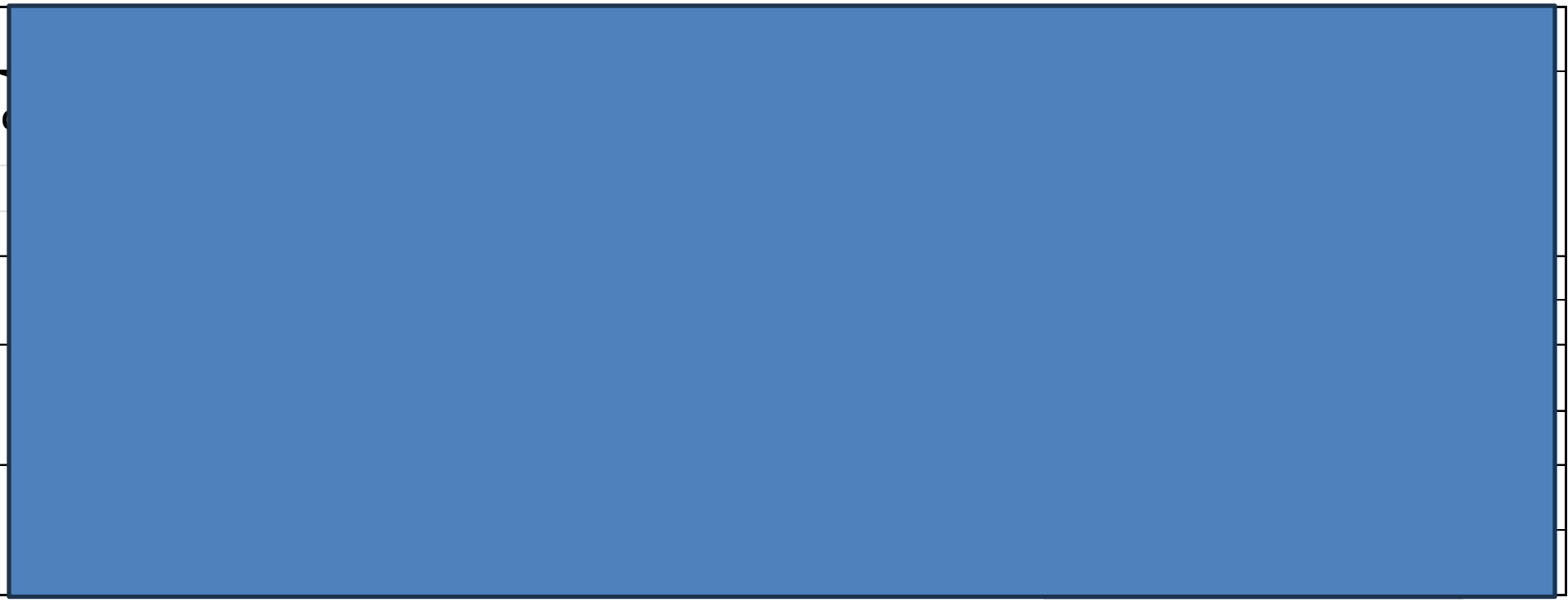
- **What's the best LSM contract award strategy?**
  - Assumes that all the contractors have the capability and capacity to meet the requirements



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Contracting Strategy Analysis:

- The cost and schedule criteria are driven by the amount of competition – the more competition the better.
- The decision becomes a tradeoff between schedule and cost versus risk and security considerations.
- The single domestic shipbuilder is best for risk and security considerations due to better configuration and oversight control.
- The multiple domestic shipbuilder's option is good balance option, especially when factoring in the advantages to the Shipbuilding Defense Industrial Base.

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Program Case Analysis Results:

- USMC leadership should consider the following path forward:
  - Use a modified COTS approach to reduce risk, prioritize schedule, and meet the USMC unique requirements.
  - Consider an incremental approach - initiating the program through a prototyping/fielding MTA effort with minimal initial requirements and transitioning to a LSM PoR at MS B/C to achieve full performance requirements.
  - Consider leveraging multiple domestic shipbuilders/yards over a single or international shipyards.