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Analysis of a Lightly Manned Autonomous Combat Capability (LMAAC) Concept

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Monterey, California: Naval Postgraduate School

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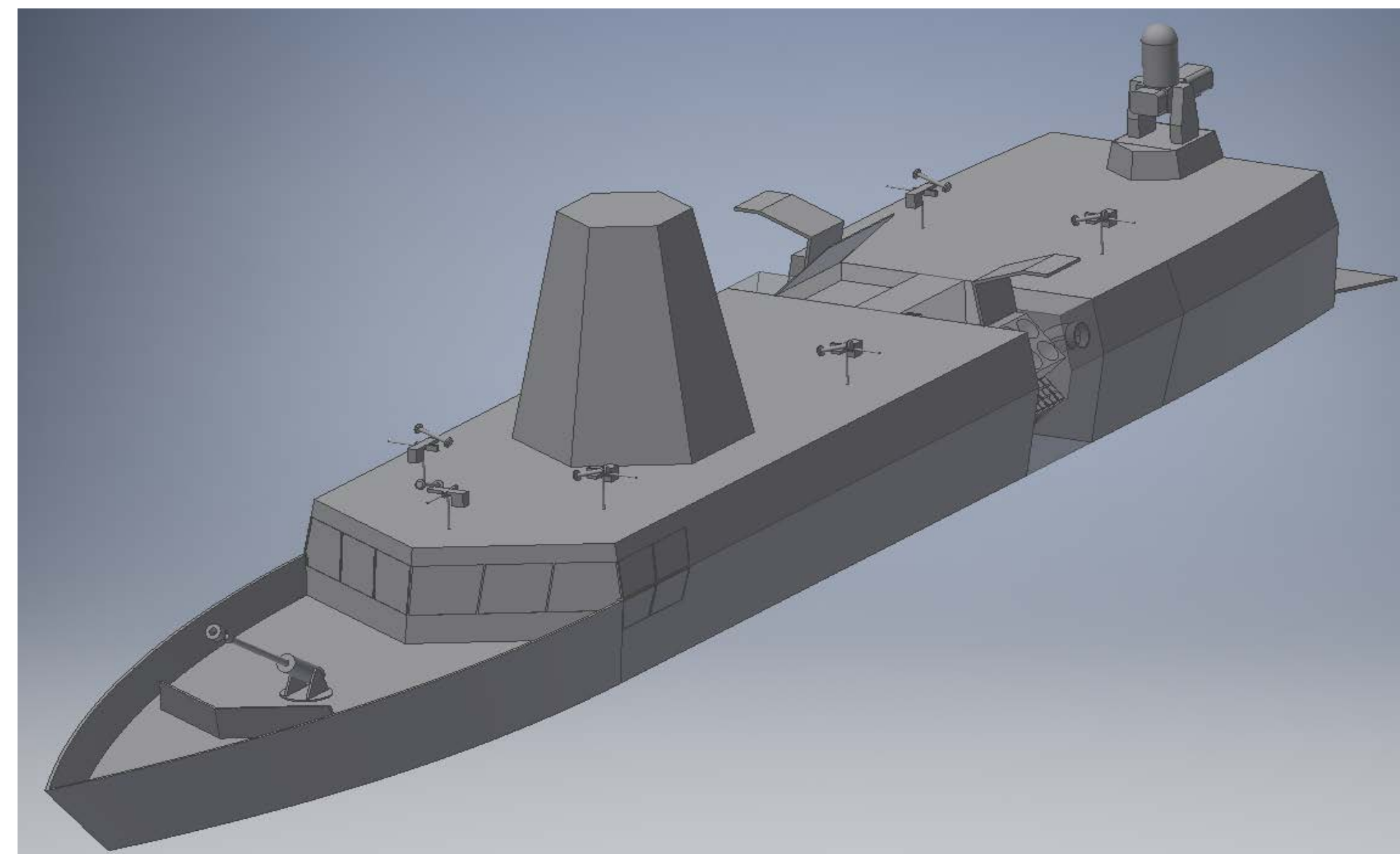
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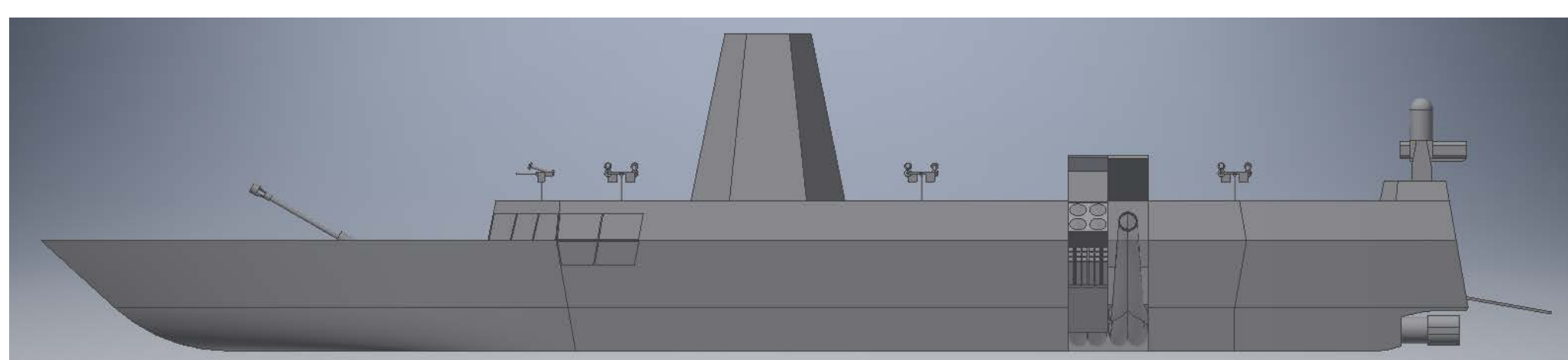
Concept and Operations

The USN is in need of a vessel that can be largely autonomous with regard to engineering and navigation but as small human crew to fight the ships weapon's systems.

Primary role is delivery of precision long range surface to surface missiles against adversary shore and surface missile batteries. Each has this priority mission plus one additional surface warfare mission. In concert with Autonomous vessels as sensors.



LMACC, 200 feet at waterline, 1000 tons loaded



Basic hull form with missile battery midships, and exhaust ports over the sides

Next Steps-Acquisition

- Discussion with shipyard candidates.
- Use of OTA or other unique acquisition methods.
- Comparison of costs in *Naval Engineers Journal* using modeling techniques of Dr. Johnathan Mun.
- Next article to focus on internal arrangement, and weapon's systems placement.
- Intention is to develop prototype for testing with MUSV

Arguments for LMACC

1. Working in "packs" of 5 LMACCs and 6 MUSV, can distribute sensors and weapons over a wide distance. The essence of DMO.
2. Addition of stealth, plus EW, hiding in the littorals and among other traffic. This confuses enemy's targeting picture and makes it much harder.
3. Cost of entire fleet of LMACC is less than the cost of 1 DDG.
4. Personnel cost: crew of 15. For entire fleet roughly personnel for 1 DDG.
5. Shipyard availability: roughly 30 yards have been identified with needed capability.

Engineering

- The vessel is designed around diesel-electric and swiveling pumpjet technology that is also hybrid capable.
- Many innovations are included in the design to make it truly a Human-Machine weapon system.
- Human systems integration a big part of the design

