Executive Summary

The United States continues to rely heavily on the US Navy for regional presence and quick strike capability. However, if the US Navy is to continue performing these vital roles in the face of shrinking defense budgets, a more cost effective, versatile platform is required. The US Navy can no longer afford to build great quantities of large ships capable or performing every mission at all times.

The ship of the future not only must have a reduced initial acquisition cost but also must be easier and less expensive to upgrade. Rapidly advancing technology is making it imperative that the ships of the future be easily reconfigurable. The Advanced Naval Combatant (ANC) shown above provides a viable solution. The ANC is a versatile ship that can perform multiple missions but does not perform all missions simultaneously. The ANC carries two mission modules that can be quickly switched out depending on the missions it is required to perform. Each ANC is equipped to perform defined core capabilities (capabilities that are inherent regardless of the installed modules).

The 2020 IOC necessitated the examination of advanced technologies. Some of the advanced
technologies the ANC will employ are: a trimaran hull form, fuel cell based engineering plant, and waterjet propulsion. The trimaran hull form provided unique design challenges not encountered with a monohull design. These challenges necessitated additional work in three major areas:

- The development of trimaran ship design tools.
- The analysis of trimaran stability and resistance.
- The structural impact of the sidehulls.

The resulting Advanced Naval Combatant principal characteristics are:

- **Full Load Displacement**: 3,810 lton
- **Length Overall (LOA)**: 510.0 ft
- **Length Between Perpendiculars (LBP)**: 480.0 ft
- **Beam Overall (BOA)**: 65.0 ft
- **Sidehull Separation**: 10.0 ft
- **Draft (T)**: 15.8 ft
- **Depth Station 10**: 31.0 ft
- **Endurance Range**: 5,000 nm
- **Sustained Speed**: 35.8 kts
- **Installed Horsepower**: 47,160 HP
- **Crew Size**: 40
- **Mission Modules**: 2
- **Avg Follow Ship Acquisition Cost**: $341M