

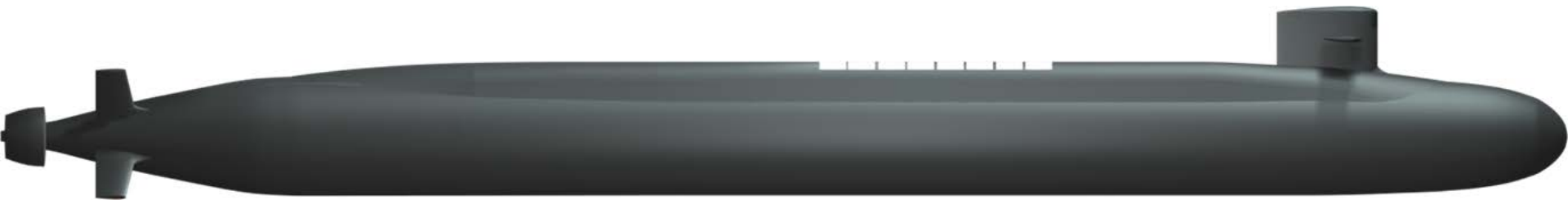
COLUMBIA Class Submarine Program



Presented to the American Society of Naval Engineers in Hampton Roads

RDML David A. Goggins
COLUMBIA Program Director

13 December 2017





COLUMBIA Class

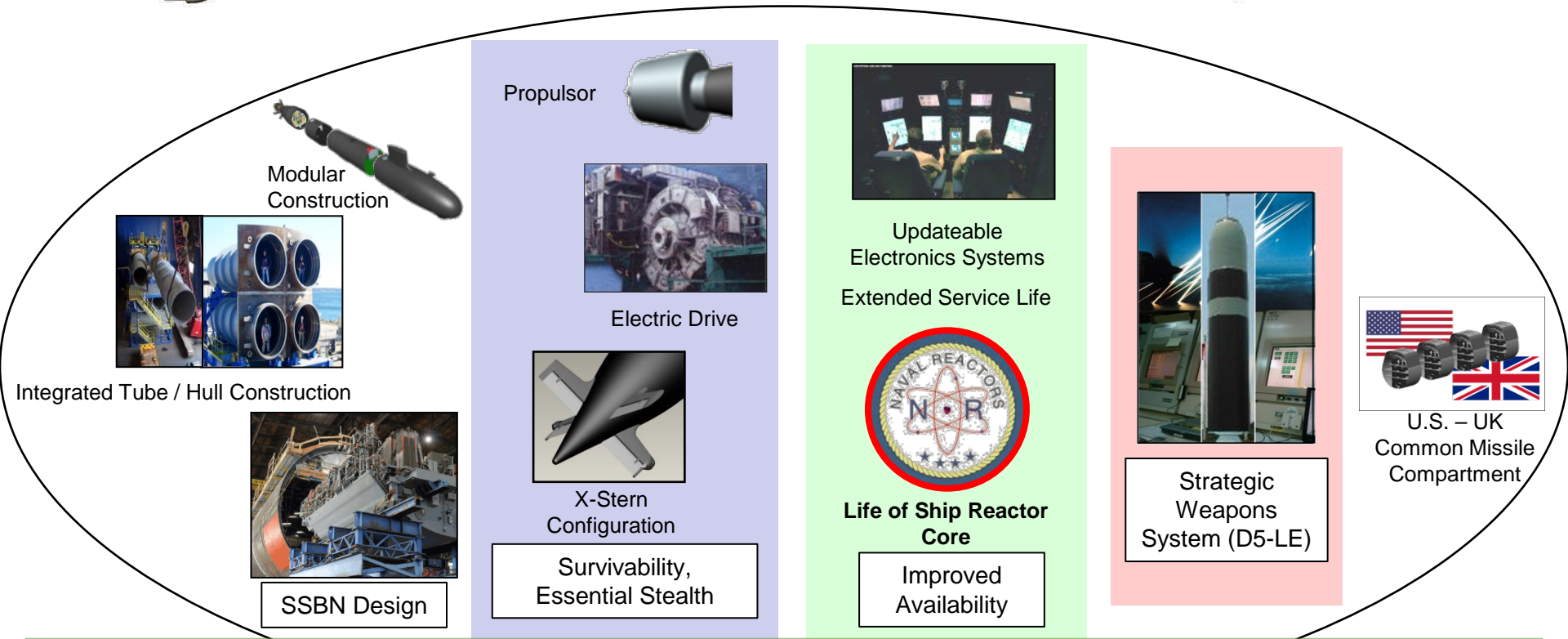
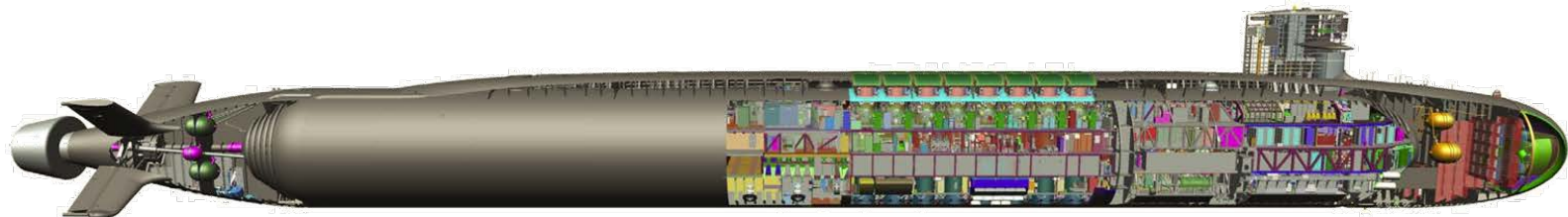
- Sea Based Strategic Deterrence (SBSD) is the most survivable leg of the Nuclear Triad
- COLUMBIA Class is the #1 Navy acquisition priority that must deliver on time; no further margin for delay without impacting USSTRATCOM requirements
- Program is on track to support construction start in FY2021
- Program is funded, costs are understood, and actions are targeted to drive affordability



COLUMBIA Class Program

A Holistic Plan to Deliver SBSD:

“Aligned Execution of Multiple Discrete Elements”

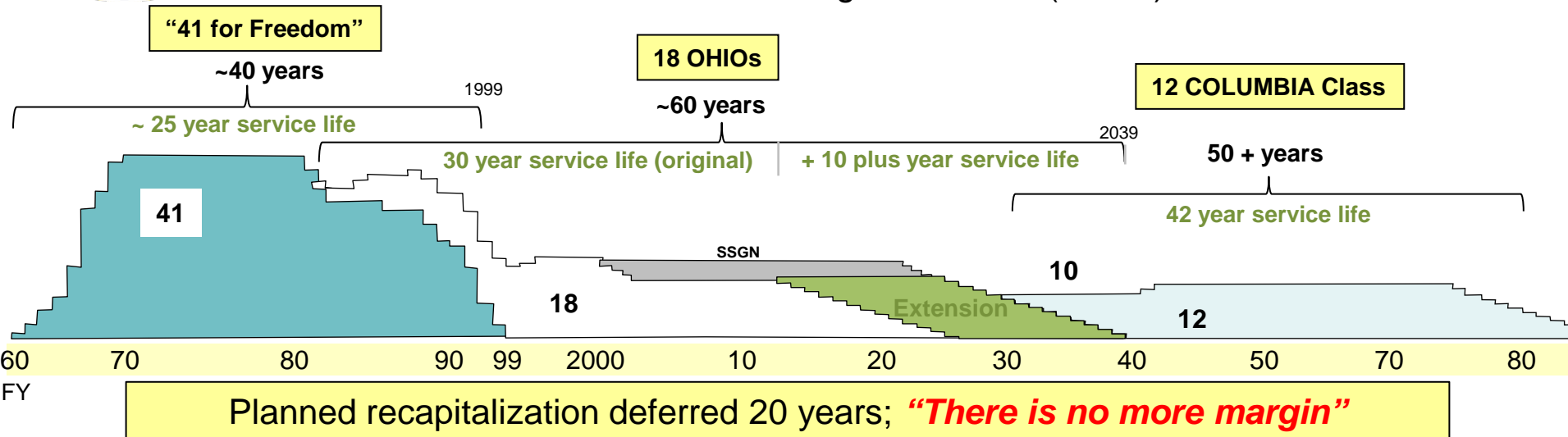


Coordinated Approach is Necessary to Provide a Credible and Affordable Strategic Deterrent Capability by 1st Quarter FY 2031



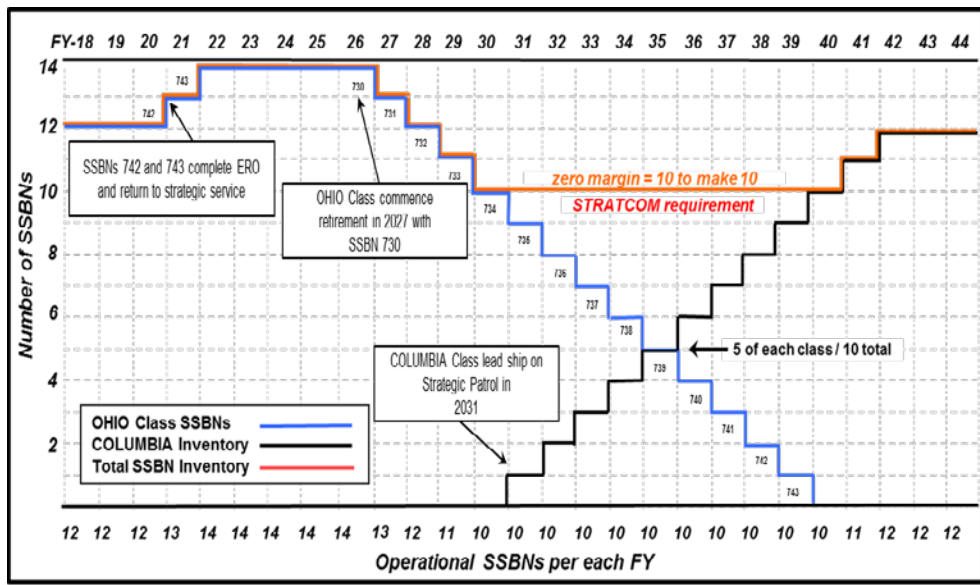
Critical Need for Recapitalization

Historical Sea Based Strategic Deterrent (SBSD) Force Structure



- Current OHIO Class is reaching the end of its operational life**
 - Designed in 1970, commissioned between 1984 and 1997, and will begin to retire in 2027
 - Operational life already extended from 30 years to an unprecedented 42 years
- Lead COLUMBIA construction must commence in 2021**
 - Maintains fleet of 10 operational SSBNs through transition with moderate risk
 - Lead ship unique treaty requirements must be completed

SSBN Force Structure:





COLUMBIA Class Submarine Program

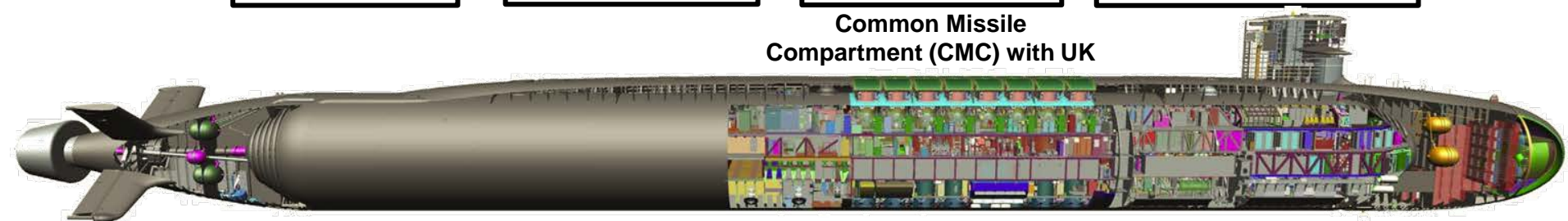
Electric Drive

40+ year Reactor

16 Missile Tubes

Modular Construction

**Common Missile
Compartment (CMC) with UK**



Specifications:

- **Length: 560 feet**
- **2 crews: 155 each**
- **42 year Service Life**
- **Armament:**
 - **D-5 Missile; MK48 Torpedo**

▪ **Builder:**

- **General Dynamics – Electric Boat, Groton, CT (Lead)**
- **Newport News Shipbuilding, Newport News, VA**
- **Construction work split**
 - Only nuclear capable U.S. Shipyards**
- **United Kingdom Partnership – CMC build**

Cost (FY 17)

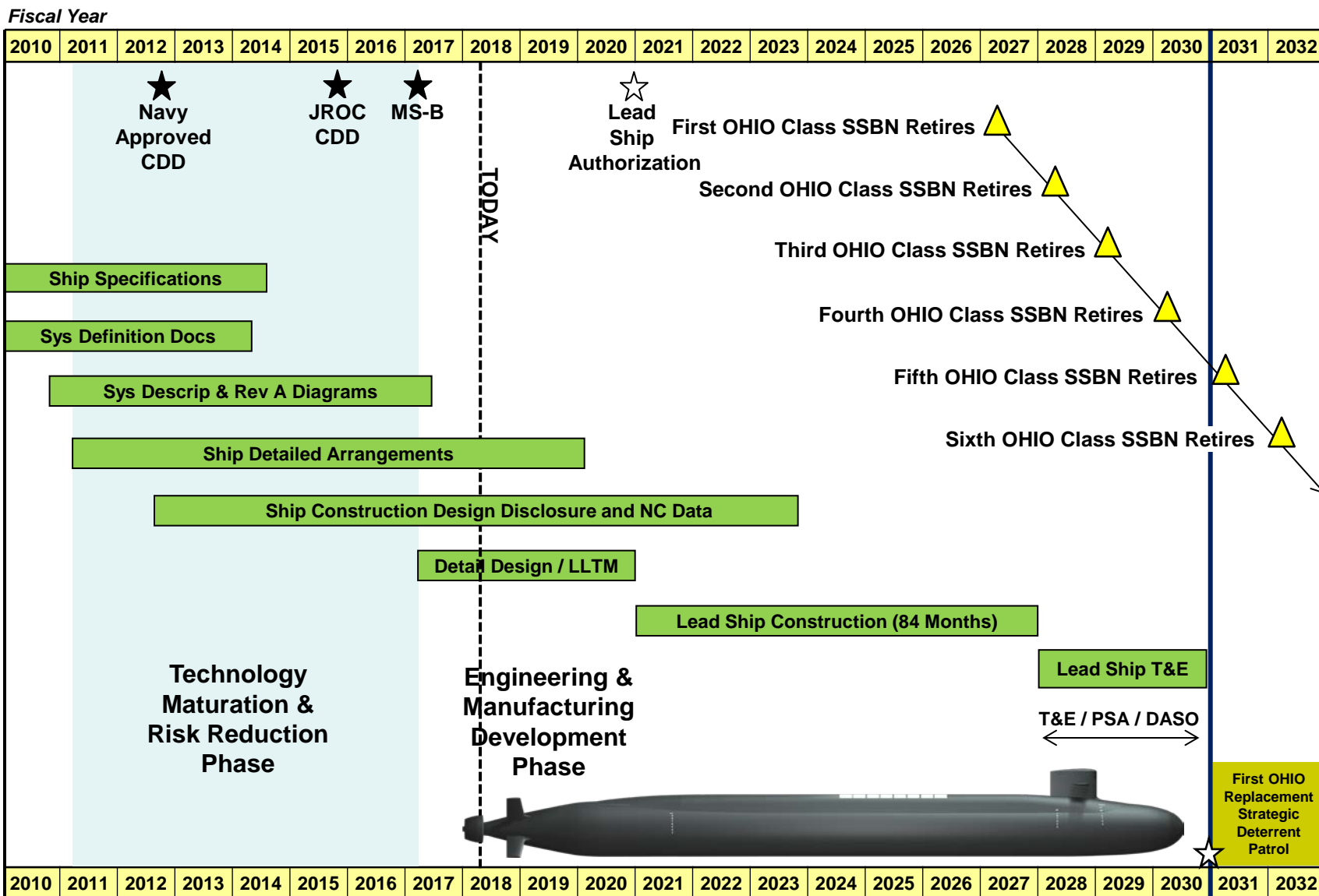
- **Average Procurement Unit Cost: \$7.2B (CY17\$)**
- **Total Program 1 to 2% of DoD budget**
(consistent with historical investment)



The Navy's #1 Priority requires industry support into the 2080s



COLUMBIA Class Schedule





First Article Quad Pack (FAQP) Construction

Automated Frame & Cylinder (AFC) Facility, Quonset Point, RI



✓ B' - Cylinder Shell Fabrication and Assembly First Use **Nov 2016**

✓ Start Cut/Form Frames **Aug 2016**



CY2016



✓ A' - Frame Fabrication and Assembly First Use **Aug 2016**



✓ C' - Frame to Shell Integration - Hull Cylinder First Use **Feb 2017**

Missile Tubes 5-8 (bare from vendor) Expected Receipt **2017-2018**



CY2017



✓ D' - Hull Cylinder Stacking First Use **May 2017**

✓ Pressure Hull Cylinders Stacked **Aug 2017**



R-Fixture



Missile Tube Outfitting **2017 - 2018**

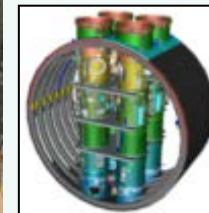
E-Fixture Usage **2018**



CY2018



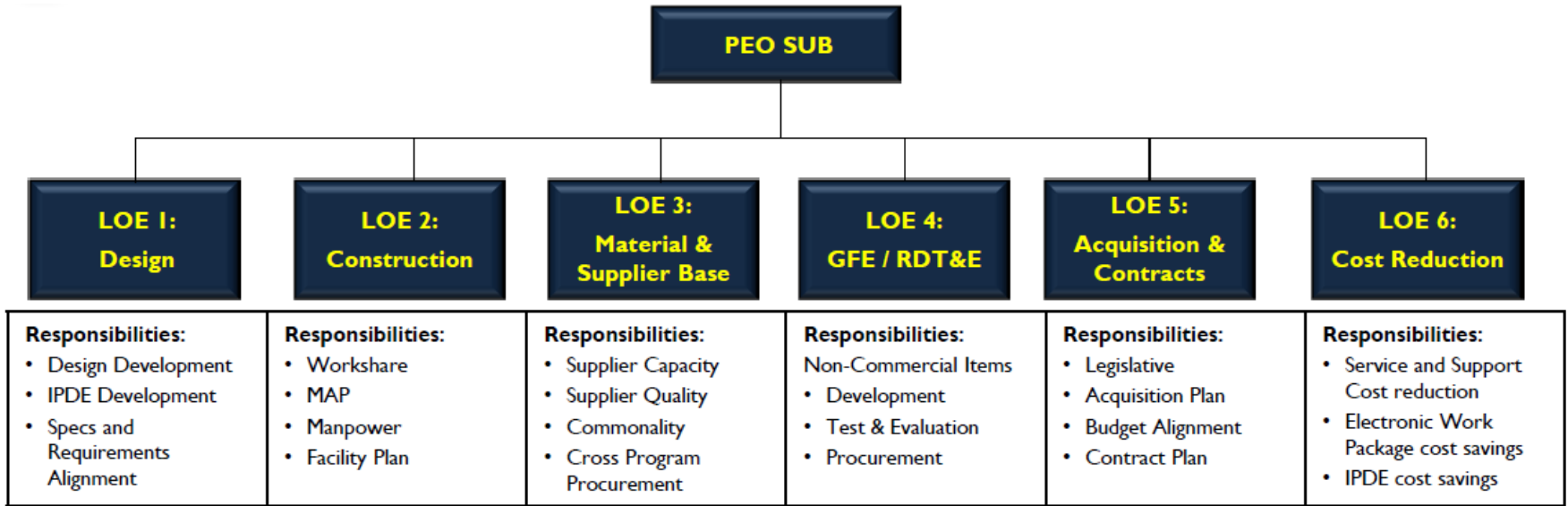
F-Fixture Usage **2018 - 2019**



FAQP Complete **2019**



Integrated Enterprise Plan (IEP)



- The IEP is critical to ensuring the ability to deliver COLUMBIA Class SSBNs on time
 - While continuing to deliver VIRGINIAs with VIRGINIA Payload Modules at 2 per year
 - While achieving savings across SSBN, SSN, and CVN programs