



# VIRGINIA Class Submarine Program Perspective



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# Why The VIRGINIA Class?



## Mission:

Develop and deploy a more affordable, nuclear-powered attack submarine with multi-mission capability and enhanced capabilities for performance in littoral areas. VIRGINIA Class submarines support five of the six Navy core maritime capabilities:



**Forward Presence**



**Power Projection**



**Deterrence**



**Maritime Security**



**Sea Control**

## Maritime Strategy at a Glance:

“A Cooperative Strategy for 21st Century Seapower” recognizes the economic links of the global system and how any disruption due to regional crises – man-made or natural – can adversely impact the U.S. economy and quality of life. This strategy charts a course for the Navy, Coast Guard, and Marine Corps to work collectively with each other and international partners to prevent these crises from occurring or reacting quickly should one occur to avoid negative impacts to the U.S.

## Mission Areas:

- Anti-Submarine Warfare (ASW)
- Anti-Surface Ship Warfare (SUW)
- Strike Warfare (STK)
- Covert Mine Warfare (MIW)
- Intelligence Surveillance and Reconnaissance (ISR), Intelligence and Warning (I&W) and Electronic Warfare (EW)
- Naval Special Warfare (NSW)
- Battlegroup Operations (BGO)



# Shipbuilder Teaming

## Co-Production at Three Facilities



**General Dynamics – Electric Boat (GDEB) (Prime Contractor) shares work with Huntington Ingalls Industries – Newport News Shipbuilding (HII-NNS)**

- Each contractor repetitively builds designated sections and modules
- Contractors alternate final assembly, outfitting, and delivery



**GDEB, Quonset Point, RI**  
Manufacturing



**Ship for Assembly**



**GDEB, Groton, CT**  
Assembly, Test and Delivery



**HII-NNS, VA**  
Assembly, Test and Delivery





# The VIRGINIA Class

## The Right Submarine for Today with Flexibility for the Future

### Blocks I (FY98–08)

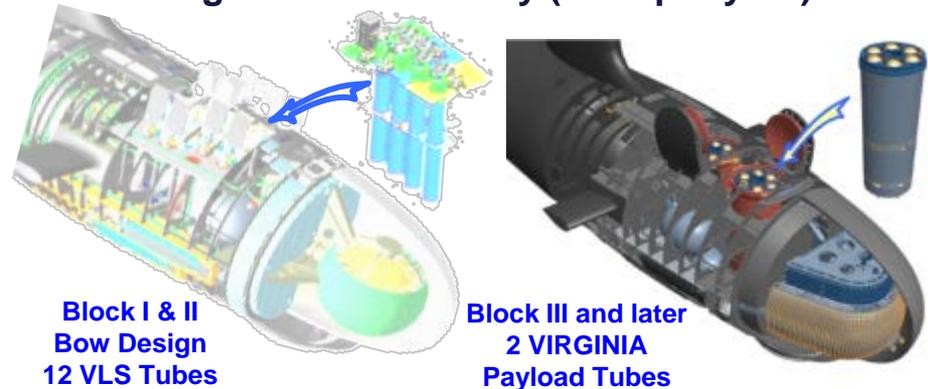
#### Quantum leap in platform capability



**10 Ships Delivered**

### Block III (FY09–13)

#### Design for Affordability (2 VA per year)



**Block I & II  
Bow Design  
12 VLS Tubes**

**Block III and later  
2 VIRGINIA  
Payload Tubes**

**8 Ships – 5 Delivered, 3 Under Construction**

### Block IV (SSNs (FY14–18)

#### RTOC enables increased $A_0$ per hull



**10 Ships – 9 Under Construction, 1 Under Contract**

### Block V and later (VPM)

#### Dramatically increase undersea influence effects



**In Design Phase, FY19 Construction Start**



# VIRGINIA Class SBIR Experience

## PEO SUB: >\$1.5B in Phase III contracts!

### Cardinal Engineering / Weidlinger Associates

Shock Analysis

### WWW Technologies

Ship Cptrol Architecture

### CCSM

#### Planning Systems Inc

GCCS Development & COTS Applications

#### DSR

Advanced Information Systems  
Software Migration Legacy Trainer  
Photonics Mast Workstation

#### Rite Solutions

Mission/engagement planning s/w  
Combat System of Future

### Progeny

Audio Signals  
Active Emissions  
Information Assurance  
AN/WLR-1 AI&R  
Manning Reduction

### Trident Systems

Mobile Computing for Submarine Applications

### TCNi

OA Concepts

### MIKEL

Combat System of the Future planning  
Mobile Range

### Chesapeake Science Corp.

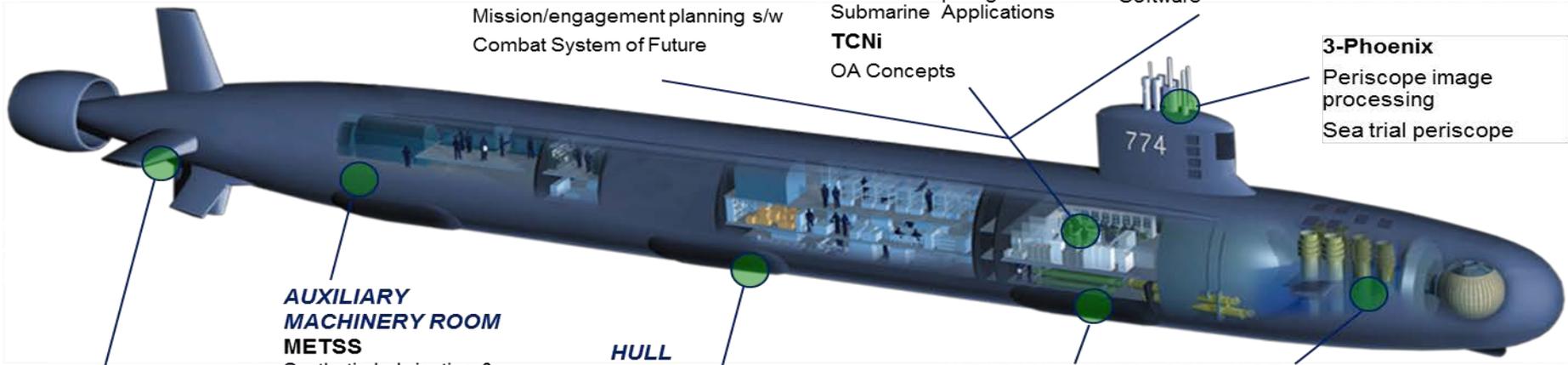
TSMS Telemetry

### Jackpine Technologies

Common Submarine Radio Room Software

### 3-Phoenix

Periscope image processing  
Sea trial periscope



### AUXILIARY MACHINERY ROOM METSS

Synthetic Lubricating & Hydraulic Oil

### STERN / PROPULSION

Towed Array Improvement  
Fiber Tow cables  
Fiber slip rings  
Heading sensors  
telemetry

Chesapeake Sciences Corp

### IDT

Auto Testing

### HULL

#### Compudrive

Electromechanical Actuators

#### Seeman Composites

Non-Autoclave Composite Systems and fairings

#### AAC

Acoustic sensors

### WEAPON LAUNCH, STOWAGE & HANDLING

#### Progeny

Tools for VME Interactive Acoustic Analysis Process

Multi Tube Weapon Simulator

Common Weapon Launcher

#### TRI

Composite Torpedo Room Temp Berthing and weapon handling cradles