Sealants of top-side fasteners help to protect the inside of ship from corrosion and keep fasteners in good condition for removal and re-use. The current application of sealant usually conforms to the standard of “the Bigger the Glob, the Better the Job”. However, this method wastes material, does not ensure 100% sealant coverage, and is time consuming. Corrosion seized bolts is a high cost item during maintenance avails. These issues and others can be resolved by the use of AM bolt head caps in lieu of sealant.

**Business Case:**
- Ship platforms are required to support multiple Combat System upgrades over the course of life.
- Corrosion control steals resources from the warfighter.
- Reduces polysulfide application time by \( \frac{3}{4} \).
- Increases the lifespan of protected fasteners.
- Reduces incidence of corrosion-seized fasteners.
- Inner cap designed with channels to eliminate air bubbles.
- Easy to remove yet durable enough to last years.
- Inner cap designed with channels to reduce air bubbles.

**Challenges:**
- Outdoor environmental test now in 7th year. No degradation in performance.
- Reduce material in future builds.
- Work toward a common design that can be scaled by shipyard labor for any size bolt head.
- Making Additive Manufacturing Bolt Head Caps a common 21st century Shipyard tool.
- Inclusion into Standard Items

**Transition:**
- Bringing Additive Manufacturing to the Waterfront!
- Design ready to print now.
- Easy to make in large numbers.
- Developed by the Gun Weapon System’s “Above Deck Sensor Unit” installation team.

**The Technology:**
- Stratasys 360mc printer
- ABS-M30