Non-Confidential Description - PSU No. 4150
“Cost-effective Method of Maritime Communications Using Raw Optical Fiber”

Keywords:
Fiber optic cable, undersea, communications, internet, naval

Links:
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Background
Cruise ships and offshore oil/gas platforms/ships demand high rate, continuous communications. Currently, satellite communications (SATCOM) serve these markets. High cost, slow latency SATCOM leads to excessive cost-to-quality-of-service metrics. A cheaper, easily/more rapidly deployed, and better quality communications solution for underway cruise ships, luxury yachts, and remoted oil/gas platforms is needed. Massive connectivity to platforms/ships/yachts far out at sea is a large market with high demand, and large current, on-going expenditures. Additionally, a strong desire is for these at-sea links to be secure/cyber-proof/inaccessible.

Invention Description
This invention discloses a low-cost, rapidly deployable, disposable/environmentally friendly, reliable, and secure link for at-sea underway and remote communications. Suspended Undersea Raw Fiber (SURF) creates an undersea massive comms-pipe that is raw optical fiber (low cost but extremely high rate), deployable from any ship/craft, and survives the harsh undersea environment without any negative environmental impact. SURF’s hair-thin glass strand (raw optical fiber) is safely suspended in the water column away from breakage threats that are concentrated near the surface or bottom. The suspended raw fiber is extremely difficult to find in the middle of the ocean; thus, anyone trying to tap into the cable is wasting time/money finding it, and then would realize that this fiber is disposable and is no longer utilized after its useful duration has expired. Suspended fiber has no interaction with biologics or boundary features that might break it.

Advantages/Applications
- Fast, easy, low cost install ($5k/100 miles) on nearly any ocean-going platform
- Nearly unlimited data rate (>10Gbps); nearly zero latency (0.0005 seconds per 100 miles)
- Minimal security risk
- Immediate cost savings to large and diverse markets

Patent Status
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