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News Release

OFS HOLLOW-CORE FIBER TO ENABLE NEXT GENERATION SENSORS

Avon, CT, 26 July 2013 OFS has developed a Hollow-Core Fiber (HCF) that exceeds state of the art performance and eliminates limitations which have inhibited applications of this potentially disruptive technology. The novel fiber design was developed by OFS Laboratories in the DARPA-funded Compact Ultra Stable Gyro for Absolute Reference (COUGAR) program, led by Honeywell International, Inc. The breakthrough fiber employs an air filled core surrounded by glass webbing, and is first to demonstrate improvement in three key characteristics critical for such applications as high precision fiber optic gyroscopes for inertial navigation.



Hollow-core fibers allow light to propagate through free space rather than a solid glass core, making them an ideal waveguide in theory. Earlier versions of HCF showed high propagation speeds, but they weren't able to do so in combination with the properties that make it useful for demanding applications. Certain limitations prevented the breakthrough performance promised. The fiber developed in this program overcomes these limitations and dramatically improves three critical performance enabling properties:

- Single-spatial-mode: breakthrough “PRISM” mechanism forces light to take only a single path, enabling higher bandwidth and lower noise over longer distances
- Low loss: light maintains power over longer distances
- Polarization control: the orientation of the light waves is fixed in the fiber, which is necessary for applications such as sensing, interferometry and secure communications

DARPA continues to work on integrating this new technology into gyroscopes.

Hollow-core fiber can be bent and coiled to tight bend radius while guiding light at speeds 30 percent faster than conventional fiber. In addition to high precision gyroscopes, there are many applications that will benefit from this technology. HCF is naturally radiation hardened and could find applications in space systems while other applications include low latency telecommunications or high performance computing systems and medical sensors. "OFS is proud to be a participant in this prestigious program and to have developed this breakthrough fiber" said Michael Fortin, Vice President of Marketing & Sales at OFS.

About OFS

OFS is a world-leading designer, manufacturer and provider of optical fiber, optical fiber cable, connectivity, FTTx and specialty photonics solutions. Our marketing, sales, manufacturing and research teams provide forward-looking, innovative products and solutions in areas including Telecommunications, Medicine, Industrial Automation, Sensing, Government, Aerospace and Defense applications. We provide reliable, cost effective optical solutions to enable our customers to meet the needs of today's and tomorrow's digital and energy consumers and businesses.

OFS' corporate lineage dates back to 1876 and includes technology powerhouses such as AT&T and Lucent Technologies. Today, OFS is owned by Furukawa Electric, a multi-billion dollar global leader in optical communications.

For more information, please visit www.ofsoptics.com.

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