



Luna Innovations Outfits Fiber on Smart Bridge in Italy

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Paves the way for Advanced Monitoring System and Digital Twin-Ready Capabilities

ROANOKE, Va.--(BUSINESS WIRE)--Aug. 26, 2020-- Luna Innovations Incorporated (NASDAQ: LUNA), a global leader in advanced fiber optic-based technology, today announced that it has partnered with CETENA and GHT Photonics to help design, build and implement a full-scale, fiber-optic structural health monitoring system for the recently re-opened Polcevera Viaduct bridge, which is a critical traffic artery for the city of Genoa in northern Italy.

The innovative bridge, which is over a kilometer long featuring 19 spans, is equipped with an advanced health monitoring system based on a network of Luna's HYPERION[®] measurement systems and advanced fiber optic sensors installed by Luna's integration partner GHT photonics. The system will monitor the structural response of the bridge, as well as conditions including the number and weight of vehicles, water stagnation, weather and other important variables helpful for bridge monitoring, control and inspection. The sensors installed on the infrastructure will capture the data necessary to create a digital twin of the bridge, that reproduces all the viaduct's physical characteristics, in real time.

"The re-building of this bridge was a national priority for Italy and stands as a symbol of progress for using our fiber in all smart infrastructures. Luna is proud to partner with disruptors like GHT Photonics and CETENA to work on this significant and historic project," said Scott Graeff, President and Chief Executive Officer of Luna Innovations. "Our alliance has helped pave the way for innovative growth in how we operate, inspect, monitor and manage all infrastructure in the future."

CETENA guided the development of groundbreaking software, Cymon, that connects to the Luna fiber-optic sensing system for data acquisition, analysis, and comparison with bridge design data and storage. "The goal of the structural monitoring system is to ensure that the condition of the bridge can be monitored closely, consistently and continuously," said Paolo Ceni, CEO of CETENA. "By assessing in real-time the bridge conditions and correlating them with load factors, any maintenance or operational needs will be addressed swiftly so the working performance and safety of the structure and passengers will be ensured. In the next stage, acquired data will offer the possibility to construct a digital twin of the bridge and to review structural loads and environmental factors with augmented reality (AR) technology, in which CETENA has acquired deep experience in the maritime and naval simulation field."

In order to meet the demanding requirements for micro seismic monitoring and operational modal analysis (OMA), Luna provided best-in-class fiber-optic interrogators and instrumented the entire bridge with an extensive network of fiber-optic accelerometers, the only optical solution available on the market that fit the project's OMA requirements. Combined with Luna's HYPERION[®] instrument platform, the [ps7500 family of accelerometers](#) can be easily distributed and synchronized with other sensors. The fully fiber-optic solution, which forms the basis of an internal "nerve" network for the structure, was easily deployed across the large structure and is now ready to be centrally operated, producing data critical to the health and maintenance of the structure for decades to come.

About Luna

Luna Innovations Incorporated (www.lunainc.com) is a leader in optical technology, providing unique capabilities in high-performance, fiber optic-based, test products for the telecommunications industry and distributed fiber optic-based sensing for the aerospace and automotive industries. Luna is organized into two business segments, which work closely together to turn ideas into products: a Lightwave segment and a Luna Labs segment. Luna's business model is designed to accelerate the process of bringing new and innovative technologies to market.

About CETENA

CETENA SpA (www.cetena.it), is the engineering and technical consultancy and R&D center of Fincantieri Group, operating both in the traditional fields of maritime and naval engineering (structures, hydrodynamics, safety, sea trials, ship performances, ...) and in transversal ones (monitoring systems, simulation and augmented reality environments, green energy technologies, air and underwater noise emission reduction). CETENA is organized into several Business Units working together to develop advanced consultancy services and products, based on knowledge, applied R&D, experimental laboratories and on-field experience.

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