UAV LOAD MONITORING

Todays Unmanned Aerial Vehicles (UAV's) operate in extreme conditions and a variety of missions, both civil and military. This associates with the need to monitor the Structural Health of the aircraft over their lifespan.

During their life, UAV's subject to stringent environmental challenges as extreme dynamic loading conditions, material corrosion and degradation, being significant aspects that determine the structural health. They affect the reliability and economic impact with regards to maintenance. Technobis FBG interrogator called ***X-Gator*** is integrated with UAV systems to add small footprint fiber sensing capability for the purpose of Structural Health Monitoring.

The ***X-Gator*** is a miniature autonomous FBG interrogator with integrated (optional) capabilities for data processing, wireless data transfer, on-board data storage, battery power, GPS, etc. For one particular project the capability of load sensing is applied in order to improve efficiency of aerolastically tailored wing structures. Subsequently the very same integrated fiber optic sensing system provides a smart sensing platform that allows multi-parameter monitoring capability for damage and impact detection mechanisms to the extent that supports prognostic health management of existing and future aircraft.

X-Gator

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