Ridgetop Group, Inc.
3580 West Ina Road
Tucson, AZ 85741
Phone: 520.742.3300
Fax: 520.544.3180
www.RidgetopGroup.com

FOR IMMEDIATE RELEASE

NASA Spinoff Publication Features Ridgetop Group's RotoSense Instrument

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Ridgetop Group's new RotoSense™ wireless rotational vibration sensor (RVS) product is featured in the latest release of the annual NASA Spinoff publication, which is produced by NASA's Office of the Chief Technologist to announce successful technologies developed by commercial companies in conjunction with NASA.

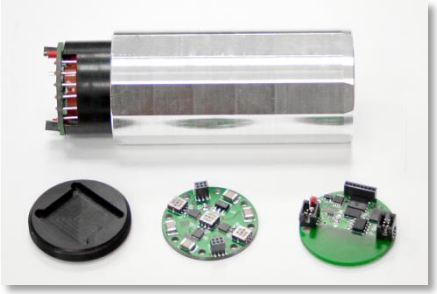
"Ridgetop's wireless MEMS accelerometer can gather quality data from spots inaccessible to the sensors typically employed today." – NASA Spinoff, full text at http://spinoff.nasa.gov/Spinoff2012/t_6.html.

Working under a Small Business Innovation Research (SBIR) contract with NASA's Glenn Research Center, Ridgetop developed an innovative, non-intrusive measurement solution for rotary drive systems such as gear trains and transmissions. The design incorporates sensitive microelectromechanical systems (MEMS) sensors and a wireless linkage that retrieves high-resolution acoustic signatures from deep within the harsh environment of an operating helicopter transmission. The sensors are placed very close to gear teeth, where measurements are taken. The acoustic data are sent wirelessly to a web-enabled collection hub where Ridgetop's algorithms process the data to reveal specific problems with the system, for prognostic purposes. The noise signature can be compared to known fault dictionary listings to pinpoint the problems associated with the specific signature.

This ability to predict impending failures results in an improvement in safety, performance, and maintenance costs for future generations of rotating components.

Examples of applications for RotoSense (two versions shown below) include:

- Sensing tool wear, chatter, or spindle imbalance in computer numerical control (CNC) applications
- Real-time monitoring of downhole drill vibration in oil and gas exploration applications
- Detecting prognostic vibrational signatures in rotating shafts or pinions to give early warning of gear tooth cracking or spalling in wind turbines and transmissions
- Automotive and industrial equipment applications



Sensor for high-speed pinion gear location

Sensor for low-speed sun gear location

The sensor, which is designed to withstand high operating temperatures up to 104 °C (219 °F), will help researchers perform dynamic analysis of gear interaction and develop improved designs for gear trains and their components.

Ridgetop has been providing technology and services in the predictive diagnostics field for many years, says Doug Goodman, Ridgetop Group CEO. “We have found that there are often precursor signatures of failure that can be extracted from the system being observed. These signatures, when processed by algorithms, allow for an accurate prediction of how much useful life is remaining.” Having signatures derived from the performance of equipment not only improves diagnostic capabilities but can change the way rotorcraft are maintained. Goodman says such data support “condition-based maintenance” strategies that focus maintenance on demonstrated need, as opposed to the traditional and costly method of scheduling maintenance based on an arbitrary number of flight hours between service intervals.

For more information about how RotoSense can benefit your application, contact Ridgetop Group at 520-742-3300 or by email at info@ridgetopgroup.com.

About Ridgetop Group

Based in Tucson, Arizona, Ridgetop Group is a world leader in providing advanced electronic prognostics and health management (PHM) solutions, semiconductors for harsh environments, and built-in self-test (BIST) solutions for critical applications. The company maintains business divisions for advanced radiation-hardened microelectronics and electronic PHM solutions for critical electronic sensing and control applications. Founded in 2000, Ridgetop has built an impressive list of aerospace, automotive, and medical systems customers in North America, Europe, and Asia. For more information, please visit our website at **www.RidgetopGroup.com**.

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