



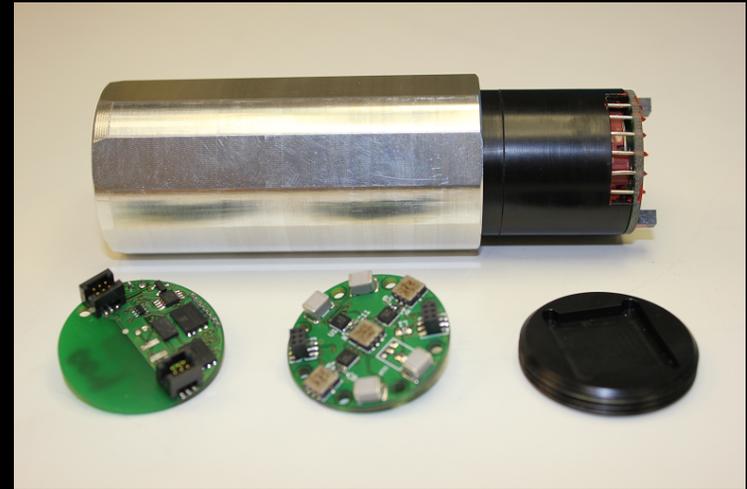
Wireless Sensors Pinpoint Rotorcraft Troubles

Glenn Research Center

**Ridgetop Group Inc.
Tucson, AZ**

NASA Technology

- ◆ While more maneuverable than fixed-wing aircraft, helicopters, with their rotors in constant heavy vibration, require more persistent upkeep.
- ◆ Retrieving data from deep within operating rotorcraft transmissions has been an impediment to finding faults or other issues in the system.



Technology Transfer

- ◆ With a Small Business Innovation (SBIR) contract awarded by Glenn, Ridgetop developed wireless microelectromechanical sensors (MEMS) that can probe deeper than conventional tools.
- ◆ Sensors are placed very close to gear teeth, where measurements are taken for use in algorithms that can reveal specific problems with the aircraft.

Benefits

- ◆ The sensor data is sent to a hub that processes them into a noise signature, which is compared to a fault dictionary listing the transmission problems associated with that signature.
- ◆ The sensor technology has potential applications for the oil drilling, automotive, and industrial equipment sectors.