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## **PRESS RELEASE**

For Immediate Release

### **GLOBAL TECHNOLOGY CONNECTION AWARDED US AIR FORCE PROGRAM ON VALVE HEALTH MONITORING**

Atlanta, GA. January 5, 2011 – Global Technology Connection, Inc., (GTC) in collaboration with academic partners and valve actuator manufacturers addresses valve diagnostic and prognostics by proposing a Valve Prognostic Health Monitoring System (VPHMS) that detects and identifies valve incipient failure modes and estimates valve remaining useful life from sensor data. Hydraulically actuated butterfly valves will be considered because they are commonly used in industry. Other valve types will be considered during latter phases of the program. Valve rotary position, oil temperature, and differential pressure across servo valve ports leading to actuator, and hydraulic actuator linear position will provide the minimal expected sensing arrangement while other sensing capabilities will be considered. Valve failure modes that will be primarily examined are seal failures, sensor failures, loose linkages, worn bearings, and degraded/contaminated hydraulic fluids. Other failure modes will also be investigated in latter portions of the program. The valve data analysis approach will include anomaly detection, failure identification, and remain useful life estimation. The anomaly detection methodology will use a network to determine if the valve system has deviated from normal behavior. Valve failures will be identified through set of condition indicator features and a fuzzy logic expert rulebase. The prognostics approach will utilize a trended anomaly detection output along with remaining useful life (RUL) threshold governed by the identified failure to predict the time-to-maintenance for a valve

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