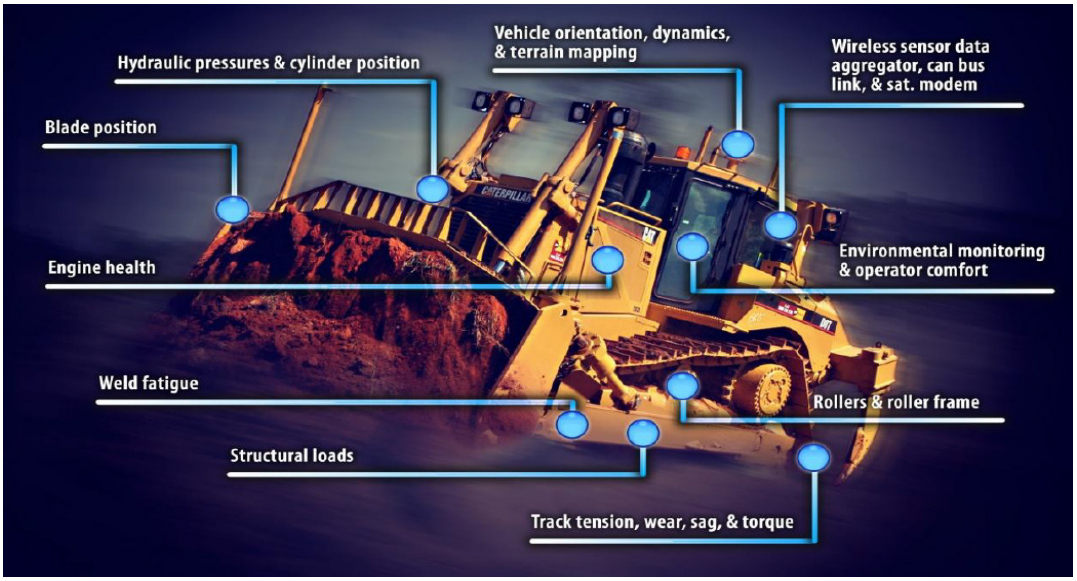
Tracked Vehicle Health Monitoring

MicroStrain Off-Road Ground Vehicle Monitoring Application



Wireless Benefits

- Easy retrofit of existing fleet
- Extended component life
- Improved maintenance schedule
- Minimize unplanned downtime
- Reduce operating expense
- Actionable alerts
- Embedded analytics

Embedded Sensing Solutions: Off-Highway ground vehicles are exposed to harsh and variable operating conditions. Understanding the exoposure of individual vehicles is critical for maximizing up-time and optimizing fleet maintenance practices. Tracked ground vehicles such as bulldozers, excavators and cranes are especialy vulnerable to wear and misalignment.

Microstrain sensor systems provide embedded wireless solutions for monitoring health and usage including track tension, wear, sag, torque, structural loads, weld fatigue, engine health, hydraulic pressure and cylinder position, vehicle orientation dynamics, terrain mapping, and environmental monitoring. Our wireless sensor network is easily installed, last for years without battery replacement, and provides reliable health information on distributed components, with Lossless Xtended Range Sensing (LXRS) communication.

End-To-End Monitoring: Embedded analytics and customizable alerts allow users to define key thresholds and receive automated messages about the health of a vehicle and its components. As a result, operators can schedule maintenance and anticipate part replacement before failures occur for optimized fleet costs.

Remote data analysis - using SensorCloud with MathEngine analytics tool, engineers across the globe are able to review the vibration data.

Parker

ENGINEERING YOUR SUCCESS

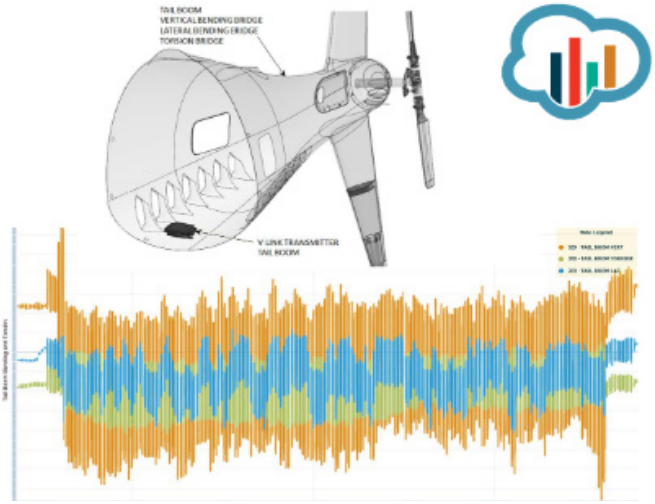
MicroStrain Application note

Wireless Off-Road Ground Vehicle Monitoring Application

Connect: The SensorCloud™ platform can be used to monitor fleets of vehicles instrumented with sensor networks. Each vehicles' network consists of an onboard wireless data aggregator with cellular connectivity, along with multiple wireless sensor nodes designed tomonitor strain and structural fatigue.

Monitor: Once received by the onboard data aggregator, sensor data is cached locally, and automatically uploaded to the SensorCloud platform over the cellular link. Vehicle health data is immediately accessible to a globally distributed engineering team. Key health parameters are monitored with SensorCloud's flexible alerting rules, issuing realtime alerts to the manufacturer and asset owners.

Analyze: Using SensorCloud's embedded MathEngine data analytics tool, engineers are able to sift through large scale historical data sets, uncovering key insights for optimizing machine life across the fleet.



Machine Monitoring Benefits:

- Reduce unplanned downtime for critical assets
- Manage operator usage and safety
- share data with remote colleagues immediately
- Engage customers with custom branded interfaces and proactive maintenance recommendations
- Enable new service based revenue streams.

Features:

- Big data time-series visualization
- Realtime data access, alerting & role-based data sharing
- Powerful data analytics tool
- White-label branding, embeddable widgets & custom portals.

Parker Hannifin Corporation
MicroStrain Sensing
459 Hurricane Lane suite 102
Williston, VT 05495
phone 802 862 6629
Email: sensing_sales@LORD.com
www.microstrain.com
www.parker.com

ENGINEERING YOUR SUCCESS