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## **Perpetuum PMG RAIL Vibration Energy Harvesters for rail vehicles are the enabling technology for a new generation of train monitoring**

Austin, TX – November 21, 2011 – Perpetuum has extended its range of Vibration Energy Harvesters to enable a new generation of train monitoring. The products can cover a wide range of power outputs and are designed to meet the different requirements of both passenger trains and freight wagons. Providing power at a very low installed cost on passenger train bogies and freight wagons, this technology now makes wireless installation possible with a massive cost savings and improved reliability compared with hard wiring or the high cost of installing axle generators in freight wagons.

Perpetuum's Vibration Energy Harvesters are a "fit and forget" solution that eliminates the cost and reliability issues of changing batteries.

Perpetuum recently announced successful trials which demonstrated the ability to power monitoring of bearings in everything from high speed trains to freight wagons.

The range of PMG RAIL products can now be tailored to provide ample power for a wide range of monitoring and wireless data transmission:

### Monitoring and Sensing

- Bearing Monitoring
- GPS Location Tracking
- Hazardous Cargo Monitoring (Temperature, Pressure, "Door Open")
- Wheel Condition Monitoring (Flats, Cracks)
- Derailment
- Braking System Monitoring

### Communications

- Low Power Wireless (802.15.4 networks on vehicles and along trains)
- Low Power 802.11
- GPRS/GSM/GSM-R
- Intermittent Satcoms

### **About Perpetuum**

Perpetuum ([www.perpetuum.com](http://www.perpetuum.com)) is an award-winning designer and manufacturer of the world's most powerful electro-magnetic Vibration Energy Harvesters, enabling the growth of Wireless Sensor Nodes by providing maintenance-free, fit and forget extended power solutions. Powerful, reliable, robust and hazardous-zone certified, the Perpetuum PMG is the leading choice of global OEM WSN manufacturers and Automation Leaders.

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