



Technology Commercialization Opportunity

AHM - Asset Health Monitoring Application Suite

Technology Description

The Asset Health Management (AHM) Suite of technology provides a framework that can be quickly configured, extended, and customized to provide data monitoring, telemetry and processing (diagnostics and prognostics) for specific applications.

Anything that has large amounts of sensor data is a good candidate for the application of this technology. Examples include assets such as, vehicles, large engines and generators, buildings, and data centers.

The system is capable of storing data both in an RIT proprietary format (AHM Streaming Database) providing higher performance and reduced storage requirements, or a relational (SQL) database such as MySQL and Microsoft SQL Server, allowing for easier integration with existing data analysis tools and IT infrastructure.

AHM holds the promise of lowering operational costs and improving reliability by:

- Providing an overview of the health of all assets and asset readiness, highlighting automatically issues that need to be resolved in real-time.
- Enabling the switch from reactive to proactive maintenance, based on usage and wear patterns.
- Supporting lifecycle decisions (repair vs. replace) through operating history.

The AHM Suite is comprised of the following components:

- Data Model to represent high-speed (>1000hz) and low-speed signals, measurements, operating modes, alerts, cumulative values, and fault codes.
- The AHM Processor Core is a framework for reading sensor data and processing it with flexible and highly configurable functions.
- Relational Database (SQL) Version of Data Model with the Maintenance Data Synchronizer tool to copy data from monitored assets into a single multi-asset master database.
- AHM Streaming Database stores data significantly faster and smaller than SQL and is especially suited for embedded monitoring. The Platform Data Synchronizer can translate data from this format into the standard SQL format.
- Maintainer's Graphical User Interface (MGUI) tool displays collected and calculated data from the SQL and Streaming Database formats, or live data from the AHM Processor Core.

Keywords: Building Management, Smart Buildings, Maintenance, Vehicle Monitoring, Diagnostics, Prognostics, Telematics, J1939, J1708, J1587, CAN, J1979, OBD-II, BACnet, Modbus

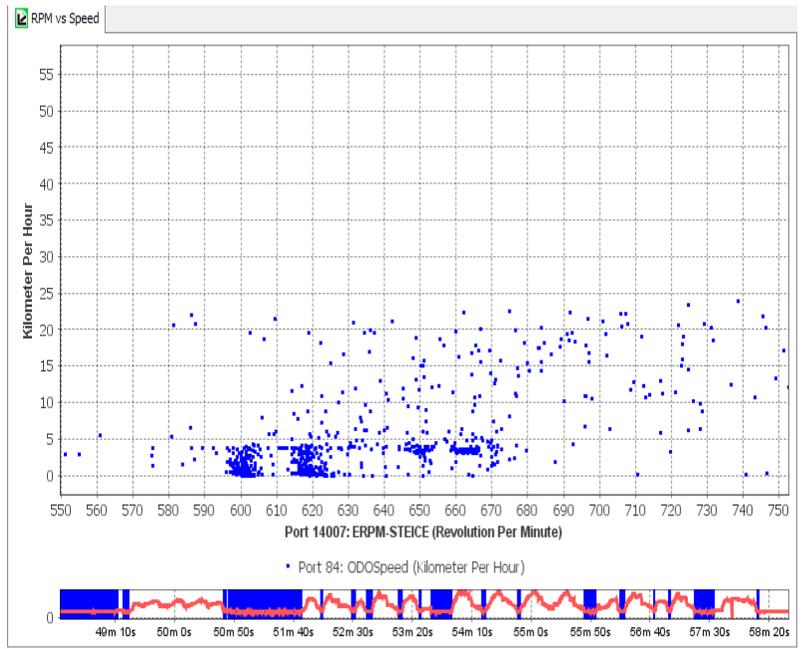
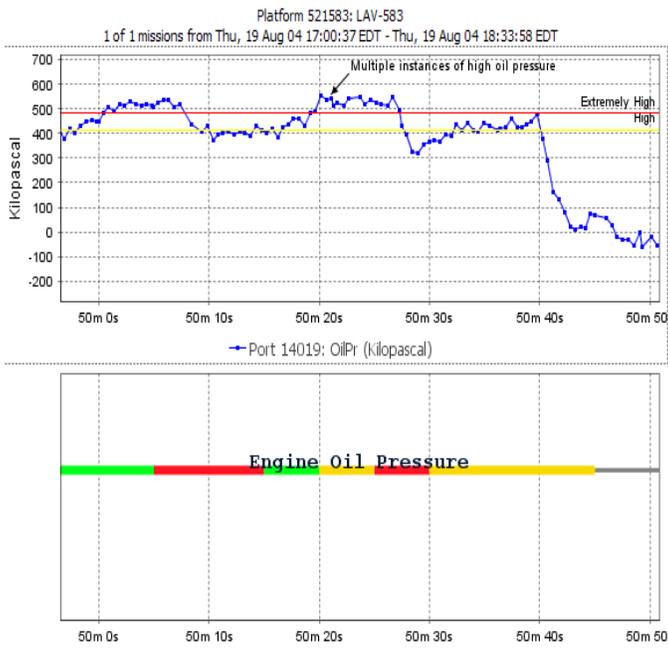
Technology Readiness

The system is mature and has been deployed in both military and commercial applications. Existing sensor network integrations exist for heavy duty vehicles (J1939 and J1587) as well as light duty vehicles (J1979/OBD-II). Support for BACnet and Modbus for building monitoring is a current focus.

The technology is at the following stage:

Idea	Concept	Prototype	Alpha Version	Beta Version	Released
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The exception is the streaming database and Platform Data Synchronizer components, which are at the beta level of readiness.



Example screens from the MGUI tool showing collected data from a vehicle application

Target Customers and Emerging Applications

- Freight and Transportation Industry
- Building Management Systems
- Farm Equipment (Tractors)
- Power Generation

Intellectual Property

- Patent US8175848: *Data processing systems and methods*
- Patent US7925472: *Methods for asset health management and systems thereof*
- AHM Data Model
- AHM Processing Core
 - AppLib (common diagnostic algorithms)
 - Sensor network adapters i.e. CAN/J1938; J1979; J1708
- AHM Streaming Database
 - Platform Data Receiver
 - Platform Data Synchronizer
- Relational Database (SQL) Version of Data Model (single and multi-asset)
 - SQL Access Library
 - Maintenance Data Synchronizer

Opportunity

RIT's Intellectual Property Management Office (IPMO) is interested in working with those parties who are qualified and interested in the commercialization of this intellectual property. Arrangement types include licensing the application to existing or new organizations that have expertise in the field or related fields.

RIT is available to customize the system for specific user requirements, by adapting the system to the existing sensor network or data collection system, and configuring pre-built algorithms or developing new custom algorithms to process the data. RIT can also train software developers to configure and customize the system.

Contact

Those interested in learning more about this opportunity should contact:

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