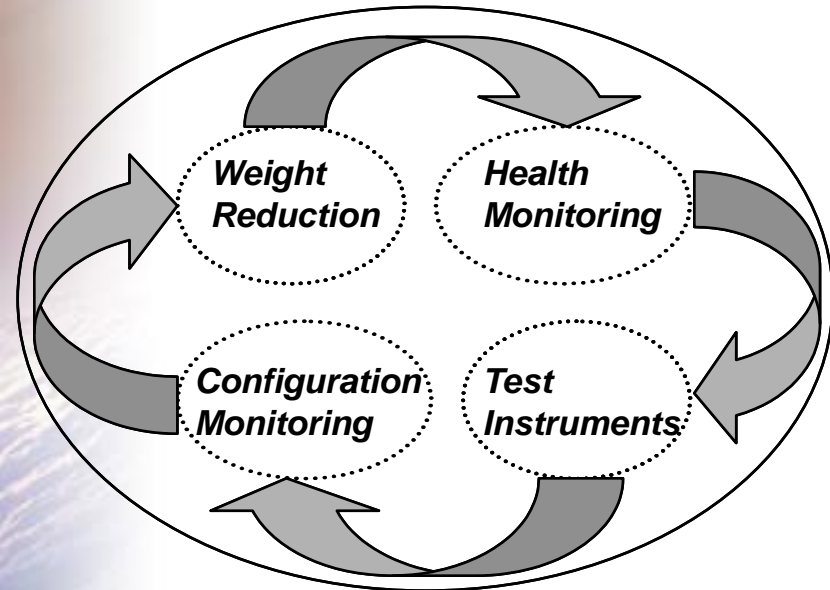


Embedded Vehicle Health Management & Prognostics



Management Sciences Inc.
6022 Constitution Ave NE
Albuquerque, NM 87110
(505) 255 8611

Management Sciences, Inc.

- Woman Owned Small Business
- Location: Albuquerque, NM
- Business Strategy: Teaming
- Focus Area: Embedded Diagnostic & Prognostic Health Management Systems
- Products:
 - Cognitive Processing in Real Time
 - Embedded Instrumentation
 - Data Centric Processing



Problem Addressed

- Vehicle health monitoring with off board analyses at a data center does not provide timely or accurate information on equipment readiness
- Maintenance is not optimized to support the operations
- Excessive Logistics required to make up for problems

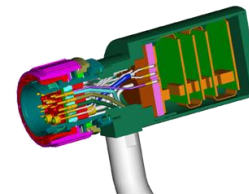
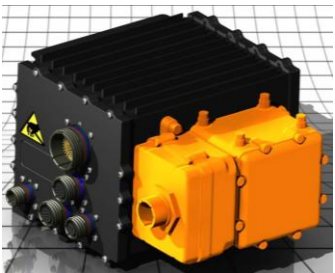
Current SBIR Contracts

- MDA Phase I “Smart Missile Connector”
- MDA Phase II Enhancement
 - “Data Driven Diagnostics” of PATRIOT II ATM
- US Army SBIR Commercialization Pilot Program
 - “Embedded diagnostics for combat vehicles”
- “NAVAIR SBIR Phase II – Embedable Programmable Instrumentation Chipset for in-situ diagnostics and prognostics”
 - Joint Strike Fighter
 - PMA-209 (Air Combat Electronics)
 - PMA-257 (AV-8B)
 - PMA-261 (H-53)
- MARINE CORPS – Embedded Diagnostics of LAV
- USAF SBIR Ph I – Diagnostic Models for of Space Platforms

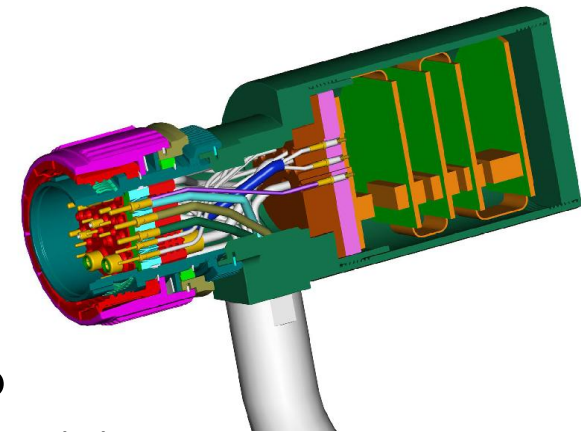


MSI's Sentient Solution

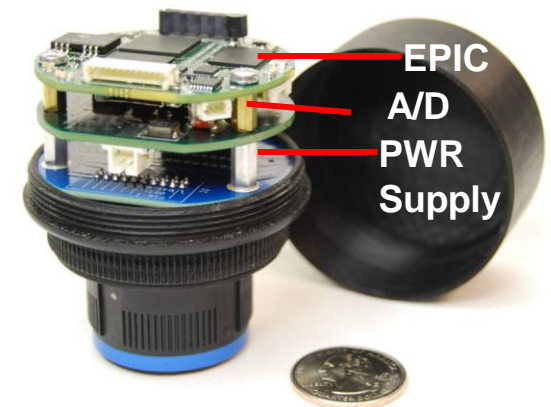
- Unified Software Architecture
 - Sentient Rules Engine
 - ❖ Business Rules
 - ❖ Bayesian Inferencing on Hidden States
- Scalable Hardware Architectures
 - powerPC
 - XScale and ARM9
 - Desktop development support



“Smart” Connectors



- **Deutsch D38999 series 3 or 26482 mil-spec wiring connector**
- **Inserts at convenient points in the wiring, e.g. where wiring attach to or is nearby a flight-critical component.**
- **Sentient Guardian embedded programmable instrumentation circuit (EPIC) and FLASH Memory (SD Chips)**
- **Programmable “business rules” engine for health and condition monitoring of systems, components and wiring.**
- **32 channel A/D digitizer module**
- **Interfaces to data bus**
- **In-situ component monitoring, diagnostics and prognostics**
- **Embedded test instrumentation**



Features and Benefits

Features	Benefits
Stand-Alone WRAs and Embedded Processors	Scalable processors to meet application requirements
Low to Moderate Power	Use in confined spaces with minimal impact to vehicle
Environmentally qualified (MIL-STD-810)	Applicable to many mission environments
Sentient Processing Rules Engine	Easily adapted processing functionality (Graphically Developed)
Bayesian Inferencing	Probabilistic Reasoning on current health
Network and Bus interfaces	Integration with Vehicle data and networkability

