

# ADSSS<sup>®</sup>

## CONDITION BASED MAINTENANCE

### FEATURES

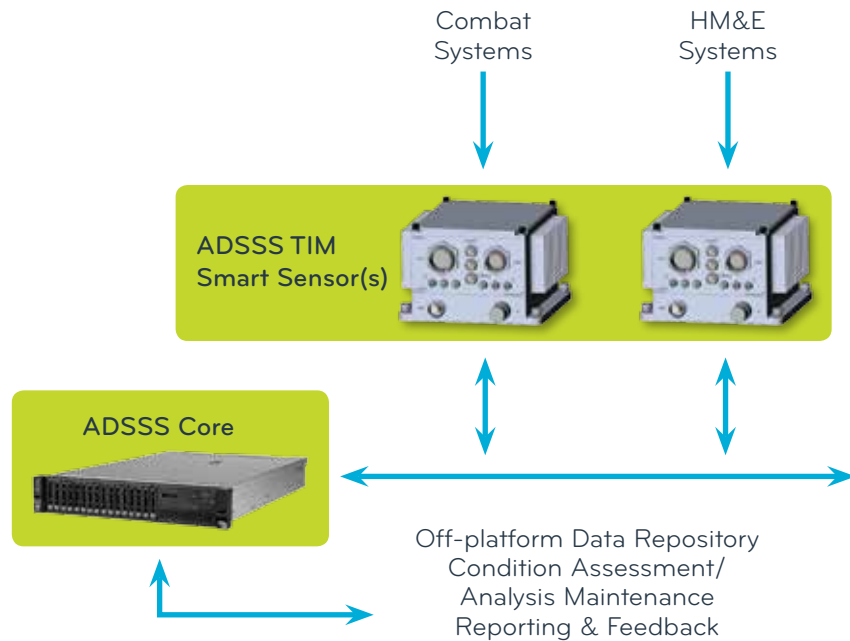
- Automated real-time data acquisition
- Real-time monitoring
- Open architecture
- Industry standard technologies
- Information Assurance (IA) compliant
- Scalable to any size system
- Intelligent alert notifications
- Simplified logistics support
- Data standards compliance
- Security conscience system design

### APPLICATIONS

- Condition Based Maintenance (CBM) Systems
- Health Management Systems (HMS)
- Predictive Anticipatory Maintenance
- Smart Sensor Applications
- Maintenance Solutions

The ADEPT<sup>®</sup> Distance Support Sensor Suite (ADSSS) system is an advanced, comprehensive smart sensor suite that implements Condition Based Maintenance (CBM) and Remote Monitoring. It provides an open architecture approach with industry standard hardware and security conscience compliant software to acquire and process system operational and maintenance data.

ADSSS's concept of operations is geared towards unattended operation. Leveraging Mikros Systems' ADEPT product line of preventive maintenance tools, ADSSS fully automates the capture of system operation, environment and maintenance data. Target Interface Modules (TIMs) are used to capture system data parameters using an array of standard hardware interfaces. Data collected by TIMs is transferred to the ADSSS Core which serves as a collection point, local data storage, and event alert notification hub. The ADSSS Core then transfers data off-platform to a data repository to support further analysis, maintenance reporting and feedback.



## ADSSS Condition Based Maintenance

### BENEFITS

- Improved Operational Availability (Ao)
- Increased System Readiness
- Increased System Reliability
- Reduces Mean Time to Recover (MTTR)
- Reduces Mean Logistics Delay (MLDT)
- Remote Monitoring
- Remote Support Capable
- Maximized use of existing data, can use data interfaces and sensors already in place
- Augments existing maintenance systems



### OPEN ARCHITECTURE

ADSSS implements a comprehensive open architecture hardware, network, software and data design. The TIM hardware uses a rugged, industrial, watertight and fanless heat dissipation enclosure, using industry standard PCIe/104 hardware with interfaces for Ethernet, RS-232/422/485 Serial, securitywise USB, and data bus connection capability. Commercial-off-the-shelf sensors can be connected as needed, as well as Mini PCIe peripherals. The ADSSS communication network is based on either TCP/IP or UDP standards with robust publisher/subscriber message delivery. All ADSSS software is Linux and Java based for security purposes. Data collection is controlled through a configurable test script so that software changes are not needed to handle data changes or include new data points as they become available. All data is stored in eXtensible Markup Language (XML) format using the IEEE SIMICA standard.

### ALERT NOTIFICATIONS

ADSSS monitors key parameters and sends local e-mail alert notifications when parameters move out of tolerance. Alerts are configurable and can be sent via e-mail or other message systems.

### SECURITY

ADSSS is Information Assurance (IA) compliant. ADSSS uses the Linux platform

and provides automated distribution methods for IA updates. ADSSS is capable of residing on a variety of secure networks including the U.S. Navy Total Ship Computing Environment (TSCE). ADSSS and all of its software components are certified U.S. Navy applications. TIM hardware can be configured for passive one-way monitoring to eliminate any possible interaction with target systems, a real plus for combat system certification.

### DATA ANALYSIS

ADSSS truly provides the PLUS in CBM systems. It pairs seamlessly with Mikros Systems' Prognostics Framework® analysis software to provide accurate, powerful condition assessment. The Prognostics Framework can be embedded on-platform on the ADSSS Core to perform real-time prognostics, diagnostics and status monitoring, or utilized off-platform as a processing arm of all data collected by the ADSSS smart sensor suite.

### QUALITY

Mikros Systems is certified under the NAVSEA Technical Specification 9090-310F, Appendix C and Fiscal Year 2015 NAVSEA Standard Item 009-04. Mikros Systems is ISO 9001:2008 certified. Our quality management system ensures our software and hardware meet our customer's requirements and will be reliable and secure.