

Weapon Systems and Munitions Readiness, & Asset Visibility

Readiness assessments assure that adequate weapon systems are produced and put into the warfighter's hands. These assessments involve design actions that consider short term reliability, long term durability and long term storage. Asset visibility impacts readiness by providing actionable information at all times about the location, quantity and state of their material assets and personnel.

Total asset visibility facilitates the capability to act upon that information to improve overall performance of DoD's logistics practices. Users, customers, and process owners are provided timely and accurate information on the location, movement, status, and identity of units, personnel, equipment and supplies.

Technologies include:

- Structural Health Monitoring – Health monitoring programs have been implemented on many aircraft fleets. Realizing the full benefits of a health monitoring program, it is essential that a more integrated approach is necessary.
- Real-time data acquisition and fusion techniques
- Integrating real-time data into mission planning system
- Ops-Logistics functions to determine future system support requirements
- Incorporating a health management architecture into flight critical subsystems while minimizing impact to vehicle performance
- Rapidly verifying and validating mission and flight safety embedded software architectures with mixed-criticality
- Integrating real-time state awareness data with flight critical reasoners
- Reducing/eliminating the need for redundancy management via reliable flight critical subsystems
- Increased reliability, durability and reduced maintenance for all systems and components
- Embedded prognostics and diagnostics are being developed for dynamic monitoring of critical vehicle component and system "health" and reporting equipment status before a failure occurs
- Robust embedded high temperature sensors
- Physics-based system performance and health diagnostic models for virtual sensing
- Prognostics and diagnostics modeling, sensors, and signal processing

Learn how WSTIAC can assist you within this key strategic area:

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