Five Technologies that can Reduce

Maintenance and Repair Costs

DoD's material maintenance operations support a wide range of weapons systems including about 239 ships, 15,000 aircraft/helicopters, 900 strategic missiles, and 356,000 ground combat and tactical vehicles.

Because the DoD's maintenance needs are complex and unpredictable, there is a need for advanced manufacturing processes, techniques, and technology that can reduce the associated time and costs to meet required readiness levels. These five technologies make a big impact.

Additive Manufacturing

Replacement parts, tooling, and fixtures can be quickly designed, replicated, customized, and manufactured at remote depots or the point of use

Integrated Computational Materials Engineering (ICME)

Coupled with manufacturing processing data, ICME enables a reduction in cost, cycle time, and technology insertion risks through proper material selection at the onset of design

Dissimilar Materials Joining

The ability to effect repairs using dissimilar materials with more desirable properties allows for enhanced performance and lifecycle extension

Advanced Nondestructive Evaluation (NDE)

A variety of new nondestructive testing technologies enable fast and reliable testing and inspection which reduce maintenance downtime

Probabilistic Modeling

By evaluating material, process, and design performance capabilities prior to implementation, testing and development costs can be minimized

About EWI In addition to the above technologies, EWI has supported federal programs with many additional advanced manufacturing technologies, including engineering critical analysis, modeling and simulation, design for manufacturing, automation, manufacturing assistance, professional training, and knowledge-based quality and optimization

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