



Sustainment Engineering

*Increasing Readiness and
Reducing Life Cycle Costs*



KBR is a leading provider of AS9100D and ISO 9001:2015-certified sustainment engineering services to the Department of Defense and other federal agencies and foreign allies. The solutions KBR develops and implements enhance mission capability. KBR's mission is to extend the life of legacy systems, reduce life cycle costs and increase availability and reliability.

AREAS OF EXPERTISE

KBR's work directly addresses key performance attributes for reliability, maintainability and supply chain performance at functional levels that improve operational availability, optimize life cycle costs and increase overall effectiveness.

LOGISTICS ENGINEERING AND ANALYSES: KBR supports a life cycle approach to all 12 of the Defense Acquisition University (DAU) Integrated Product Support (IPS) Elements through data collection, system engineering analyses, modeling and simulation. This enables KBR to comprehensively analyze trends, system failures, failure rates, ownership cost, supply shortages, repair deficiencies and delays, obsolescence and other factors impacting sustainment.

RELIABILITY AND MAINTAINABILITY (R&M) ENGINEERING: KBR experts include Certified Maintenance and Reliability Professionals, analysts and instructors, Six Sigma Black Belts and American Society for Quality (ASQ) certified reliability engineers. Our approach is based on data collection and analyses that quantify system performance and identify potential reliability and service life improvements, as well as support Condition-Based Maintenance Plus (CBM+) tasking. KBR applies model-based approaches, such as discrete event simulation and functional cognitive mapping, to assess performance for reliability, availability, and maintainability (RAM), safety and risk assessment (SRA), and prognostics and health management (PHM).

ADVANCED ANALYTICS, PREDICTIVE MAINTENANCE AND SOFTWARE: KBR IT, cyber and software solutions provide customers with critical information to understand and sustain their environments. KBR's core competencies include providing tools and data that identify failures, sustainment issues (including component availability), and improve maintenance procedures. KBR uses advanced machine learning, data mining algorithms and statistical methods to develop predictive models and perform trade space analysis. KBR's proven successful approach is to apply technologies using ISO and other quality-based diagnostic and prognostic processes that it designs, develops and tests to measure characteristics that indicate deterioration or failure progression. These characteristics can include vibration, wear and performance. KBR solutions achieve high fidelity results because of the ability to expertly integrate field data sources, such as DECKPLATE and REMIS, with its engineering domain expertise. KBR's analyses and models also include a robust sensitivity analysis to evaluate and address uncertainty and risk.

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DMSMS AND OBSOLESCENCE: KBR is AS9100D-certified for engineering design, prototyping through production of components, circuit cards, cables, enclosures and systems. KBR has IPC J-STD-001 and IPC/WHMA A-620 certified instructors and personnel at its laboratory sites who apply digital engineering and model-based systems engineering to reverse engineer, redesign or develop new solutions. KBR manages complex development processes including all aspects of risk analysis, design reviews and configuration management (CM) for a wide range of aging and modern weapons systems. Proven in-house expertise includes providing parts, systems, rapid prototyping, additive manufacturing and multi-material fabrication.

NON-DESTRUCTIVE INSPECTION/TESTING (NDI/NDT): Certified professionals apply a myriad of NDI technologies to develop inspections for corrosion, aircraft structures and complex aircraft engine parts. The KBR-developed Eddy Current Inspection System (ECIS) performs precision surface and subsurface crack and defect detection on a variety of engine components. ECIS uses an eight-axis, fully automated, highly reliable design for inspecting fractures on six different Pratt & Whitney engines and nine different General Electric engines. The versatility and effectiveness of the ECIS make it a designated “system of choice” by the U.S. Air Force for supporting certification to its worldwide engine overhaul and maintenance centers.

PROVEN PERFORMANCE

KBR's team of specialists has a trusted set of experience ready to assist all over the world:

FUEL FLOW INDICATING SYSTEM (FFIS): KBR developed a new test apparatus to diagnose an aircraft's FFIS, which was falsely indicated fuel was flowing, and successfully tested the solution to this major problem. The solution involved an alternate adjustment point and redesign of a primary spring, which together reduced maintenance costs and increased safety.

FUNCTIONAL SYSTEMS INTEGRATED DATABASE (FSID): KBR developed a government-owned, contractor-operated software platform that integrates maintenance data from multiple sources. This enables trending and analysis to enhance maintenance practices and support advanced analytics. FSID data is currently being used by numerous weapons platforms.

CIRCUIT BOARD UPDATES: KBR's team of professionals performed circuit board upgrades for the U.S. Navy's AV-8B Weapon Systems Program Office (PMA-257) on all U.S. Marine Corps, Italian and Spanish AV-8B Interference Blanking Unit (IBU) Weapons Replaceable Assemblies (WRAs) to enable Link-16 aircraft communications upgrades.

NEXT STEPS

Let's talk about your sustainment engineering requirements and how KBR can help you achieve them. Schedule a consultation with Jim.Bolin@us.kbr.com or Chris.Bergey@us.kbr.com today!

ABOUT US

We deliver science, technology and engineering solutions to governments and companies around the world. KBR employs approximately 28,000 people performing diverse, complex and mission critical roles in 34 countries.

KBR is proud to work with its customers across the globe to provide technology, value-added services, and long-term operations and maintenance services to ensure consistent delivery with predictable results. At KBR, we are the Team Behind the MissionSM.