

Civil, Commercial & Military Space

Making History, Forging the Future

Customer Advantage

The space domain has proliferated, becoming increasingly commercialized and militarized. The demand for exploration and scientific discovery has never been more competitive. No company is better equipped to understand and solve the challenges that come with these changes than KBR.



UNMATCHED EXPERTISE

Executing International Space Station (ISS) operations, training every U.S. astronaut, sustaining Air Force command and control (C2) systems, and ensuring military network cybersecurity

MULTIDISCIPLINARY SOLUTIONS

Drawing on diverse, synergistic capabilities and a collaborative company culture to develop best of breed solutions

TRUSTED INNOVATION

Leveraging 60+ years of expertise to increase capability, reliability, affordability, safety and mission success

TRANSFORMATIVE RESULTS

Adapting technologies and solutions from across mission domains to solve the most complex space challenges

We Plan, Train, Fly and Sustain
our customers' missions



Space Expertise

Industries

- U.S. Military/Intelligence
- U.S. Civil Government
- International
- Commercial

Program Areas

- Human Spaceflight
- Intelligence Surveillance Reconnaissance (ISR)
- Earth Observing/Detection
- Meteorological
- Interplanetary
- Science/Research/Exploration
- Smallsat/CubeSat
- Positioning, Navigation and Timing (PNT)
- Communications
- Missile Warning
- Tactical Exploitation of National Capabilities (TENCAP)

Solutions

- Systems Engineering & Integration/Engineering
- Operations
- Satellite, Ground System & Space Communications
- Human Performance
- Space Security
- Cybersecurity
- Critical Infrastructure Protection
- C5ISR
- Intelligent Technologies
- Advanced Analytics, Data Warehousing & Distribution
- Application Development
- Scientific Research
- Earth, Environment & Space Science

Forging the future through technology and innovation, strategic leadership and unmatched expertise.

Areas of Expertise

Advanced Technologies and Innovation

- Intelligent Robotics & Autonomous Systems
- Advanced Architectures, Analytics, Machine Learning & Artificial Intelligence (AI)
- Augmented Vision & Augmented Reality
- Modeling & Simulation
- Prognostics & Predictive Maintenance
- Quantum Computing
- Smart Grid
- Hypersonics

Strategy and Thought Leadership

- LEO Commercialization
- Space Habitability
- Earth Science
- Agile Roadmapping
- Space Force
- Hypersonics
- SMC 2.0
- Missile Warning
- Cybersecurity
- Critical Infrastructure Protection
- Emerging Threats & Assessments

Ground Segment

GROUND NETWORK

- Architecture, Modeling & Design
- Sustainment/Modernization
- Cybersecurity/Resiliency
- RF/Optical Communications
- Antenna Systems/Transportables
- Ops Schedule Optimization
- Data Routing

PAYLOAD OPERATIONS

- Payload Ops Systems
- Payload Ops Team

DATA SYSTEMS

- Data System Design/ Ops/Sustainment
- Data Processing & Visualization
- Data Center Ops
- Application Development

SPACECRAFT OPERATIONS

- Design, Build, Integration, and Test C2/Telemetry, Tracking & Command (TT&C)
- System Sustainment, Modernization & Automation
- Training System Ops
- Consultation/Oversight

Launch Segment

LAUNCH VEHICLE

- Orbital/Suborbital Rockets, Balloons, & Unmanned Aerial Systems

RANGE

- Launch Processing
- Launch System Design & Construction
- Recovery Ops
- Base/Site Ops
- Range Ops
- Launch Ops

Space Segment

SPACECRAFT

- Design/Certification
- Subsystem/Component Design
- Satellite Fabrication
- Integration & Test
- Consultation/Oversight

PAYLOAD

- Design
- Robotics/Servicing
- Science/Research
- Military
- Consultation/Oversight

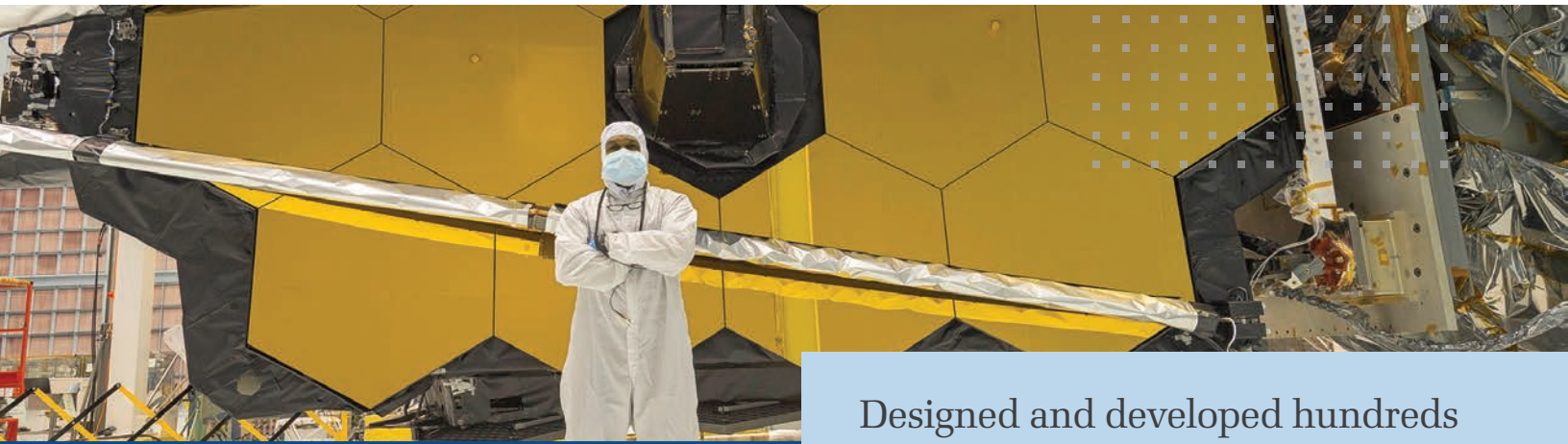
HUMAN SPACEFLIGHT

- Flight Ops
- Extravehicular Activity (EVA) Ops
- Astronaut Health & Performance
- Human Factors Engineering
- Space Life Science
- Equipment/Spacesuits
- Space Medicine/Medical Equipment

ROBOTIC SPACEFLIGHT

- Planning/Pre-Mission Support
- Flight Ops & Engineering
- Flight Dynamics
- Sustainment
- Mission Data Processing

Select Solutions



Designed and developed hundreds of critical spaceflight hardware components for military and civil government customers

Systems Engineering

- Providing SE&I and technical expertise to civil and commercial customers on space vehicles, robotic spacecraft, spaceflight simulators, instruments, and systems/subsystems
- Performing rapid prototyping, full size satellite fabrication and small satellite development for a variety of military and civil space customers
- Providing space vehicle design, test and certification for commercial crew and cargo vehicles, the ISS, and Orion Multi-Purpose Crew Vehicle and Space Launch System (SLS) programs
- Conducting test and evaluation on a broad range of spaceflight hardware/software, sensors, and launch and ground support systems/subsystems
- Providing SE&I and technical expertise to Department of Defense (DoD) satellite and ground systems to ensure mission flexibility, agility and the timely dissemination of national interest intelligence



Operations

- Executing 24/7/365 real-time human spaceflight command and control from Johnson Space Center Mission Control Center (MCC) and maintaining MCC hardware/software, systems and cybersecurity
- Performing full life cycle robotic and human spaceflight mission operations from training, readiness and safety to real-time normal and contingency operations, capsule communicator (CAPCOM) support, and post-flight activities
- Providing multi-mission data center operations including data capture, modeling and archiving; infrastructure optimization, and the development of software for advanced data analysis
- Contributing to the Air Force's SMC 2.0 strategy to meet emerging threats and NASA's strategy to commercialize low Earth orbit (LEO)
- Supporting the ISS during design, construction and its two decades of continuous crewed operations

The only company to support operations and sustainment for both NASA's Mission Control Center and the U.S. Air Force Satellite Control Network

Satellite, Ground Systems & Space Communications



Supporting over 800 spacecraft since 1958



- Delivering full life cycle satellite operations including pre-mission support, flight operations, flight dynamics, data processing, simulations, ground system engineering and lights out operations
- Building, testing, and performing pre-launch check out on military satellites for the Naval Research Laboratory
- Providing 25+ years of sustainment and modernization services to the Air Force's global network of communications and computer systems, facilities, and ground stations supporting 170+ satellites
- Providing satellite ground system procurement, development, operations, sustainment and cybersecurity
- Increasing the resiliency, effectiveness and mission capability of worldwide space communications networks through technology upgrades, modernization and security enhancements



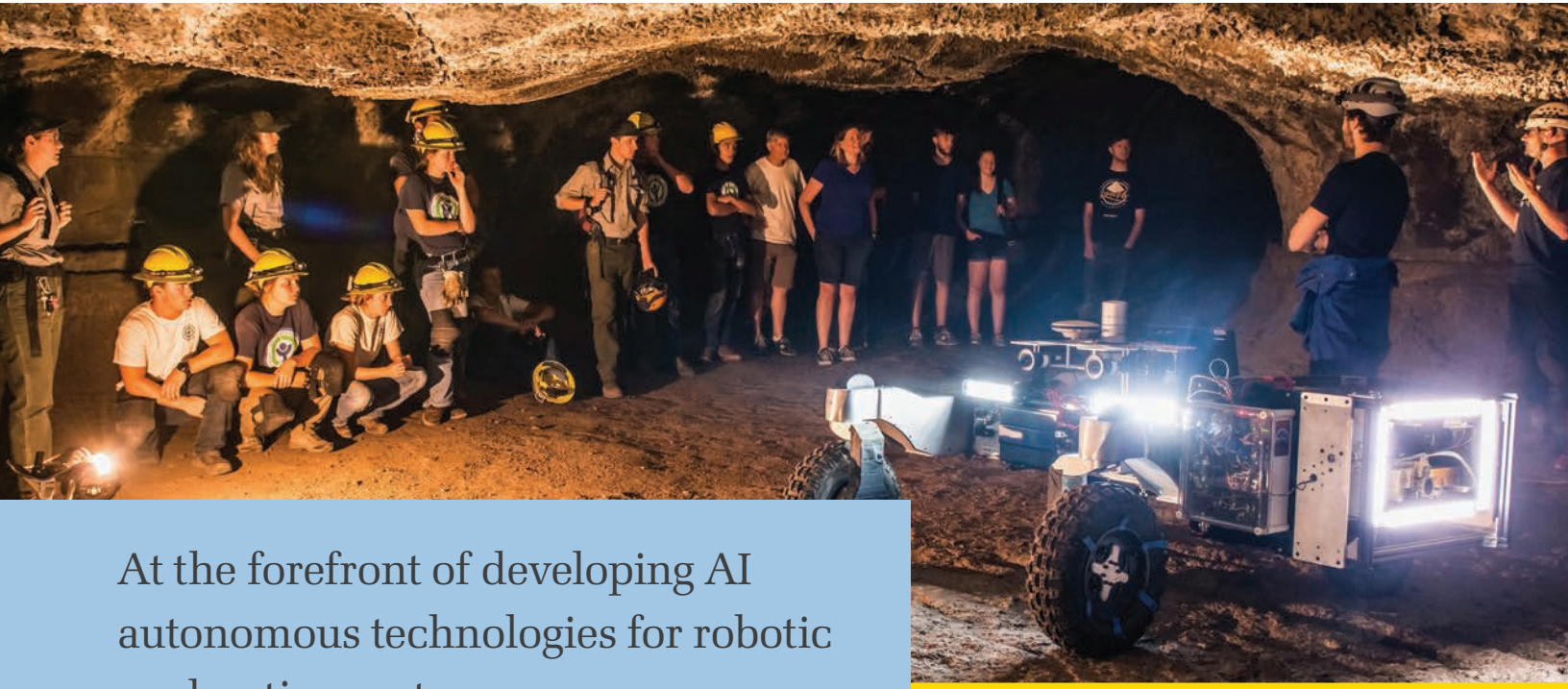
Human Performance

- Supporting every U.S. astronaut since 1968 and pioneering state-of-the-art medical solutions to optimize human performance in space including preparing and maintaining crew health before, during and after flight and throughout contingency and emergency situations
- Performing a broad range of human spaceflight and extreme aviation test and training activities including performance and cognition testing while in microgravity, underwater and in high acceleration environments
- Providing mission-critical training and instruction to astronauts, flight controllers, instructors and analysts for all aspects of mission operations
- Sustaining engineering and maintenance for astronaut Extravehicular Mobility Unit (EMU) spacesuits and Extravehicular Activity (EVA) space tools

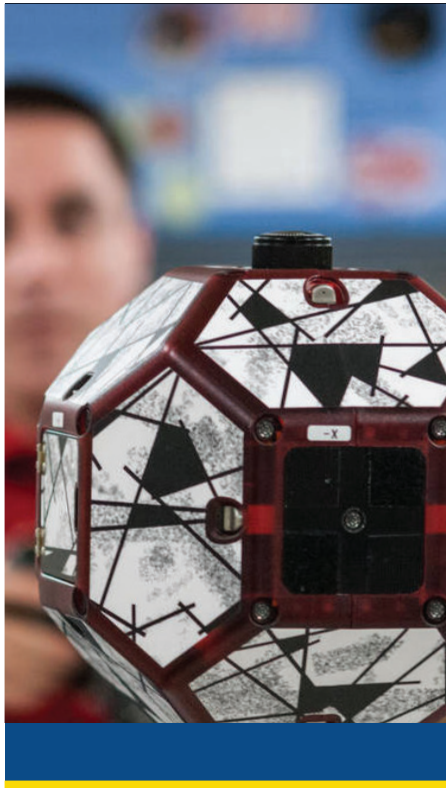


One of the world's largest human spaceflight support organization, contributing to every operational aspect of NASA's human spaceflight program

Intelligent Technologies



At the forefront of developing AI autonomous technologies for robotic exploration systems



- Creating experiments and simulations to test emerging quantum computational devices, evaluate quantum heuristic algorithms, and advance the understanding of quantum approaches for data analysis, data compression and machine learning applications
- Developing and integrating new AI autonomous technologies for robotic exploration systems, applied computer vision, human-robot interaction, mobile manipulation, interactive 3D visualization, and robot software architectures
- Researching and developing intelligent software technologies for advanced collaboration environments, mobile computing platforms, data understanding, systems health, and autonomous systems including Synchronized Position Hold, Engage, Reorient, Experimental Satellites (SPHERES)
- Performing research in software verification and validation, system assurance and certification, and assured autonomous (multi-agent) systems for aeronautics and space systems such as the commercial X1-S Reusable Space Plane

Space Security



- Supporting U.S. national interests in the space domain by helping customers increase space situational awareness and their ability to avert growing security challenges from proliferating commercial and foreign interests
- Mitigating vulnerabilities to U.S. space-based capabilities through the application and monitoring of leading edge cybersecurity tools for systems on orbit and on the ground
- Providing C2, communications, telemetry and tracking for 170+ satellites supporting U.S. national interests
- Researching Long Penetration Mode (LPM) counterflowing jet technology that has the potential to revolutionize supersonic air traffic and the speed and distance of hypersonic weapons systems
- Providing Intelligence, Surveillance and Reconnaissance (ISR), missile warning, and Positioning, Navigation and Timing (PNT) support to military and intelligence customers

Ensuring the military space communication success of 150,000 satellite contacts annually for 25+ years



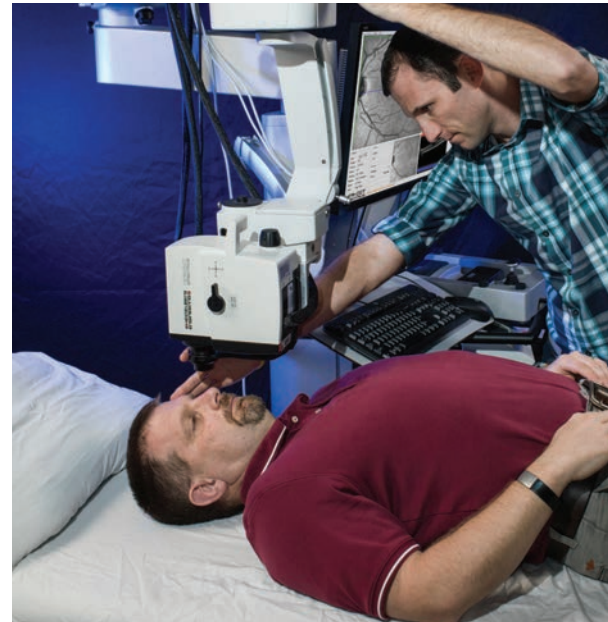
Application Development

Creating applications ranging from data analysis and visualization to prognostics and cybersecurity



- Using secure Agile/DevOps processes to develop applications with lower risk, improved delivery timelines, increased quality and ability to respond to dynamic environments and evolving customer needs
- Engineering the next wave of cyber hardware/software solutions by leveraging our cyber range to simulate large-scale, complex networks and test without impact to mission-critical systems
- Developing big data solutions and cognitive computing techniques to most efficiently deliver greater, meaningful insight
- Leveraging integrated security engineering and automation in the development process to create applications with greater cyber-resilience, improved application design and ability to expedite critical changes and features into production
- Developer of numerous civil and military space customer applications and systems including the ICESat Science Information Processing System, the Pathfinder Ocean and Over Ice Altimeter Systems, and Athena, a physics-based real-time orbital data visualization tool

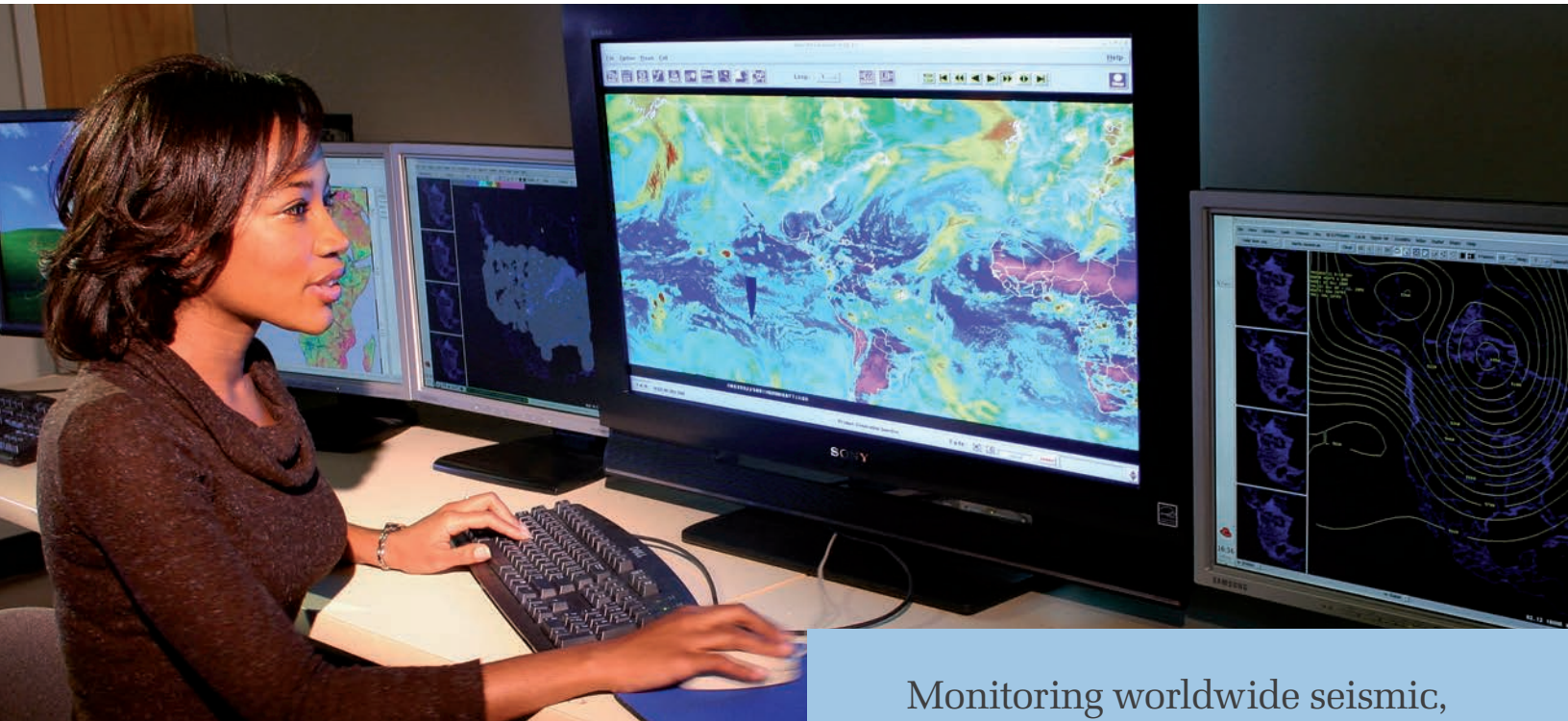
Scientific Research



Making groundbreaking discoveries about the cosmos, our planet and people

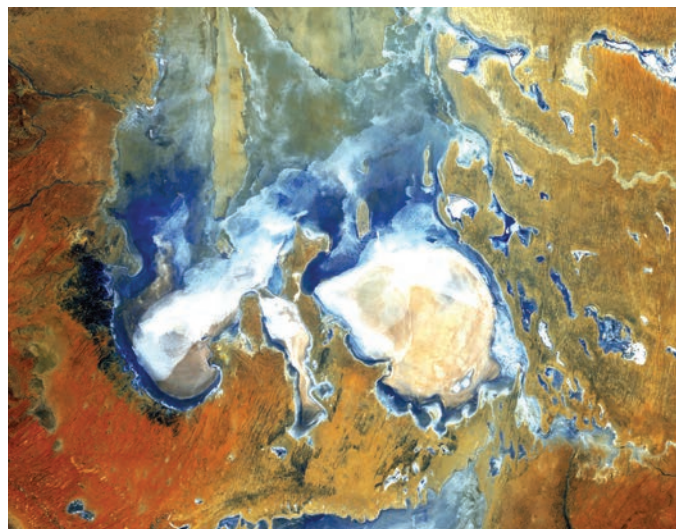
- Providing scientific data analysis for the Transiting Exoplanet Survey Satellite (TESS) and Kepler/K2 mission to help enable the discovery of new planets
- Supporting NASA's Solar System Exploration Research Virtual Institute (SSERVI), Astrobiology Institute, Stratospheric Observatory for Infrared Astronomy (SOFIA) program, and the NASA Aeronautics Research Institute (NARI)
- Operating more than 15 NASA laboratories, multiple specialized test facilities and conducting applied biomedical research in space and other extreme environments
- Pioneering human spaceflight risk reduction and mitigation through research in neuroscience, toxicology, immunology, radiation biophysics, microbiology, vision, nutrition, exercise science, and cardiovascular and behavioral health

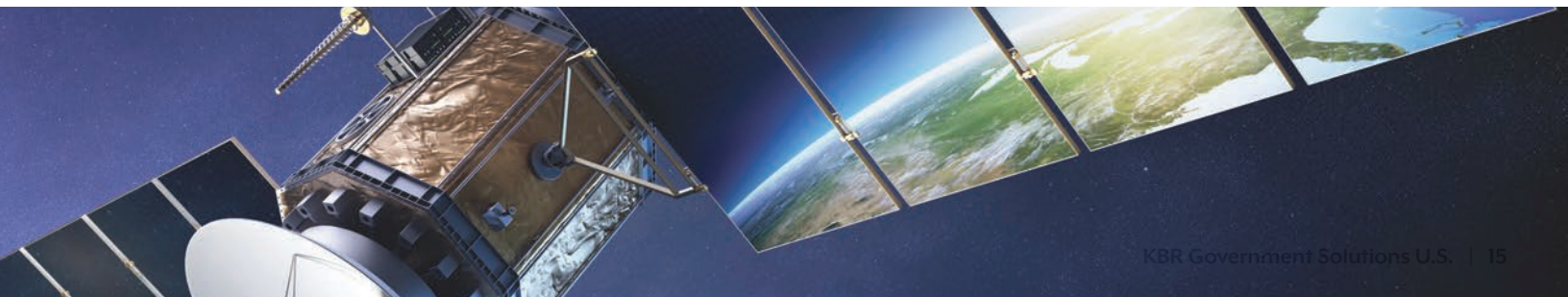
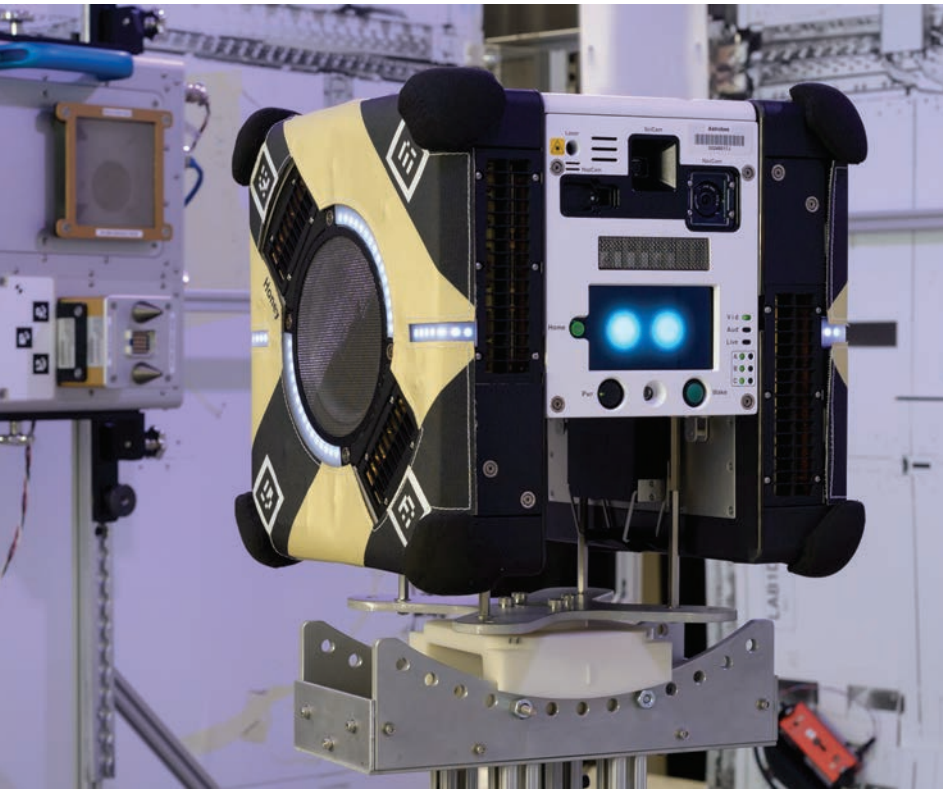
Earth, Environment & Space Science Monitoring



Monitoring worldwide seismic, biological, chemical and nuclear threats for 30+ years

- Sustaining the Global Seismographic Network (GSN), and developer of the system used to verify meteorological watches and warnings and disseminate the data to warn communities
- Supporting the study of land change through the acquisition, archival, processing, and distribution of remotely sensed Earth data for the U.S. Geological Survey that also serves geospatial applications for first responder, wildfire, intelligence, agriculture, academia, and research communities
- Providing tools for global climate analysis and state-of-the-art geophysical model development
- Leading data visualization techniques for precipitation, atmospheric chemistry, air quality, land imagery and more





About KBR, Inc.

KBR is a global provider of differentiated professional services and technologies across the asset and program lifecycle within the Government Solutions and Energy sectors. KBR employs approximately 37,500 people worldwide (including our joint ventures), with customers in more than 80 countries, and operations in 40 countries, across three synergistic global businesses:

- Government Solutions, serving government customers globally, including capabilities that cover the full lifecycle of defense, space, aviation and other government programs and missions from research and development, through systems engineering, test and evaluation, program management, to operations, maintenance, and field logistics
- Technology Solutions, including proprietary technology focused on the monetization of hydrocarbons (especially natural gas and natural gas liquids) in ethylene and petrochemicals; ammonia, nitric acid and fertilizers; oil refining and gasification
- Energy Solutions, including onshore oil and gas; LNG (liquefaction and regasification)/GTL; oil refining; petrochemicals; chemicals; fertilizers; differentiated EPC; maintenance services (Brown & Root Industrial Services); offshore oil and gas (shallow-water, deep-water, subsea); floating solutions (FPU, FPSO, FLNG); program management and consulting services

KBR is proud to work with its customers across the globe to provide technology, value-added services, integrated EPC delivery and long term operations and maintenance services to ensure consistent delivery with predictable results. **At KBR, We Deliver.**



Scan for more information
about KBR Government Solutions.

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