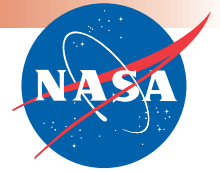


SPACE LAUNCH INITIATIVE

Technology Summary



Ground Operations

The Space Launch Initiative is NASA's effort to reduce the risk associated with developing a 2nd Generation reusable launch vehicle by defining, developing and testing technologies needed to safely and cheaply access space.

NASA's goal is to significantly increase safety, improve reliability and reduce payload launch costs from today's \$10,000 per pound to \$1,000 per pound.

NASA's Kennedy Space Center, Fla., is responsible for managing the Ground Operations Project of the Space Launch Initiative program — NASA's effort to reduce the risk associated with developing a 2nd Generation reusable launch vehicle by defining, developing and testing technologies needed to safely and cheaply access space.

Ground Operations include advanced checkout & control systems, separation systems, ground to flight interfaces, propellant densification, and fluid transfer technologies.

Supporting the Ground Operations Project, Kennedy Space Center will lead the Propellant Densification element, which includes such things as propellant production, related instrumentation and control systems, and systems to support engine tests.

Kennedy will also lead the Advanced Checkout and Control Systems element, which includes such things as artificial intelligence applications, data analysis and retrieval technologies, architectures to support multiple vehicles, vehicle health systems and data communication systems.

Leading the Separations Systems element includes non-pyrotechnic separation technology.

Ground-to-flight Interfaces include umbilical technologies for loading, draining and venting of cryogenic propellants; automated umbilical systems; interface standards for power, data, purges, cooling and payloads.

Fluid transfer technologies will minimize timelines for fluid filling and draining. Technologies include robust cryogenic components, and instrumentation/sensors to monitor fluid transfer.

In the area of Range Operations, Kennedy will lead in technologies for ground and space-based range systems, weather instrumentation, information systems and decision models such as toxic dispersion, blast and plume impact.

The Marshall Space Flight Center in Huntsville, Ala., leads the Space Launch Initiative with support from Kennedy Space Center; Ames Research Center in Moffett Field, Calif.; Stennis Space Center in Bay St. Louis, Miss.; Dryden Flight Research Center in Edwards, Calif.; Johnson Space Center in Houston; Langley Research Center in Hampton, Va.; the Jet Propulsion Laboratory in Pasadena, Calif.; Glenn Research Center in Cleveland; and the Air Force Research Laboratory, which includes research and development facilities at nine United States Air Force bases nationwide.