NASA SBIR 2004 Phase I Solicitation

B4.03 Market Driven Space Infrastructure

Lead Center: MSFC

In accordance with the Space Act, as amended, to "seek and encourage to the maximum extent possible the fullest commercial use of space," NASA facilitates the use of space for commercial products and services. For example, space resource utilization techniques that enable the use of in situ planetary resources along with dual applications on Earth that create products by combustion synthesis of materials, extraction of volatiles, and separation of solids; also, spacecraft technologies that enhance spacecraft inspections, robotic processing or Free Flyer experiments with dual applications on Earth, such as high density video and advanced sensor networks. The products may use information from in-space activities to enhance an Earth-based effort or may require in-space manufacturing. This subtopic's goal is the development of infrastructure technology that will enable or enhance commercial space operations. Processes and hardware that have a clear utilization plan are a priority. All space activities that lead to commercial use in space are of interest. Some specific areas for which proposals are sought include the following:

Power and Thermal Management

Power and thermal management technologies that enable or enhance commercial satellites or space systems are sought.

Communications

Broadband, data compression, and imaging that can enable or enhance commercial operations in space or commercial satellites. This includes use of hyperspectral imagery and remote sensing.

Space Vehicles and Platforms

Improved technologies are sought for autonomous commercial vehicles and platforms. These technologies include autonomous rendezvous and docking, structures, and avionics.

Space Resources Utilization

Advanced commercial space activities will benefit from using nonterrestrial resources. These resources include
propellants, power, and structural materials.