

## Appendix C: NASA SBIR/STTR Technology Taxonomy

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| <b>Aeronautics/Atmospheric Vehicles</b>   |
| Aerodynamics  |
| Air Transportation & Safety   |
| Airship/Lighter-than-Air Craft  |
| Avionics (see also Control and Monitoring)  |
| <b>Analysis</b>   |
| Analytical Instruments (Solid, Liquid, Gas, Plasma, Energy; see also Sensors)   |
| Analytical Methods  |
| <b>Astronautics</b>   |
| Aerobraking/Aerocapture   |
| Entry, Descent, & Landing (see also Planetary Navigation, Tracking, & Telemetry)  |
| Navigation & Guidance   |
| Relative Navigation (Interception, Docking, Formation Flying; see also Control & Monitoring; Planetary Navigation, Tracking, & Telemetry) |
| Space Transportation & Safety   |
| Spacecraft Design, Construction, Testing, & Performance (see also Engineering; Testing & Evaluation)                                      |
| Spacecraft Instrumentation & Astrionics (see also Communications; Control & Monitoring; Information Systems)                              |
| Tools/EVA Tools   |
| <b>Autonomous Systems</b>   |
| Autonomous Control (see also Control & Monitoring)  |
| Intelligence  |
| Man-Machine Interaction   |
| Perception/Vision   |
| Recovery (see also Vehicle Health Management)   |
| Robotics (see also Control & Monitoring; Sensors)   |
| <b>Biological Health/Life Support</b>   |
| Biomass Growth  |
| Essential Life Resources (Oxygen, Water, Nutrients)   |
| Fire Protection   |
| Food (Preservation, Packaging, Preparation)   |
| Health Monitoring & Sensing (see also Sensors)  |
| Isolation/Protection/Radiation Shielding (see also Mechanical Systems)  |
| Medical   |
| Physiological/Psychological Countermeasures   |
| Protective Clothing/Space Suits/Breathing Apparatus   |
| Remediation/Purification  |
| Waste Storage/Treatment   |
| <b>Communications, Networking &amp; Signal Transport</b>  |
| Ad-Hoc Networks (see also Sensors)  |
| Amplifiers/Repeaters/Translators  |
| Antennas  |

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| Architecture/Framework/Protocols  |
| Cables/Fittings   |
| Coding & Compression  |
| Multiplexers/Demultiplexers   |
| Network Integration   |
| Power Combiners/Splitters   |
| Routers, Switches   |
| Transmitters/Receivers  |
| Waveguides/Optical Fiber (see also Optics)  |
| <b>Control &amp; Monitoring</b>   |
| Algorithms/Control Software & Systems (see also Autonomous Systems)   |
| Attitude Determination & Control  |
| Command & Control   |
| Condition Monitoring (see also Sensors)   |
| Process Monitoring & Control  |
| Sequencing & Scheduling   |
| Telemetry/Tracking (Cooperative/Noncooperative; see also Planetary Navigation, Tracking, & Telemetry)                                       |
| Teleoperation   |
| <b>Education &amp; Training</b>   |
| Mission Training  |
| Outreach  |
| Training Concepts & Architectures   |
| <b>Electronics</b>  |
| Circuits (including ICs; for specific applications, see e.g., Communications, Networking & Signal Transport; Control & Monitoring, Sensors) |
| Manufacturing Methods   |
| Materials (Insulator, Semiconductor, Substrate)   |
| Superconductance/Magnetics  |
| <b>Energy</b>   |
| Conversion  |
| Distribution/Management   |
| Generation  |
| Sources (Renewable, Nonrenewable)   |
| Storage   |
| <b>Engineering</b>  |
| Characterization  |
| Models & Simulations (see also Testing & Evaluation)  |
| Project Management  |
| Prototyping   |
| Quality/Reliability   |
| Software Tools (Analysis, Design)   |
| Support   |
| <b>Imaging</b>  |

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| 3D Imaging  |
| Display   |
| Image Analysis  |
| Image Capture (Stills/Motion)   |
| Image Processing  |
| Radiography   |
| Thermal Imaging (see also Testing & Evaluation)                                     |
| <b>Information Systems</b>  |
| Computer System Architectures   |
| Data Acquisition (see also Sensors)   |
| Data Fusion   |
| Data Input/Output Devices (Displays, Storage)                                       |
| Data Modeling (see also Testing & Evaluation)                                       |
| Data Processing   |
| Knowledge Management  |
| <b>Logistics</b>  |
| Inventory Management/Warehousing  |
| Material Handling & Packaging   |
| Transport/Traffic Control   |
| <b>Manufacturing</b>  |
| Crop Production (see also Biological Health/Life Support)                           |
| In Situ Manufacturing   |
| Microfabrication (and smaller; see also Electronics; Mechanical Systems; Photonics) |
| Processing Methods  |
| Resource Extraction   |
| <b>Materials &amp; Compositions</b>   |
| Aerogels  |
| Ceramics  |
| Coatings/Surface Treatments   |
| Composites  |
| Fluids  |
| Joining (Adhesion, Welding)   |
| Metallics   |
| Minerals  |
| Nanomaterials   |
| Nonspecified  |
| Organics/Biomaterials/Hybrids   |
| Polymers  |
| Smart/Multifunctional Materials   |
| Textiles  |
| <b>Mechanical Systems</b>   |
| Actuators & Motors  |
| Deployment  |

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| Exciters/Igniters  |
| Fasteners/Decouplers   |
| Isolation/Protection/Shielding (Acoustic, Ballistic, Dust, Radiation, Thermal) |
| Machines/Mechanical Subsystems   |
| Microelectromechanical Systems (MEMS) and smaller                              |
| Pressure & Vacuum Systems  |
| Structures   |
| Tribology  |
| Vehicles (see also Autonomous Systems)   |
| <b>Microgravity</b>  |
| Biophysical Utilization  |
| <b>Optics</b>  |
| Adaptive Optics  |
| Fiber (see also Communications, Networking & Signal Transport; Photonics)      |
| Filtering  |
| Gratings   |
| Lenses   |
| Mirrors  |
| Telescope Arrays   |
| <b>Photonics</b>   |
| Detectors (see also Sensors)   |
| Emitters   |
| Lasers (Communication)   |
| Lasers (Cutting & Welding)   |
| Lasers (Guidance & Tracking)   |
| Lasers (Ignition)  |
| Lasers (Ladar/Lidar)   |
| Lasers (Machining/Materials Processing)  |
| Lasers (Measuring/Sensing)   |
| Lasers (Medical Imaging)   |
| Lasers (Surgical)  |
| Lasers (Weapons)   |
| Materials & Structures (including Optoelectronics)                             |
| <b>Planetary Navigation, Tracking, &amp; Telemetry</b>                         |
| Entry, Descent, & Landing (see also Astronautics)                              |
| GPS/Radiometric (see also Sensors)   |
| Inertial (see also Sensors)  |
| Optical  |
| Ranging/Tracking   |
| Telemetry (see also Control & Monitoring)                                      |
| <b>Propulsion</b>  |
| Ablative Propulsion  |
| Atmospheric Propulsion   |

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| Extravehicular Activity (EVA) Propulsion                                     |
| Fuels/Propellants  |
| Launch Engine/Booster  |
| Maneuvering/Stationkeeping/Attitude Control Devices                          |
| Photon Sails (Solar; Laser)  |
| Spacecraft Main Engine   |
| Surface Propulsion   |
| Tethers  |
| <b>Sensors/Transducers</b>   |
| Acoustic/Vibration   |
| Biological (see also Biological Health/Life Support)                         |
| Biological Signature (i.e., Signs Of Life)                                   |
| Chemical/Environmental (see also Biological Health/Life Support)             |
| Contact/Mechanical   |
| Electromagnetic  |
| Inertial   |
| Interferometric (see also Analysis)  |
| Ionizing Radiation   |
| Optical/Photonic (see also Photonics)  |
| Positioning (Attitude Determination, Location X-Y-Z)                         |
| Pressure/Vacuum  |
| Radiometric  |
| Sensor Nodes & Webs (see also Communications, Networking & Signal Transport) |
| Thermal  |
| <b>Software Development</b>  |
| Development Environments   |
| Operating Systems  |
| Programming Languages  |
| Verification/Validation Tools  |
| <b>Spectral Measurement, Imaging &amp; Analysis (including Telescopes)</b>   |
| Infrared   |
| Long   |
| Microwave  |
| Multispectral/Hyperspectral  |
| Non-Electromagnetic  |
| Radio  |
| Terahertz (Sub-millimeter)   |
| Ultraviolet  |
| Visible  |
| X-rays/Gamma Rays  |
| <b>Testing &amp; Evaluation</b>  |
| Destructive Testing  |
| Hardware-in-the-Loop Testing   |

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| Lifetime Testing                        |
| Nondestructive Evaluation (NDE; NDT)    |
| Simulation & Modeling                   |
| <b>Thermal Management &amp; Control</b> |
| Active Systems                          |
| Cryogenic/Fluid Systems                 |
| Heat Exchange                           |
| Passive Systems                         |
| <b>Vehicle Health Management</b>        |
| Diagnostics/Prognostics                 |
| Recovery (see also Autonomous Systems)  |