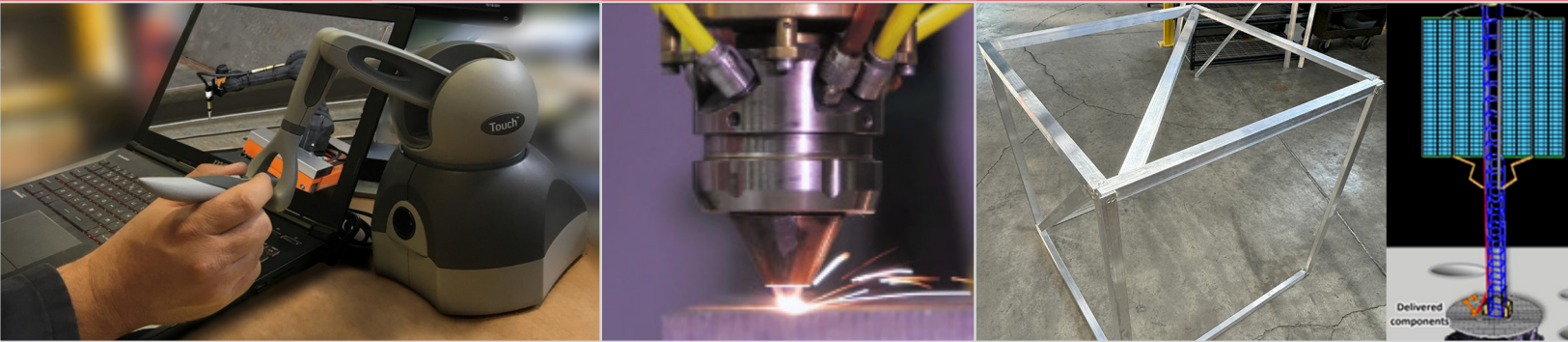


From Concept to Orbit: Advanced Manufacturing Solutions for Space Innovation at EWI



Space exploration presents unique challenges for technological development, including the need for lightweight, high-performance components, cost-effective production methods, and the ability to repair or manufacture critical parts in space.

EWI's advanced manufacturing experts have the expertise and technical knowledge to guide your projects from concept to execution. With cutting-edge technologies in additive manufacturing, welding and fabrication, and convergent manufacturing, EWI provides innovative solutions that directly benefit the space sector.

EWI engineers collaborate with your team to accelerate space technology development with services covering:

- **Additive Manufacturing** – *Additive friction stir deposition, component consolidation, laser directed energy disposition (laser cladding)*
- **Welding and Fabrication** – *Space-compatible technologies, including laser welding and solid-state welding, addressing the unique challenges of space and lunar fabrication*
- **Remote or Tele-Manufacturing** – *Integrating collaborative robots and multi-process end effectors for welding, cladding, and grinding*
- **Convergent Manufacturing** – *Digital twin programming, deposition modeling, and advanced process monitoring for MRO*
- **Manufacturing Digital Thread Integration** – *Real-time system monitoring and end-to-end traceability using digital twin optimization, deposition modeling, and process modeling*
- **Materials Characterization** – *aiding in the selection of materials for a given application, considering use environments, sterilization needs, and other functional requirements over the product life cycle*
- **Qualification and Testing** – *process qualification with cost-benefit analysis, mechanical testing to verify functional performance and fatigue life, and failure analysis with solutions recommendations*

Whether you're in the early stages of design or facing challenges later in the process, EWI is here to help with:

- *Materials selection for space applications*
- *Design for manufacturability for space, including in-space manufacturing*
- *Remote or Tele-Manufacturing for space integration*
- *Materials testing and characterization, including environmental, durability, and aging assessments*

For more information, contact Matt Dodds at mdodds@ewi.org or **614.688.5131**.