



Integration of advanced materials, manufacturing processes, tooling and fixturing will facilitate reduction in life-cycle costs, empty-weight/gross-weight ratio, vibration and interior noise. These efforts will also facilitate increases in payload/gross weight ratio, mission range, survivability, and operational availability. All improvements are made more affordable due to significant reductions in labor and in operating and support (O&S) costs.

Powertrain Technologies

- Performance prediction
- Rapid prototyping
- Drive shaft laser balancing
- Condition monitoring
- Wear-resistant coatings via cold gas dynamic spraying and EB-PVD
- Spray-formed HT aluminum alloys
- Localized laser HT and cladding for wear and corrosion resistance

Health Usage Monitoring System Technologies

- Condition-Based Maintenance
- Distributed diagnostic system architectures
- Embedded engine predictive diagnostics
- MMI for troubleshooting and diagnostics

Rotor System Technologies

- Rotor blade NDI (finds delamination)
- Control of radiated sound power

Signature Reduction Technologies

- Composite thermal tiles
- Radar cross-section reduction
- Acoustics

Drive System Technologies

- Advanced gear and bearing steels
- Laser fabricated housings
- Laser probe workpiece positioning
- Ausform finished gears and bearings
- Intelligent noncontact measurement of spiral bevel and face gears
- Gear noise control
- Design for power density

Airframe System Technologies

- Laser fabricated flooring
- Composite sandwich panels for noise control
- Spray formed HS aluminum alloys
- Protective armor

Repair Technology

- NDI technologies (shearography)
- Coating application and removal
- Component repair methods

CBR Technologies

- Photon-based cleaning of CBR agents
- Laser-based cleaning of CBR agents

Landing Gear System Technologies

- Laser cladding
- Spray formed HS aluminum alloys

