



StandardAero

A *GE* Company

Panel 1: Manitoba Priority Technologies for Economic Development

StandardAero Commentary

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MRO repair technology demands are changing

- Past & Present
 - Expertise in manual and semi-automated processes
 - Skilled labour force capable of repairing parts with different degrees of damage
- Future
 - Past & present needs
 - Automated/robotic repair processes
 - Adapt technology to repairability of new materials
 - Utilize technology to understand effect of repairs on engine performance/reliability

Recommendations – Listing of Priority Technologies

- Advanced Machining/Manufacturing Technology
 - Advanced Measurement (3D Scanning)
 - Additive Manufacturing (3D Metal Printing)
 - Adaptive Machining
 - Robotic Vision Systems
- Build-Up/Joining Technology
 - Laser Applications
 - Friction Welding
 - Electron Beam Welding

Recommendations – Listing of Priority Technologies

- Coating Technology
 - Plating Alternative Technologies
 - Aluminide Coatings
 - Advanced Cold Spray
 - Electron Beam Physical Vapor Deposition (EBPVD)
- Cleaning/Stripping Technology
 - Chemical Alternative Technologies
 - Laser Ablation
 - Pulsed High Pressure Waterjet
- Composites Technology

Recommendations – Listing of Priority Technologies

- Fleet Management Systems Technology
 - Sensors/Data Acquisition Systems
 - Engine Performance/Reliability Modeling
 - Neural Networks

Non-Destructive Inspection Methods

- 3D Digital X-ray
- Training opportunities

GE Aviation Testing Research & Development Centre

- High Speed Imaging
- Large Volume Data Acquisition & Associated Streaming/Transmission

Recommendations – National Aerospace Vision 2030

- Increase level of investment in R&D to stay competitive
- Technology Roadmaps have been developed, utilize to establish future needs
 - Ensure approach is broader than just a listing of technologies

- Utilize Technology Demonstration Centres to introduce and develop key aerospace technologies
- Similar technology needs for manufacture or repair capability
 - Different challenges associated with MRO applications