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Supportability Technology Development Needs

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Supportability Challenges

- In-Flight Operations

- Reduce logistics footprint required to support long-duration missions – reduce mass and volume of spares and support equipment

- Enhance mission autonomy and robustness

- Reduce Life Cycle Cost

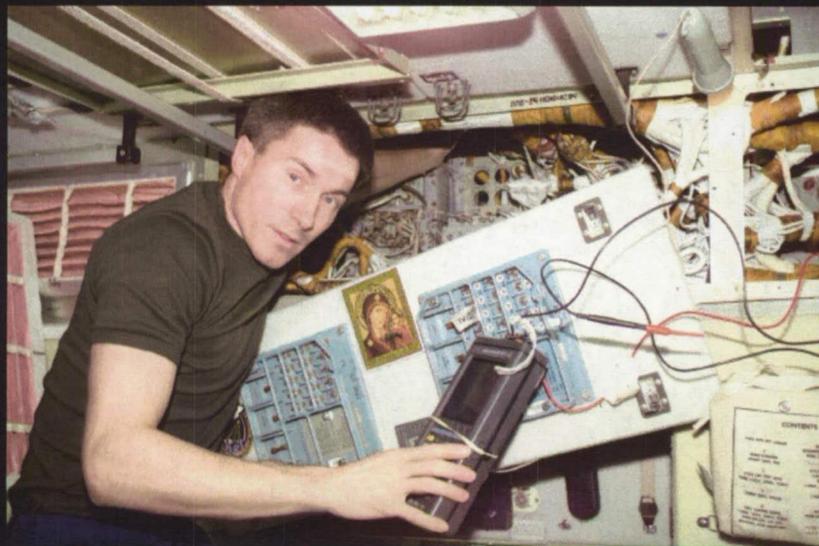
- Ground Operations

- Reduce Life Cycle Cost



Diagnostic Systems

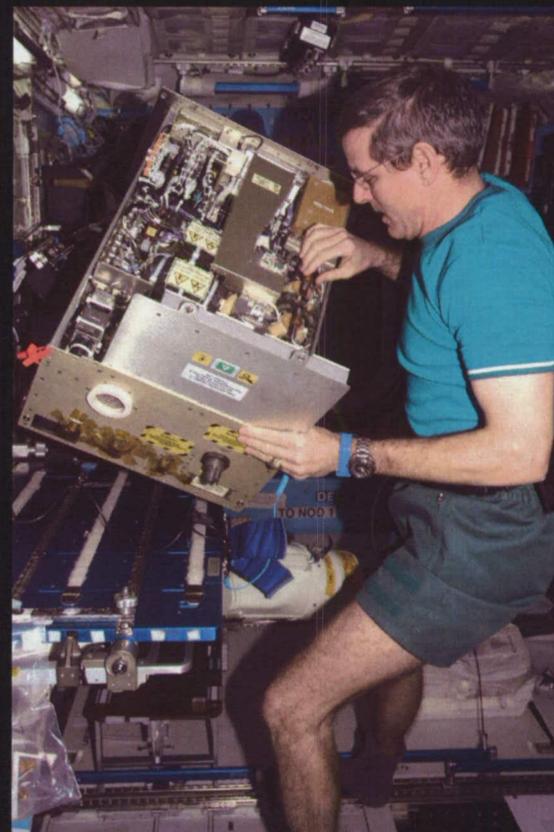
- Technology Needs:
 - Electronic systems diagnosis
 - » Clear diagnosis with minimal ambiguity
 - » Compact, low-mass diagnostic hardware
 - » Multi-function diagnostic units – minimum number of discreet pieces of diagnostic equipment
 - » Straightforward interpretation of results



Spacecraft System Repair



- Drive repair to lowest practical hardware level
- Enable manufacturing of selected parts
- Maximize reconfigurability
- Maximize reusability





Power, Communications, Avionics, Informatics (PCAI)

- Technologies:
 - High energy density, safe rechargeable batteries (ETDP Power Project)
 - Miniaturized Rad Hard electronics for PCAI
 - Heads up and on cuff displays
 - Radio and Navigation technologies for Lunar missions





EVA Support Equipment

- Technologies:
 - Suit ports
 - Suit locks
 - Air locks
 - Recharge systems (power, water, O₂)
 - Dust removal
 - Human-robotics interfaces

