National Aeronautics and Space Administration

Possible Avionics Inspection Needs

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General Thoughts

- **Looking for Good Ideas**
- **“Do no harm”**
- **“Do some good”**
  - “Events” could indicate failure – or not.
  - Assist in troubleshooting, isolation, analysis
  - Inform decision to repair or restart without repair
  - Future Problem Avoidance
- **Minimize maintenance by crew (especially EVAs)**
  - In-situ inspection and repair
  - In-situ inspection, IVA workbench repair
- **Inspection should complement diagnostic capabilities**
  - Avoid Duplication
  - If duplication possible, pick cheapest approach
  - Occasional inspection may replace continuous monitoring
  - Monitor for inspection (e.g., impact detection sensors)
- **Ground capabilities could also be valuable.**
  - Post-install/pre-launch “behind the panels”
  - Could lead to in-space tools.

Some Specific Possibilities:

- **Comparison/Confirmation of "As Built" vs. "As Designed"**
- **Connectors**
  - Visual Inspection of connectors for bent pins, contamination
  - Special camera (lens) for connector inspection
  - Thermography
  - Contact retention test
- **Card Seating**
- **Solder Joints**
- **Looking at both surface and sub-surface in 3D**
  - X-ray inspection of MOSFETs to see inside ceramics
  - Use of IR, Ultra Sound, MRI, CAT?