

GLAST TRACKER Subsystem I&T

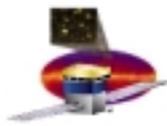
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Our previous experience

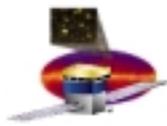
Mechanical Testing

Electrical Testing



From BTEM to Flight TKR

- **TKR Subsystem I & T is partially based on BTEM Assembly and Testing**
Most of the activities concerned were NOT Space specific
 - **We did**
 - **parts testing for functionality**
(ASIC, SSD, Cables, MCM, Interconnects..)
 - **“calibrations”**
(Bad channel map, TOT, Noise scans)
- **We did vibration and thermal testing to investigate assembly questions and tune our FEA models.**
- **What will be “new and improved”:**
 - \$ use space qualified parts wherever possible**
 - \$ procure coupons for testing (SSD, cables, MCM,..)**
 - \$ use environmental testing for qualification and workmanship**

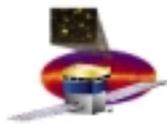


TKR Mechanical I&T

- TKR I&T will be organized in the following way:

	<u>Qualification</u>	<u>Acceptance</u>
Trays	SLAC	INFN
Towers	SLAC	SLAC

- Tray I&T Plan is being developed by INFN Bari
- Website <http://www.ba.infn.it/~glast/index.htm> has a draft I&T concept.
- Use of environmental testing to accept workmanship of trays.
- Only tested and accepted parts are further integrated (panels, ladders, MCM's, interconnects)
- Environmental Test of fully functional trays will be preceded and followed by a very sensitive test of functionality
(I-V of SSD, channel map of noise)



TKR Electrical I&T

- Plan is being developed by UC Santa Cruz/INFN Pisa, based on BTEM experience
- Use Space Qualified Parts and manufacturers, ICP design rules,

Parts Test Plan:

- **SSD:** tested by manufacturer
acceptance tested (I-V, mechanical dimensions)
coupon testing at Hiroshima and INFN Pisa
- **Ladders:** tested after gluing and wire bonding (I-V, caps)
tested before assembly on trays (I-V)
- **ASIC's:** tested and calibrated at UC Santa Cruz
total dose and SEE testing of flight parts
- **MCM:** assembled, burned-in, tested in industry, coupon testing
- **Kapton, cables** testing of parts, coupon testing

- After assembly of trays: long-term “calibration” with C.R. using DAQ
- Will produce fully accepted flight spare trays for easy Tower I&T
- Have draft plan for acceptable failure rate during I&T