

ACIS Verification Summary Report (Continued)

The Following inputs were provided by Al Pillsbury of Lincoln Labs:

The Cam-Sim detector assembly was returned from LMA to have the detector positions measured. This assembly had been subjected to additional qualification level acoustic and random vibration testing as part of the Optical Blocking Filter (OBF) test program. Prior to these tests the detector positions had been measured to establish reference positions. Measurements taken after testing show no movement within our measurement capability. For these measurements, it is estimated that the standard deviation of the measurement error is 2.3 microns for lateral directions (AXAF Y and Z) and 3.6 microns for the out of plane direction (AXAF X). For these tests, four points on each detector were measured. When the pre- and post-test measurements are compared, the largest out-of-plane difference is 8.25 micron and the largest lateral difference is 6.5 micron. The standard deviation of the difference is 2.3 micron laterally and 3.8 micron out-of-plane. The requirement is to position detectors to within +/- 100 microns laterally and +/- 25 microns out-of-plane.

The engineering unit detector assembly was subjected to three sets of five thermal cycles with each set being colder than the previous set. Test temperatures were -93°C, -120 C (operational temperature of the detectors), and -150 C (survival temperature). Detector locations were measured before and after each set of thermal cycles. No significant movement (+/- 5 micron) was measured for the in-plane or out-of-plane directions.

Element:
ACIS

Requirement Number:
3.2.2.9

Verification Item:
3.2.2.9

**AXAF-I
Verification
Requirement
Compliance Data
Submittal**

Evaluators:
CHE, SAO

Type of Review:
 Verification Item Closure
 Multiple Verifications Req'd
 Requirement Closure

Requirement Title:
Alignment Stability

Compliance Data/Location:
 MA-56/ACIS-110-A-24/Bldg 4200 Rm 522
 MA-272/ACIS-600-I-10/Rm 522 Bldg 4200
 MA-291/36-01510.070/Rm 522 Bldg 4200 (Closure Report)
 MA-304/ACIS-600-I-05/Rm 522 Bldg 4200

Verification Method:
Analysis

Comments:

SAO/COJ-APPROVED

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL # of pages =

To <i>Mayer, Bill</i>	From <i>TONY LAVOLE</i>
Dept./Agency	Phone #
Fax #	Fax #

NSN 7540-01-317-7369 5099-101 GENERAL SERVICES ADMINISTRATION

Status:
Open

Recommendation:

- Approve
- Disapprove
- Resubmittal
- Other (explain)

Action Required for Closure:

MSEC Evaluator: Ken Reed **Date:** 9/3/97 **Organization:** EJ32 **Phone Number:** 4-6560

Disposition:

- Approve
- Disapprove
- Waiver
- Pending Action

Action Required for Closure:
 It looks good from a thermal stability perspective but ACIS did not address ICD paragraph 3.4.2.2 of the ICD. I have a suspicion that if they did, the result would be out of spec since HRC has said that they can't meet it by about a factor of 10. Hold until TRW defines the disturbance spectrum of the wheels better.

Chief Engineer: Anthony R. Lavole **Date:** 9/26/97