1. Theory and Process Definitions

Process definitions for the Set Solution (WP5100) and IDT Preprocessing (WP3100) were delivered according to schedule (Refs. 1, 5). This work continues as planned; three more definitions are expected within the next three months.

A numerical test of one of the proposed IDT preprocessing algorithms showed that the resulting data compression does not involve any significant loss of information (Ref. 4). Further tests are under progress, including in particular the alternative definition of signal parameters proposed in WP3100.

A short study of slit ambiguities (Refs. 14, 15) showed that this problem is perhaps best solved by using as input for the set solutions a much better attitude about the z axis than previously foreseen (max error ±0.3 as). The new requirement should be satisfied with an improved attitude reconstitution (Ref. 6), in which IDT data can be incorporated if necessary.

The concept of dynamical smoothing and its possible incorporation in the NDAC data processing have been considered (Ref. 7).

2. TYCHO

Notes mainly on the Star Mapper configuration, optimisation, and accuracy analysis have been distributed to HST and/or MATRA (Refs. 16 – 19). The most recent discussion is found in a contribution to the TYCHO data analysis proposal (Ref. 13).
REFERENCES

I. NDAC/LO notes

1. 82.05.03 (NDAC/LO/001) WP5100: Set Solution - Definition
2. 82.05.07 (NDAC/LO/002) Errata (1): Mathematical Formulation... (Annex A)
3. 82.05.24 (NDAC/LO/003) Remarks on the Process Definitions
4. 82.06.21 (NDAC/LO/004) Test of IDT Preprocessing Algorithm
5. 82.09.01 (NDAC/LO/005) WP3100: Preprocessing of IDT Data (Definition)
6. 82.09.24 (NDAC/LO/006) Attitude Reconstitution Using Splines
7. 82.09.28 (NDAC/LO/007) On Dynamical Smoothing

II. Other notes on software aspects

8. 82.03.13 On the Scan Zero Point Convention
9. 82.03.29 Photometric Precision (IDT)
10. 82.06.26 Experiments with Random Star Distributions
11. 82.08.04 On the Generation of Markov Processes
12. 82.08.21 The HIPPARCOS Reference System (IAU, Patras)
13. 82.09.07 SM Configuration - Accuracy Estimates (Input to TYCHO Proposal)
14. 82.09.20 Elimination of Slit Errors
15. 82.09.23 Removal of Slit Inconsistencies

III. Hardware and mission aspects; accuracy analysis

16. 82.02.27 Analytical Model of SM Accuracy
17. 82.03.03 Optimization of Non-Periodic Star Mapper Patterns
18. 82.03.23 Non-Periodic Star Mapper Patterns
19. 82.04.06 Star Mapper Optimisation
20. 82.04.09 Accuracy and Calibration of Main Grid
21. 82.04.18 The All-Reflective Eccentric Schmidt (ARES)
22. 82.05.19 Selection of Scanning Law Parameters (K, ξ)
23. 82.06.02 A Better Approximation to Uniform Revolving Scanning
24. 82.06.15 Effective Dead Time Due to Veiling Glare
25. 82.06.27 Coefficients of Improvement - An Historical Review