

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
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11 August 1982

Area Code 617  
692-4765

TO: VLBA Recorder Group  
FROM: A.E.E. Rogers  
SUBJECT: Minutes of the TELECON Meeting Held 10 Aug. 82 at 1:30 p.m. EDT

Attendance (via telephone):

- A.E.E. Rogers - Haystack
- H.F. Hinteregger - Haystack
- M. Ewing - Caltech
- B. Rayhrer - JPL
- R. Escoffier - NRAO
- R. Lacasse - NRAO
- H. Hvatum - NRAO

The meeting opened with brief summaries of recorder development efforts as follows:

1) Benno Rayhrer reported that his efforts in the development of narrow track heads for longitudinal recording (on Honeywell model 96 recorder) have been successful in achieving the desired mechanical accuracy. Prototype head stacks made by discrete assembly of VHS-like heads have, however, failed to yield satisfactory SNR. Benno suspects magnetic problems and has a contract with a commercial source for improved prototypes, which will include a magnetic shunt on the side of the coil away from the gap. Benno also reported the successful development (by a commercial source) of a micro positioner for the head stacks.

2) Hans Hinteregger reported that his efforts in the development of narrow track heads for longitudinal recording have also run into difficulty in achieving adequate SNR. Hans reported that while early prototypes made by the Matsushita Corp. in Japan yielded excellent SNR, later prototypes using the "gap bar" assembly method and some using discrete assembly yielded poor SNR performance. Hans suspects that a number of problems have contributed to the poor electrical performance. Some prototypes used single crystal ferrites without proper crystal orientation; other prototypes which hot pressed ferrite showed significant visual evidence of gap imperfections (shrinkage and smearing). Hans will suggest that Matsushita use an assembly factory that has fine tuned the art of assembling narrow gap heads.

3) Ray Escoffier reports that his efforts to improve the digital recording density of the MK II VHS cassette recorder have been only moderately successful. Ray reports that he doesn't expect any major improvements can be achieved by using 3PM code (compared with NRZ) but that he will continue to examine the question of optimum coding. He reports recording 18 Mbits/sec at 1% error rate under "ideal" conditions and expects that 12 Mbits/sec may be a more reasonable data rate. He will visit Alan Yen to see firsthand

Alan's method of recording at 12 Mbits/sec with error rates of 0.01%.

4) Marty Ewing reports that Caltech is examining several new cassette recorders for MK II use, including the professional VHS recorders with servo tracking control.

The meeting continued with a discussion of where and how the recording system should be interfaced to the processor. It was decided that group members should generate specific proposals for an interface definition and send them to Cathy Burgess (NRAO) for distribution. These proposals will then be discussed by the processor group.

Recorder group members elected to meet once every 2 months just prior to the processor group meeting.

AEER/kw