

June 5, 1986

To: VLBA Operations Group  
From: C. Signell  
Subject: Summary of the June 4 VLBA Operations Group Meeting

Attendants: J. Benson, C. Signell, J. Campbell, P. Hicks,  
R. Hjellming, P. Napier, J. Romney, R. Sramek

Mark II Tape Recorders and Formatters

The decision at the review meeting was to begin VLBA operations with the VLBI network in the first quarter of 1988 using Mark II recorders and formatters. Currently formatters can be borrowed from JPL (and possibly NRAO) and Ken Kellermann has the responsibility of organizing the acquisition of these formatters. It was unclear who would check out these formatters and be responsible for installation but one possibility is the Tape Recorder engineer the VLBA plans to hire in 1987.

The original thought was to purchase 3 Mark II recorders for each station that is to be operated as part of the VLBI network to allow for 12 hours of unattended operations. However, in practical terms it is more realistically to use 5 to 6 per station for more convenience and probably operational cost savings in the long term. The trade off comes in purchasing additional recorders versus paying for additional manpower. The purchase of these recorders would come out of VLBA operations money.

One of the problems with the Mark II recorders is that it is not known if it is possible to purchase a commercial recorder which can easily be modified for Mark II operations. There is already a need for these recorders because CalTech is expanding its correlator to 16 stations and some of the recorders used at the VLBI network stations are showing signs of excessive wear and will have to be replaced shortly. Ray Escoffier currently has the responsibility of determining from schematics and recorder manuals if a commercially available recorder can be easily modified. The goal is to an answer to this question by July 15, have a preliminary design and cost estimate by August 13 and a final design and cost estimate by December 15.

### VLBA Operational Manpower Requirements

There is already an estimate for the manpower levels to operate both the VLA and VLBA once construction is complete. As an attempt to address the requirements to begin operations in early 1988 a first pass has been made at a plan for building up the VLBA operational levels. The basic premises include: (a) hire the Head Field Tech at the beginning of 1987 and each antenna field tech at the beginning of the outfitting stage of each antenna, (b) hire enough (3) array operators to operate for extended periods (3 to 4 weeks at a time) starting with the availability of central control, (c) hire enough correlator operators (3) to operate the correlator for extended periods of time beginning in early 1990, and (d) hire the tape recorder engineer in 1987 and one of the Data Analysts in 1988. The attached plan should be considered only a first attempt. This plan will obviously have to be changed. All suggestions and comments should be passed on to C. Bignell so that an improved plan may be put together by the next meeting.

### The 1987 VLBA Operations Budget

A first pass at the operations budget (assumed to be \$400K) is also attached and reflects both the manpower outlined in the manpower plan and estimates at other areas of expenses (power, etc). This current estimate is very preliminary.

### Array Operations Center

The money for the first phase of the combined VLA/VLBA operations center should become available this summer. It is felt that growth of the VLBA operations effort should be centralized as much as is possible and in the first phase of the building. This therefore should allow for the arrival of the correlator in late 1989 and the operations groups starting in 1988 shortly after the time the building becomes available for occupancy. The first phase of the building may have to accommodate a significant part of the VLBA operations until the second phase is ready. In the optimistic funding scheme the second phase may ready in early 1990 whereas in the more realistic scheme occupancy of the second phase would probably be sometime in 1991. The details of the use of the first phase is yet to be worked out and it will have to include all these uncertainties. R. Sramek has responsibility for organizing this effort.





VLBA OPERATING COSTS FOR 1987

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Category	Costs (\$1000)	NOTE **
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Personnel (wages and benefits)	252	1
Travel		2
Service	10	
Other (Sci.,etc)		
Communications		3
To antennas (10)	30	
Other (reg. tele., etc)	10	
Power		4
At antennas (10)	28	
At operations center		
M & S		5
Antennas	4	
Electronics	40	
Computer		
Plant		
Other (administrative)	11	
Shipping	15	6
New Equipment		
Total	400	

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NOTES

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1 This assumes a total of 7 personnel.