

Technology Coordinator Report

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Abstract

The main initial effort of the Technology Coordinator has been participation in the development of a VLBI Standard Interface. Future plans include formation of technology study groups and compilation of an index of VLBI technology papers.

1. VLBI Standard Interface

The primary focus of efforts for the past few months has been the development of a “VLBI Standard Interface” (VSI) specification which will allow the transmission of data to and from heterogeneous VLBI Data Transmission Systems (DTS). The goal is to define the interface to be compatible with traditional recording/playback systems, network data transmission, and even direct-connect systems. In order to do this the design of the VSI must completely hide the detailed characteristics of the data-transport mechanism and deal only with the interfaces to the outside world.

The following assumptions are being made in the development of the VSI specification:

- The DTS is fundamentally a receiver and transmitter of *bit streams*.
- The *meaning* of individual bit streams is not specified; normally, a bit-stream will be a stream of sign or magnitude bits associated with particular samples, but the actual meaning is to be mutually agreed upon between the data-acquisition system and the correlator.
- The received and transmitted bit-stream clock rates may be different (e.g. the playback rate to the correlator may be speeded up or slowed down); however, all bit-stream clock rates on acquisition must be the same, and all bit-stream clock rates on transmit must be the same.
- The data-acquisition time tag of every bit in every bit stream must be fully recoverable with no ambiguity.

A committee consisting of representatives from technical development centers in North America, Europe, Japan and Australia is actively reviewing and expanding the draft proposal. The effort is being fully coordinated with the international astronomical VLBI community as well, with the goal of a unified standard interface for all VLBI activities worldwide. We hope that an agreed standard interface definition can be reached by the end of 1999.

2. Other Activities

Other planned and ongoing activities in the technology coordination area are:

1. Formation of a few small subgroups with interests in particular technology areas. The members of these subgroups will be drawn from IVS technology centers and other experts in the field. These sub-groups, interacting primarily via e-mail, will be asked to develop a list of concerns and goals and to suggest the steps needed to achieve them. The VLBI Standard Interface group serves as a prototype for this type of activity.

2. Compilation of an index of published papers and memos in all of the relevant VLBI technology areas. Ideally, this will be a Web-based index with links to electronic versions of the referenced material. The members of all IVS Technology Development Centers, as well as other experts in the field, will be invited to contribute. This activity is planned to be formally initiated in the latter half of 1999.
3. Promotion and encouragement of the inclusion of topical sessions on advanced VLBI technology at international meetings and workshops.