

IVS Technology Coordinator Report

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Abstract

The main effort of the Technology Coordinator during 2001 was devoted to leading the VSI Technology Coordination Committee in its effort to develop the VLBI Standard Interface software specification (so-called VSI-S). This specification is intended to work together with the VSI-H specification approved in August 2000. The goal of the VSI effort is to specify standardized hardware and software interfaces for a VLBI Data Transmission System (DTS), such that DTS's developed by different groups can be interchanged with minimal effort at both data-acquisition and data-processing sites.

1. VSI-H Wins Award!

In June 2001, IVS was honored by the Japanese Ministry of Public Management, Home Affairs, Posts and Telecommunications for the development of the VSI-H specification. As a result, the VSI-H specification has received considerable visibility and is being adopted by other disciplines as well. Because the VSI-H specification is potentially applicable to a broad class of high-speed streaming data applications, particularly those requiring precise sample-time accountability, VSI has been informally re-christened as 'Versatile Streaming Interface' and may appear on some commercial products in the near future.

2. VLBI Standard Interface - Software (VSI-S)

The VSI Technology Coordination Committee is nearing completion of the VSI-S specification, which is the software half of the VSI specification. The goal of the VSI-S specification is to specify a robust, reliable communication protocol to control a VSI-H-compliant VLBI Data Transmission System (DTS). In this regard, VSI-S addresses the following issues:

1. Specifies a communications structure and protocol.
2. Specifies a generalized command and response syntax model to be used by the DTS.
3. Specifies a base set of commands to configure and operate a generic DTS adhering to the VSI-H specification.

As of this writing (Jan 2002), the VSI-S specification is nearing completion, with completion expected soon. Already, several groups worldwide have developed, or are developing, VLBI data systems and components that adhere to the VSI-H standard. We expect this trend to broaden and accelerate. I wish to extend special thanks to all the other members of the VSI Technology Committee for their continuing efforts to bring the VSI specification to full reality:

- Wayne Cannon - York University, Canada
- Brent Carlson - DRAO, Canada
- Dick Ferris - ATNF, Australia
- Dave Graham - MPI, Germany
- Ed Himwich - NASA/GSFC, U.S.

- Tetsuro Kondo - CRL, Japan
- Nori Kawaguchi - NAO, Japan
- Ari Mujunen - Metsahovi, Finland
- Misha Popov - ASC, Russia
- Sergei Pogrebenko - JIVE, Netherlands
- Jon Romney - NRAO, U.S.
- Ralph Spencer - Jodrell, England

The full VSI-H specification, along with an interesting historical chronology of its development, is available at <http://dopey.haystack.edu/vsi/index.html>. Look for VSI-S to be posted soon!

3. Other Activities

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

1. Formation of a few small subgroups with interest in particular technology areas. The members of these subgroups will draw 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. Among the efforts contemplated in the near future is an examination of possible standards for electronic transmission of VLBI data (so-called “e-VLBI”).
2. As an ongoing activity, promote and encourage inclusion of topical sessions on advanced VLBI technology at international meetings and workshops.