Proposal to the IVS Directing Board for the formation of a VLBI2010 Committee

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Motivation

In order for VLBI to contribute to global geodesy at the highest possible level, it is necessary to maintain an ongoing research activity directed at continuously improving the technique. To make this happen in a coherent fashion, it is necessary to step back and take an integrated view of VLBI's constituent components. This holistic approach, which should also include a consideration of the respective contributions of all space geodetic techniques, will help reveal synergies wherever they exist and will also allow any proposed system changes to be evaluated in the most appropriate context possible, i.e. the degree to which they improve IVS's final products.

The formation of a VLBI2010 Committee to carry out these functions comes at an opportune time. The final report of IVS's WG3, "VLBI2010: Current and Future Requirements for Geodetic VLBI Systems" has just recently become available. In order to ensure that the recommendations of IVS WG3 are carried out, it is necessary that some structure within the IVS take responsibility for their completion.

Charter

The primary function of the VLBI2010 Committee will be to promote and guide research into the improvement of the "technique" of geodetic VLBI. The committee will take an integrated view of VLBI and will evaluate the effectiveness of proposed system changes based on the degree to which they improve IVS's final products. In addition, the committee will take responsibility for encouraging the implementation of the recommendations of WG3.

The VLBI2010 Committee will typically gain understanding of the effectiveness of new hardware, software, strategies, etc through the use of combinations of the following approaches:

- Analytic studies
- Simulations
- Prototyping
- R&D experiments
- Re-analysis or interpretation of previous campaigns or global data sets
- Inter-technique co-location studies

Over time, the VLBI2010 Committee will develop and maintain outputs, such as

- A list of all known error sources (along with their size, effect, and characterization)
- A list of strategies for reducing all known error sources
- A prioritized list of actions required to improve the technique
- A list of all standard interfaces needed to achieve system-wide compatibility

- Standardized specifications for each system component
- Publicly available software, e.g. to carry out simulations

Ongoing activities will include
- The establishment and maintenance of a memo series
- Monthly telecons (with splinter telecons as required)
- Face-to-face meetings (scheduled at convenient times such as the IVS GM)

The activities of the VLBI2010 Committee will be ongoing and, as such, the committee needs to be a standing committee. It will be composed of a Chairperson and members selected from the IVS Associates. Initial committee membership will be accepted as part of this charter (see below), and changes in membership will be proposed by the committee itself and reviewed by the IVS Directing Board. Other experts can be invited to participate at the discretion of the committee. The committee will report to the IVS Directing Board at regular intervals to coincide with Directing Board meetings.

The goals of the VLBI2010 Committee cannot be achieved in isolation. Hence, the VLBI2010 Committee needs to actively encourage participation from other IVS components. In addition, more participation from universities, government agencies, and industry should be actively sought.

Proposed Membership

My proposal for a starting group would be: Bill Petrachenko (chair), Dirk Behrend (ex-officio), Johannes Boehm, Brian Corey, Ruediger Haas, Yasuhiro Koyama, Dan MacMillan, Zinovy Malkin, Arthur Niell, and Gino Tuccari.