VLBA Implementation Requirements

Steven Durand

National Radio Astronomy Observatory, a facility of the National Science Foundation operated under cooperative agreement by Associated Universities, Inc.
NRAO Five Year Plan

• Work with Haystack Observatory, and this eVLBI consortium, to seek out opportunities for collaboration
• Fund a test eVLBI connection of a VLBA station (Pie Town) to the VLA or to the Net
• Increase Pie Town Bandwidth (1-2 GHz)
eVLBI Correlator Parameters

• Multiple inputs will be available:
  – 1 & 10 Gigabit Ethernet
  – 10 Gigabit/second Optical (OC192)

• Multiple formats will be available:
  – Mark4 (sixteen 16 MHz wide channels)
  – VSI (32 – 32(64) MHz wide channels)
  – WIDAR (four 1 GHz wide channels)
  – WIDAR (eight 2 GHz wide channels)
Present Pie Town VLBA Characteristics

- Digitize two VLBA IF’s
  - 0.5 to 1.0 GHz pass bands
- Mark5 interface
- Designed for VLBA/Makr4 correlators
- Analog IF fiber connection
  (VLA to Pie town)
  - 100km single hop
  - Bi-direction communication
  - Pass four 50MHz wide Channels
Pie Town VLBA Link
Design Goals

• New BBC’s, samplers, and LO system
  – Haystack design or EVLA DTS or ?
• Mark5 recorders required.
• Must be WIDAR compatible
• Must be VSI-H compatible
• Operational by 2009
Eats flies. Dates a pig.
Hollywood star.

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VLA - MIT Haystack Link