NLC Timing System Status 3/7/01

Test System Status: Operating.

Phase Stability: OK
Phase Noise: 3X specification
Other: Intermittent noisy operation (Mode hops?).
Recent work: Analog diode temperature control added - no improvement in system noise or stability. 3/7/01

Plans: Install new DFB laser diode
Install new DFB laser diode: PC board being designed.
Design completion expected 3/8/01 (Brown)
Board Delivery expected 3/16/01
Test Diode bandwidth schedule 3/21/01 (Brown)
  Setup Bias
  Setup TEC
  Test diode spectrum with Burleigh meter (Frisch)
  Use RF signal generator and fast detector
Install New diode in system 3/28/01 (Brown)
NLC Timing System Status 3/7/01 - Continued

Plans: Install Fiducial Generator / Detector
   Generator Ready 3/7/01 (Bernstein)
   Install in system schedule 3/14/01 (Brown / Bernstein)
      Delay unit placed inside phase loop (next to existing phase shifter)
      Adjust amplitudes to match
      Split output of mixer on detector #2. Use 50MHz LP filter, look for fiducial
   Test system performance with diode schedule 3/21/01 (Brown / Bernstein)

Plans: Construct digital fiducial detector (Base design on existing FIDO)
   Circuit design / modifications schedule 3/28/01 (Cisneros / Bernstein)
      Diode zero crossing detector with fast D flip flop on 357MHz.
   Circuit construction schedule 4/11/01 (Bernstein)
   Installation in test system 4/18/01 (Brown / Bernstein)
NLC Timing System Prototype #3 3/7/01

Specifications:
  Operating frequency 714MHz
  Trigger resolution: 1/178.5 MHz. Faster if faster PLDs available.
  Phase noise: <0.3° X-band in 10KHz bandwidth.
  Phase stability: < +/-5° X-band over 1 month and +/- 10°C.

Description: System Contains 3 modules
  Fiducial synchronizer: Generates 360Hz fiducials with 714MHz synchronization
  Transmitter box: 5U Rackmount with 714MHz and synchronized fiducial in.
  Receiver box: Single VME card with fiber in, triggers out.

Need someone to lead this project