



Cost and Schedule

Peter Cameron

Milestones



Apr 05 - PDR

Jun 05 - finalize prototype system architecture (need 60Hz balancing at RHIC, clarification of 60Hz magnitude at LHC)

Nov 05 - prototype (4 planes) ready for RHIC beam

Feb 06 - deliver 2 planes to CERN for SPS testing

Apr 06 - FDR (you're invited!)

May 06 - SPS testing, initial Controls integration (FESA)

Jun 06 - finalize architecture

Nov 06 - final system (4 planes) ready for RHIC beam

Feb 07 - deliver final system to CERN, system integration and testing

Summer 07 - system commissioning with beam

Scope, Boundaries, Responsibilities...



- CERN provides
 - kicker amplifiers, kickers, and pickups
 - Direct Diode Detection AFEs
 - Digitizer boards
 - DAB64 Boards
 - VME crates and crate computers for CERN installation
- LARP provides
 - VME crates and crate computers for LHC test installation at BNL
 - gate array programming
 - FEC programming
 - LabVIEW control program, collaboration on CERN equivalent (FESA)
 - specification and testing of LHC TF Applications software
 - testing at RHIC, with and without beam
 - pre-beam and beam commissioning support

Overall budget situation



- FY05 - we are over budget ~\$100K
 - Motion control pickups were **expensive** - design room
 - Good progress on technical design
 - Good progress on understanding of PLL interaction with machine physics
 - We are ready to advance into detailed design and prototype fab, need to apply manpower
- FY06 and beyond - we are under budget each year by ~\$100K

FY05 - we are over budget



- coupling study
 - 1 man-month (Luo)
- testing with beam at RHIC
 - 1 man-month (Cameron)
- DAB64 running in vXworks
 - 2 man-months (Hoff, Cameron, Oddo)
- gate array programming
 - 4 man-months (Oddo, Cameron, Mead)
- FEC programming
 - 2 man-months (Marusic, Cameron)
- LabVIEW control program
 - 2 man-months (Degen, Cameron)
- Crate, FEC, mains digitizer,... - \$10K

FY06 - 14 man-months + \$105K



- testing with beam at RHIC
 - 2 man-months (Cameron)
- DAB64 running in vXworks maintenance/upgrades
 - 1 man-month (Hoff, Cameron, Oddo)
- gate array programming
 - 4 man-months (Oddo, Cameron, Mead)
- FEC programming
 - 2 man-months (Marusic, Cameron)
- LabVIEW control program
 - 2 man-months (Degen, Cameron)
- Crate, FEC, mains digitizer,... - \$10K
- Test Equipment (Arb, FFT box, scope,...) - \$80K
- collaboration with CERN on Applications programming
 - 1 man-month (Cameron,...)
- FNAL - 2 man-months (Tan)
- Travel - \$15K

FY07 - 14 man-months + \$40K



- testing with beam at RHIC
 - 2 man-months (Cameron)
- DAB64 running in vXworks maintenance/upgrades
 - 1 man-month (Hoff, Cameron, Oddo)
- gate array programming
 - 2 man-months (Oddo, Cameron, Mead)
- FEC programming
 - 1 man-months (Marusic, Cameron)
- LabVIEW control program
 - 1 man-months (Degen, Cameron)
- Pre-beam testing at CERN - 6 man-months
 - system operation from FESA, on test resonator
 - verify interface with AP, Controls, Magnets for all Transverse FF and FB
 - verify interface with Controls for data display
 - Applications programming
- FNAL - 2 man-months (Tan)
- Travel and Materials- \$15K + \$25K

FY08 - 14 man-months + travel



- Continuous presence of one of the LARP transverse feedback specialists at CERN during the first year of beam commissioning