SLAC contribution to ATF2

for discussions at S4 expanded meeting

April 10, 2007

Contribution & status

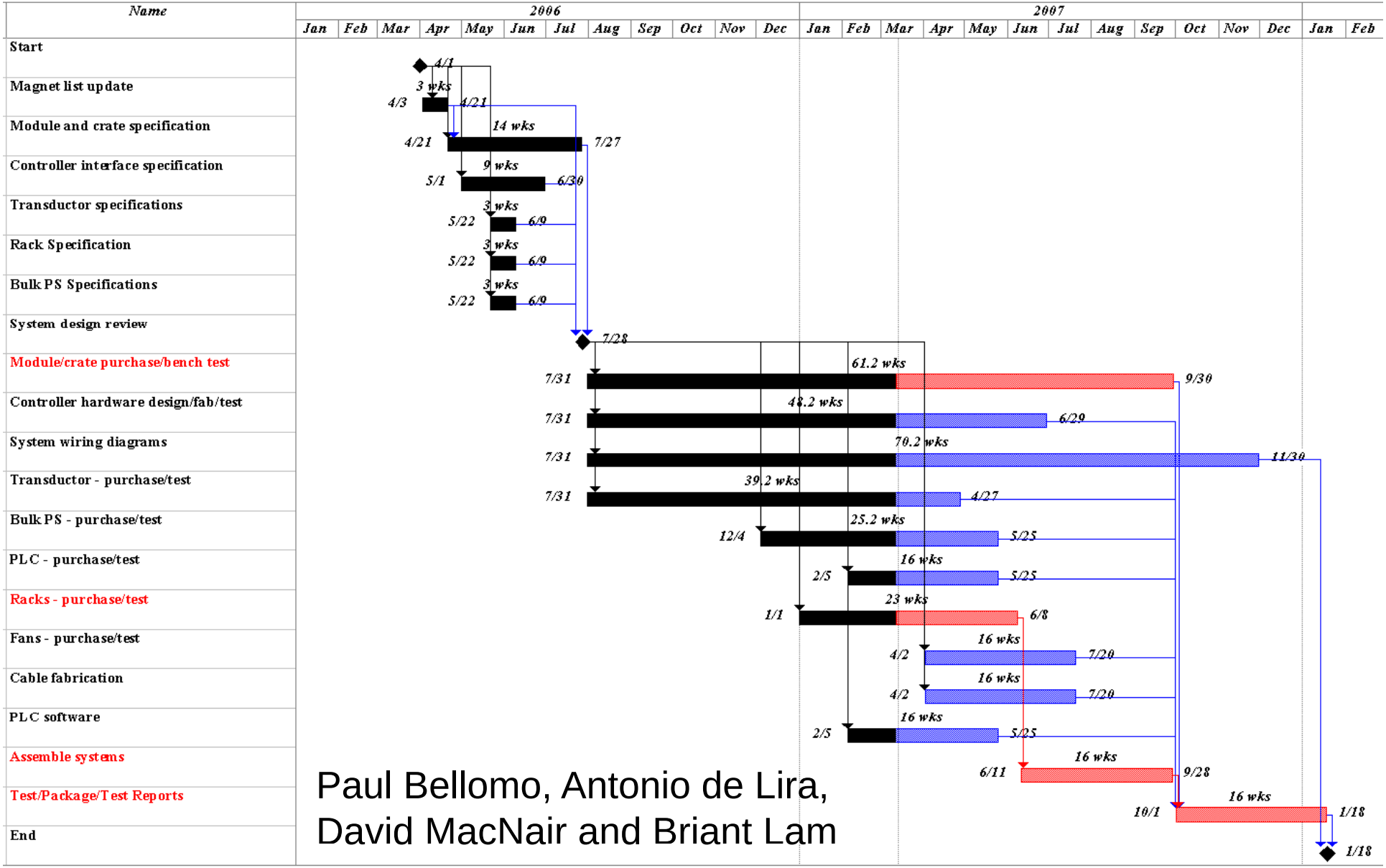
- Power supplies for ATF2 (high availability ILC-like design)
  - **funded OK, schedule on track**
- Magnet movers (refurbished from FFTB)
  - **delivered to KEK and one for FD tests to LAPP**
- Electronics for QBPMS
  - **developed, tested, first pulse calibration to be tested in May**
  - **with increased # of BPMs desired in optics, exhausted all spares, may need to make several more boards (~2-3K issue)**
- Three bends for FF
  - **funds now seems OK, bids will be sent to 6 places within days**
  - **assignment of the supports under the bends not finalized**
- Five sextupoles for FF
  - **iteratively found a most cost effective solution: use three existing SLC sextupoles for FF and two existing FFTB sextupoles with more cooling (those already at KEK) for FD. Funds seems OK**
- Two quads for final doublet
  - **decided to use existing FFTB quad, increase of aperture by inserting shims. Now quads in preparation for magnetic measurements before modification.**

Contribution & status

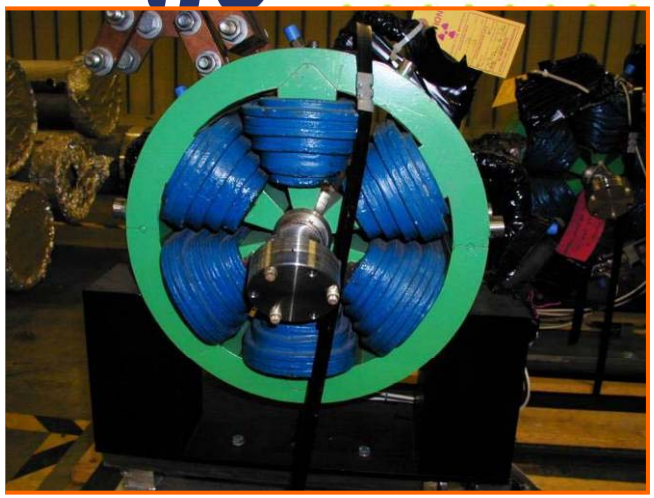
- Requested carbon wire scanner
  - **located a scanner, will need to find if it can be provided**
- Development of optics design; tuning methods; feedback; effects of vibration
  - **ongoing, with collaboration with other parties**
- Development of codes for QBPM & movers, EPICS, etc
  - **tests of first pulse BPM calibration this May**
  - **develop together with UK and KEK colleagues**
  - **also plan to develop "flight simulator" for control system to look either to real or to simulated data (to test BBA and similar procedures) – to be discussed**
- Contribute to studies of emittance preservation in extraction line
  - **made magnetic models of septa & post-kicker quad, provided to collaborators, started tracking studies, will revisit wakes**
- SLAC team visits to KEK to work on ATF and ATF2 commissioning
- Will also develop "remote participation" to enhance work by engaging colleagues staying at SLAC, with "remote shifts"
  - **now are testing tools for remote participation and discussing the rules**
  - **plan to try it out in May, with 3 SLAC people at KEK and ~4 people on remote shifts at SLAC**

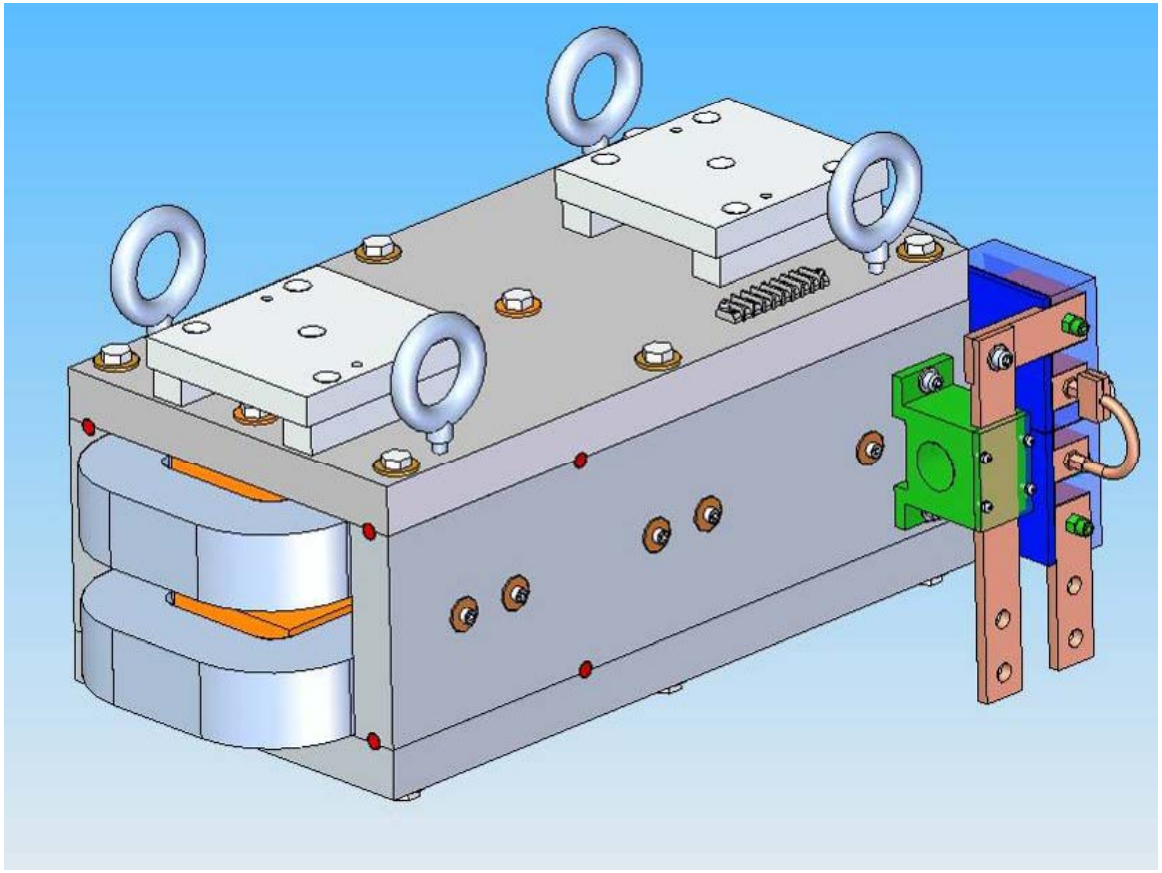
Extra slides

ATF2 - High Availability Power Supplies - Briant Lam, Project Engineer

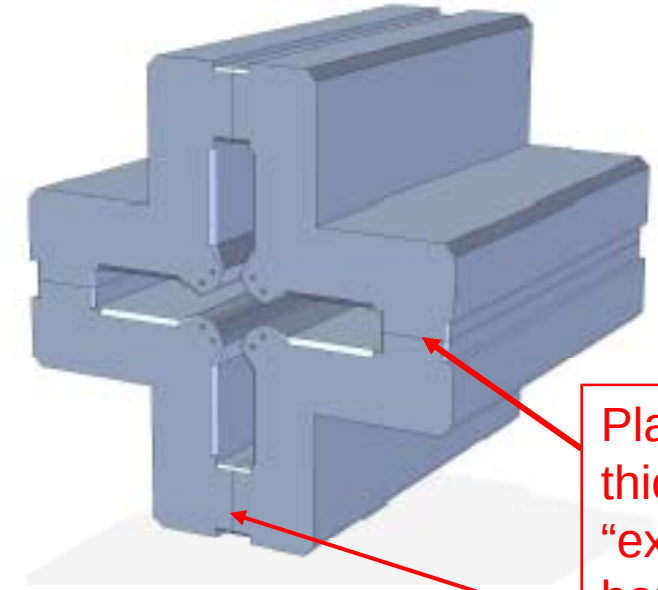


Paul Bellomo, Antonio de Lira,
David MacNair and Briant Lam





Cherrill Spencer

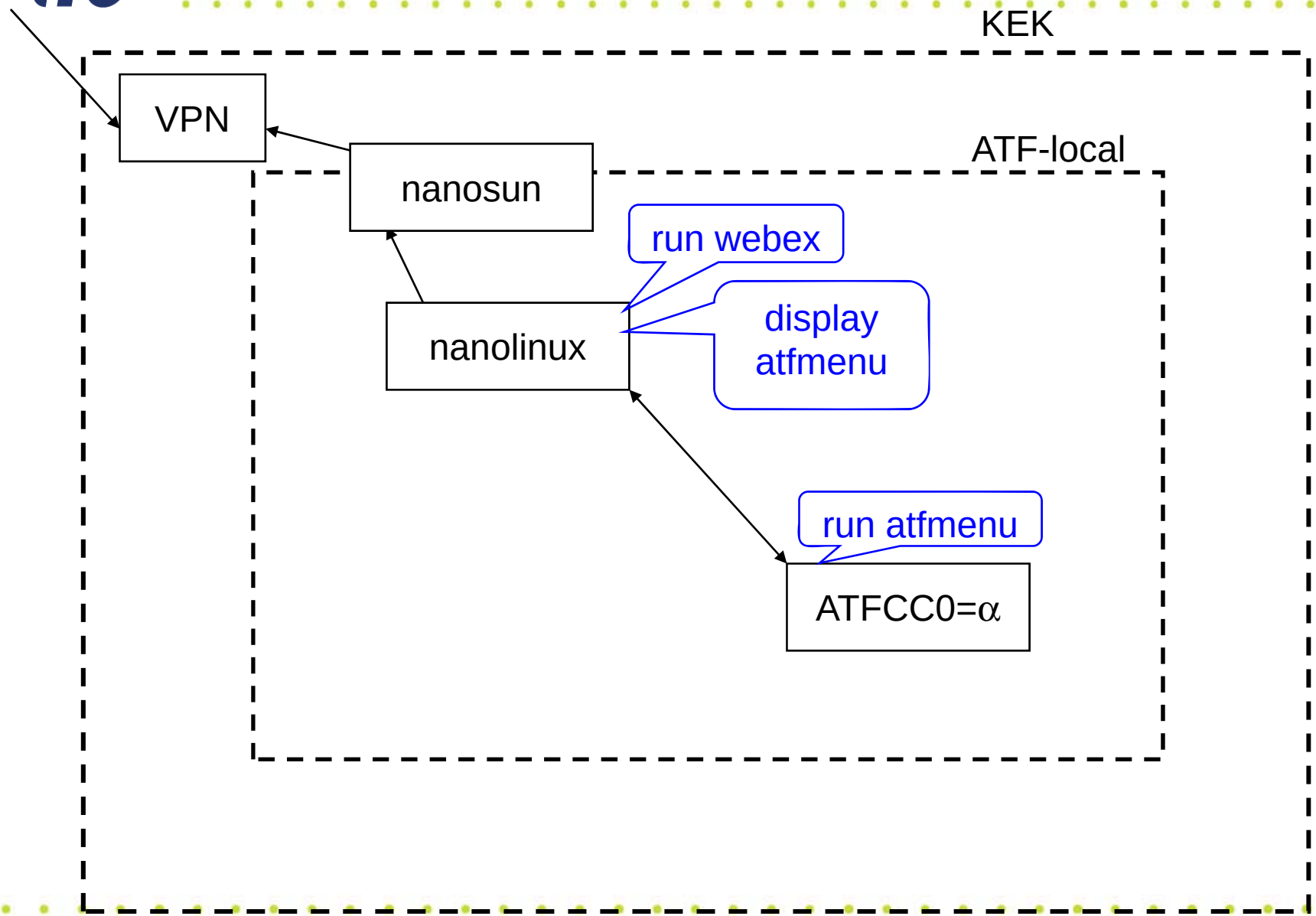


Place a very flat and precise thickness shim in each split plane to “explode” the quad and enlarge the bore diameter.

Remote Participation

- Discussions with KEK started- need to formalize arrangement.
- Current best suggestion:
  - **ATF menu run by shiftee in control room on nanolinux (or equivalent).**
  - **Webex also hosted on nanolinux, with desktop sharing + voice callback (paid by GDE).**
  - **Remote participants access webex conference (maybe by use of VPN into KEK). Display of control menus by request to shiftee.**
  - **Access to particular experiment controls/data via VPN (nanosun allows access to ATF-local network through nanolinux if required).**
- Other options would involve the use of open source alternatives (VRVS, VNC, Skype) through a similar arrangements.
- Need to test (also make sure not putting excessive load on ATF-local network).
- Un-monitored/un-authorized control of ATF beamline equipment a most definite NO!

Remote Participation



Tests of Webex for remote participation