LARP – technical planning
Steve Peggs

Now is the season for intensified communication between CERN and LARP:

Oct 1    New LARP budget for FY07
Oct 4    This meeting
Oct 11   LHC Joint Oversight Group (DOE & NSF)
Oct 16-20 CARE LUMI-06, Valencia
Oct 25-27 LARP Collaboration Meeting
Oct 31   LARP Executive Committee meeting
Nov 13   CERN-US Committee mtg
## FY07 budget (Oct 06 – Sept 07)

### Program Management ($2.2M, 20%) includes
- Toohig Fellows Calaga (AS) 50% at CERN, Felice (MRD)
- Programmatic Travel and Management (Labor)
- Contingency ($0.6M, 5.3%)
Accelerator Systems ($3.6M, 33%)

Four Hard Deliverables jointly identified by LARP and CERN:

1) Luminosity Monitors ($1.0M)
   A review held on April 24 noted good progress. FY07 is crucial.

2) Tune Feedback ($0.31M)

3) Beam and Instrumentation Commissioning.
   A vetting procedure needs to be established to ensure excellence.
   Part of “Long Term Visitor” planning/issue

4) Rotatable Collimators ($0.8M)
   This longer time scale task is ramping up
AS – continuing tasks

Schottky Monitor ($0.12M)
   Successful, winding down.

Interaction Region and Hardware Commissioning ($0.48M)
   + significant financial support for HC from FNAL & LBNL
   HC Memorandum of Understanding is days away from done
   In excellent shape & hands (Saban & Lamm)

Cleaning Efficiency Studies ($0.05M)                Nearing completion
Tertiary Collimator Study ($0.02M)
Irradiation Studies ($0.08M)                       Increasing interest

Electron Cloud ($0.20M)                            Code development
IR & Beam-Beam ($0.27M)                           Re-evaluate after Oct CARE/Valencia mtg
Beam-Beam Wires ($0.15M)                         RHIC is the only test-bed. Observables?

Last 3 items – Accelerator Physics under Fischer – need careful attention
at the Collaboration Meeting, Oct 25.
AS – NEW tasks

AC Dipole ($0.08M)

Needs integration with (and communication from) new LHC effort

Task leader Sacha Kopp is from University of Texas at Austin
- is also seeking (modest) NSF funding
- (How) does LARP incorporate new institutions & funding sources?

New Initiative Feasibility Studies ($0.02M)

Place holder (this year). LER? Longitudinal photon monitors? ....
Magnet R&D ($5.2M, 47%)

One Hard Deliverable:
“Demonstrate by 2009 that Nb$_3$Sn magnets are a viable choice for an LHC IR upgrade”

Lucio has already shown that:
FY07 is an exciting transition year
Initial TQC/S results are very promising
Length experiments are coming on-line
Studies and Designs for the next steps are ramping up

What are LARPs technical goals then (assuming success)?
Continued R&D collaboration with CERN/CARE
LARP is an R&D program
U.S. magnet construction (if any) would be separately funded
Magnet R&D collaboration

LARPs mission statement:

1) Help LHC make more luminosity

2) Exploit/develop/maintain U.S. accelerator science and technology by performing cutting edge R&D

CERNs perspective on LARP may be different. For example,

1) Help LHC make more luminosity

2) Maximize the funding stream from the U.S.

Superficially, this makes CERN appear more interested than LARP in a short U.S. production run of IR upgrade magnets!

In fact, it is in all our interests for CERN to write an institutional letter of support/collaboration for the LARP technical program.

Our DOE allies crave such formal evidence, in their efforts to extrapolate LARP funding “guidance” beyond FY09
Enhanced technical communication

Use/modify 4 existing mechanisms

1) More CERN attendance at semi-annual collaboration meetings
2) Re-invent the CERN-U.S. Committee (“done” - management?)
3) Observe at (participate in) DOE reviews
4) Regular phone, video and webex-style conferences

Liaisons

1) LARP “local leader” - currently Limon
2) CERN L2 linkmen work with LARP L2s
3) “Long Term Visitor” CERN linkmen