

Instrumentation Handoff

A. Ratti

CM15

Nov. 2, 2011

Outline

- Overview of LARP-CERN collaboration on beam instrumentation
- Status of each instruments
- Feedback from CERN
- Conclusions

Collaborative Efforts

LARP works with CERN in different ways

1. LARP and CERN equally involved in the developments and implementation
 - AC Dipole – each lab built a system for own collider
 - Tune and Coupling Feedback – System developed and tested in RHIC, CERN implemented in LHC
2. LARP did studies and provided prints, CERN implemented in LHC
 - Schottky Monitor – FNAL built processing electronics modeled after the Tevatron's
 - Synch Light Monitor – study by LARP, fabrication and installation by CERN
3. LARP did most of the work, CERN provided local support only
 - Luminosity Monitors

Handoff Overview

- Directly proportional to the relative level of effort in the development of the instruments
- Most instruments complete
- Not surprisingly lumi monitor is the only one with some action items
- This presentation is the result of a discussion at CERN in July 2010 between LARP and CERN's points of contact

Tune Feedback and AC Dipole

Tune Feedback

- Concepts developed in RHIC
- CERN implemented the LHC system
- RHIC was ideal test bed for both
- Since CERN did the final implementation for the LHC **no handoff was needed**

AC Dipole

- Very active collaboration between FNAL, BNL and CERN
- Each lab implemented own system
- **No handoff was needed**

Sync Light and Schottky

Sync Light

- Led by SLAC through “LTV”
- Implementation at CERN
- No handoff needed

Schottky

- Beamline hardware built by CERN to FNAL print
 - Documents @ CERN since production
- Electronics by FNAL
 - Documentation provided in EDMS in 2008
- LAFS following software development

Luminosity Monitor

- Built by LBNL, installed at CERN
- CERN is contributing the software
 - Cable and gas system installation
- LBNL is providing system documentation
- Website
- eLog for hardware commissioning
- Open items:
 - Amplifier assembly document
 - Spare system delivery
 - Return hardware on loan (in both directions)
- Plan to complete in FY11

Summary

- LARP contributed to various degrees multiple instruments
- Some developed jointly
 - Easier handoff
- All installed in the LHC
- Handoff is nearly complete
 - Lumi action items identified
- While the instruments are completed, CERN welcomes LARP continued contribution into operations