



Projects and Testbeam needs for Central Tracking in 2010 – 2013 : Gaseous Tracking (TPC)

First Iteration

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ILC TB Workshop Orsay - 1st Preparatory Meeting

May 26, 2009

Preamble

- Information collection is just started;
- It's hard to make plans for next 4 years in short time;
- Very preliminary feedback
- Mainly based on
 - ILD LOI
 - PRC2008
 - LCTPC MOA(2008)

Plans

Table 1: LCTPC R&D Scenarios for Large Prototype and Small Prototypes.

		Large Prototype R&D
Device	Lab(years)	Configuration
LP1	Desy/Eudet(2007-2009)	Fieldcage \oplus 2 endplates: GEM+pixel, Micromegas+pixel <i>Purpose: Test construction techniques using ~ 10000 Alice/Eudet channels to demonstrate measurement of 6 GeV/c beam momentum over 70cm tracklength, including development of correction procedures.</i>
LP1.5	F.L.-Cern/Eudet(2010)	Fieldcage \oplus 2 endplates: GEM+pixel, Micromegas+pixel <i>Purpose: Continue tests using 10000 Alice/Eudet channels to demonstrate measurement of 100GeV beam momentum over 70cm tracklength, in a jet environment and with ILC beam structure using LP1.</i>
LP2	F.L.-Cern/Eudet(2011)	Fieldcage \oplus endplate: GEM, Micromegas, or pixel <i>Purpose: Prototype for LCTPC including gating and other options, demonstrate measurement of 100GeV beam momentum over 70cm tracklength, and in jet environment and ILC beam structure, test prototype LCTPC electronics.</i>

Plans (cont.)

- In 2011, UV lamp to produce a lot of ionization by photo-electric effect is foreseen .
 - This would allow to see the distortions produced by an ion sheet with the ILC time structure.
- 2010 – 2013, detailed design of the LCTPC electronics and endcaps will take place, final prototypes to be evaluated in test beams.