

W. Dulinski: Demonstrator telescope chips

Wojciech brings the most recent version of the Strasbourg telescope. It's about 10cm long. Distance between planes can be < 5mm. 20 complete sets of unpopulated PCBs (proximity for imager, MimoTel, auxiliary) available. 15 sets will be finished by DESY. Clock tree and clock root boards. Flat cable connects proximity and auxiliary board. Test for MimoTel mid-January. Two wafers with many structures just back from foundry. Contain MimoTel, Imager, Mimo*3M, (also L?) Most chips for Star. Will be shipped to Berkeley and diced there.

M. Winter: Development for final telescope chips

Biggest bottleneck will be chip characterization. Work to be shared by different partners (France, DESY, INFN) M16 is first prototype for digital chip. Tests will be done in summer 2007. Final chip can go to fabrication end 2007. Design for zero-suppression has not started yet. Prototype: summer 08? Baseline discussion is need:

- How many discriminators per column?
- Flexible clock frequency?
- What resolution over which area?
- Readout frequency?
- Sensor characteristics?
- When is it really needed?

L. Maczewski: Mimo*2 tests @ DESY

E. Corrin: Status of DAQ development

Level 0 DAQ integration is complete: Bonn prototype with Strasbourg R/O and TLU are working together. Now need to agree on data format and interface definitions.

G. Claus: Status of Strasbourg R/O system

Trigger and synchronization of multiple boards are working. CDS will be implemented by January next year. The existing boards could be upgraded if they are sent back to Strasbourg. Rate tests were performed. Maximum rate seen with 6 boards is 30Hz. Could be 40 Hz if "veto frames" are used. A problem has been seen in Mimostar chips with fake hits. Seems to be sensitive to cable length. It will be more efficient if the existing Strasbourg R/O system will be used and encapsulated for use in EUDET.

L. Piemontese: EUDRB

Some problems seen in first test. Fixed. Current plans: Interface M*2 end '06, Sparsification: spring '07, Several boards together: summer 07.

D. Cussans: TLU

TLU available and working. Tested. Currently 2 available. More can be built. Two R/O modes: Simple trigger/busy and trigger/busy + trigger number clockout. LVDS signals on RJ45 connectors. Direct connection for PMTs including power supply. TLU could be developed further to run with self-triggered devices to become "Tagging logic unit".

F. Zarnecki: Telescope simulations

Results of analytic calculations have been cross checked with GEANT4 simulations. Good agreement. Many configurations have been checked with the analytic calculation. Optimal configuration depends on energy of beam and thick of DUT. For thick DUT a wide arm geometry is optimal at low energy. At higher energy a very compact geometry is best. Interest in looking into alignment issues.

General discussion:

Baseline of demonstrator:

- 2+2 Telescope planes, 1 DUT plane
- Mimostar 3M sensors for Telescope
- EUDRB readout
- CDS and data reduction on EUDRB
- Frame rate ~ 1 kHz
- DAQ based on Mannheim/Bonn prototype

Upgrades of demonstrator:

- HiRes plane

Milestones:

#	Name	Date	Partner	Description/Remarks
1	TLU	18 Oct 06	Bristol	TLU working. Ship to Geneva.
2	DAQ0	18 Oct 06	Geneva	Bonn+Strasbourg DAQ + TLU work together.
3	FE0	15 Jan 06	DESY	15 Populated FE board sets with sensors (limited tests) available. Ship to Ferrara, Geneva, Strasbourg.
4	EUDRB0	15 Jan 06	Ferrara	EUDRB board partial functionality. Ship to Geneva
5	DAQ1	5 Mar 06	Geneva	DAQ partially integrated with EUDRB
6	EUDRB1	5 Mar 06	Ferrara	EUDRB board tested with FE board set and sensor (no sparsification). Ship 1 full set to Geneva.
7	FE1	5 Mar 06	Strasbourg /Geneva /Ferrara /DESY	FE board sets fully qualified
8	EUDRB2	2 Apr 06	Ferrara	2 EUDRB boards synchronized. Ship 1 set to Geneva.
9	DAQ2	30 Apr 06	Geneva	DAQ fully integrated with two full FE board sets + EUDRB
10	TB0	30 Apr 06	DESY	Mechanics and TB infrastructure ready for integration

11	DEMO0	2 Jul 06	DESY	Demonstrator available
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Open questions:

- Characteristics of final sensor:
 - What do different DUTs really need?
 - What resolution of which area?
 - What frame rate?
 - When is it really needed?
- DAQ
 - Data format
 - Interface definition for DUT

Next Meeting:

25 January 2007, Geneva