ATLAS Strip CMOS Fortnightly Meeting - Minutes of 3rd June 2014 5pm CET

Attendance: C.Buttar, A.Grillo, A.Blue, D.Maneuski, I.Mandic, J.Zhang, M.Warren, R.Turchetta, R.Nickerson, R.Teuscher, S.McMahon, V.Benitez, Z.Liang, V.Fadeyev, Dave?

Apologies: Marcel, Ingrid

Next Meeting Date: **17/6/14 Tuesday 5pm – 6pm CET**

Continuing Actions from Previous Meetings

None

Actions from this Meeting

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| Action on | Action | By |
| Alex, Matt, Craig | Consider future arrangement for driving work areas | 17/6/14 |
| Richard | Discuss with Ingrid German funding for submissions | 17/6/14 |
| Richard, Steve | Talk to Steve about CERN agreement over shared submissions | 17/6/14 |
| Vitaliy, Alex | Complete specifications for the first submissions | 17/6/14 |
| Craig | Produce document showing tests, irradiations and schedule | 17/6/14 |
| Matt | Consider best way to readout imminent H35 test structure | 17/6/14 |
| Craig | Gather lists of competences etc.. from participating test groups | 17/6/14 |

Agenda

* Introduction
* Sensor Status
* Test Preparation Status
* DAQ status
* AOB

Introduction

Purpose of the meeting series is to exchange information, including technical when pertinent, and ensure the programme is going forward as it needs to. Meetings will be kept to 1hour. Attendance must include those responsible for the three work areas.

An item of AOB was considered. The US is currently assuming that the German offer to fund initial submissions in the first year implies they need seek funding exclusively for effort and test. It was agreed that Richard would discuss this with Ingrid and that he and Steve would consider setting up a CERN based agreement for shared submissions.

Sensor Status

Vitaliy presented slides prepared by Alex and him. Preparation of the specifications for the first submissions are well advanced. Discussions have taken place, which have included Ivan, Renato, Igor, Alex, Vitaliy ... These will be finalised within a week.

One thing to emerge is that the differences between AMS350 and TJ180 mean that the fraction of the pixel which will have sensor diode will be very different. ~60% in H35 and a few % in TJ. This is because the electronics is in the diode in H35 implementation and outside in the TJ. Whilst somewhat historical this cannot be changed with the time scales involved.

Another difference is that the fast amplifier required to study diffusion vs drift charge collection will have a 30ns rise time in AMS and 100ns in TJ. Renato reported it would take too much time to speed up the TJ and that he felt it was fast enough to enable measurements of charge loss after irradiation.

Documentation for the H35 submission which has been submitted by Ivan is available. Included is a digital read-out section and there was discussion of how to read this which merged into the presentation on test status. It was agreed that Matt would investigate this as a matter of urgency as the chips should be back in July.

Another significant issue to be resolved was that a larger passive pixel array is desirable for source testing, up to 2mm x 2mm. The best way to implement this will be decided soon (within a week), but may involve choosing one pixel size and not variants.

Testing Status

Craig reported on the first meeting about testing and that 8 groups had indicated they would participate. Email lists exist and a spreadsheet of competences was attached to the INDICO page. It is not yet complete and Craig will chase groups about that.

The possibility of using UXIbo to read the first AMS chip due in July was discussed as this is something that Ivan is familiar with. However it was felt that this was not suitable as it is no longer available and would be difficult to source for new groups. It was agreed that Craig and Matt would discuss where to go on the FPGA read-out.

The next meeting about testing will be on the 19th June, which is after the next ASCM but Craig agreed that a document to be discussed at that meeting relating to details of test programme would be produced in time for consideration on the 17th. The intent is that the Strip CMOS test meetings will be interleaved with the pixel meetings so that participation is maximised.

DAQ Status

Matt described updates since the previous DAQ discussion, which were that the group would not consider FEI-n read out and that HSIO2 would be followed with a view to more complex read-out phases of the project. The Atlys board development now has resource identified, which will release HSIO boards for use in the Strip CMOS programme.

In discussion it was agreed that Matt would investigate the use of the Atlys board for FPGA based read-out of the first AMS350 chip.

AOB

It was agreed Richard would circulate reminders for the meetings