

Minutes of WP-meeting 196

Attendance:

DESY: Ralf Diener, Leif Jönsson, Claus Kleinwort, Felix Müller, Astrid Münnich, Volker Prahl, Klaus Zenker

Fuzebox: Paul Colas, Serguei Ganjour, Jochen Kaminski, Shin-ichi Kawada, Takeshi Matsuda, Martin Rogowski, Amir Shirazi, Ron Settles

General News:

Jochen reminded that the deadline for abstracts to the IEEE is coming closer and that everyone interested in giving a presentation should contact Alain.

Also if you want to give a presentation at the collaboration meeting, please contact Jochen.

PCMAG/LP setup, test beam:

Ralf: PCMAG/TRACI/test beam area:

- The test beam area has been cleared and preparations for the maintenance work on the floor are in full swing.
- The mounting structure for the LP has been removed from the PCMAG and brought to the workshop for modifications.
- The maintenance work for the cryocoolers has been postponed until tomorrow.
- There are some considerations if the pipes from TRACI to the detector can be placed better, so that they are not in conflict with PCMAG movements.

LP:

- New glue has been ordered for the construction of the next fieldcage. Also new bending tools are being made, so that test pieces of the new field cage can be tested better.

News from the groups:

Leif gave a status report on the new readout system. He first gave an overview over the readout chain and then described the status of all the components individually: The chip carriers have been produced and the chips are available. Three chips have been mounted already for testing the procedure and the mounting of the full set of chips is imminent. It turned out that there are some problems with the protting: The current epoxies of the company have a too high or too low surface tension and viscosity. They either do not cover all bonds or the glues runs over the edge of the board. New glue has been ordered and will be tested soon. The CERN test setup for testing the SALTRO-16 chips has been modified and is ready for testing the first 3 carrier boards equipped with the ASICs.

The MCM board is planned to be redesigned in a HDI-technology, which allows for a reduced number of layers and a higher density of routing in one layer. The female counterpart of the connectors mounted on top of the MCM board is not available in the correct form, therefore an adapter board has been foreseen, which will form one unit with the MCM board. All these connectors have been delivered and before the full production, a mechanical mockup will be produced to see whether the connectors have been placed correctly.

One standalone MCM board with a single, packaged SALTRO-16 chip has been produced to test the communication with the SRU. These tests were performed at Brussels and Wuhan and were very successful. Both the communication of the SALTRO with the CPLD on the MCM board and the communication of the CPLD with the SRU were good. However the data was corrupt, which was expected since the FPGA code of the SRU has to be adapted to our system.

A Prototype LV-board has been built and is used in test setup. The final LV-board is designed, but awaits the final geometric layout of the setup to finalize connector positions. The LV-boards stick out from the modules and need some support box. As it looks currently, these boxes are not very sophisticated and could be done either at DESY or SACLAY.

The detector control will have to deal with 700 parameters from each module. These will be handled by a DOOCS system. Oliver is working on it.

A short discussion on the construction of the pad plane and cooling followed, where various materials like TPG were mentioned. A new development is a ceramic PCB which has a good thermal conductivity and mechanical rigidity. Jochen has heard of a company which studies how to include cooling pipes for 2PCO₂ cooling inside LTCC PCBs. It was agreed, that one session of the CM should be dedicated to electronics and new pad planes.

Takeshi has talked to Harry Weerts of Argonne, when he was at KEK for a day. Harry said they are working on a 4T- solenoid magnet, for the g-2 experiment to be built at FNAL. It will be used in 2014-2015 exclusively for the g-2 experiment to calibrate the Hall probes for the magnets. But starting in 2016 some time could be given to other users and from 2018 the magnet would not be used by the g-2 experiment anymore. The magnet has a bore of 90 cm and there are also some correction coils available which create a very homogeneous field, but reduce the bore to 60 cm. The magnet is operated with ⁴He and cryocoolers so a standalone operation is planned. The magnet weighs about 20t, so it has a return yoke and a significantly larger radiation length than PCMAG, which however is probably not important at a high energy beam. This would open the possibility for us to have a 4 T magnetic field in combination with a high energetic hadron beam.

Takeshi has received some documentation from Harry, but much information important for us to make a decision are not provided and have to be asked.

Nevertheless, tests in a high magnetic field were deemed to be important and some tests could also be done at different setups. We should therefore think which measurements are important to be done in high magnetic fields and which requirements are necessary. Then the appropriate magnet can be looked for.

AOB:

The next workpackage meeting will take place on May 22nd.