
NCC – Status and plans for test beam

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NCC phone meeting

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631-344-8261

Status

- In 2008 budget –funding start: Oct 2007-Jan 2008
 - for 1 NCC – about \$5M
 - still looking for funding for 2nd NCC (perhaps \$3M)
 - Hurdles to pass
 - Technical Design Report (due Monday)
<https://www.phenix.bnl.gov/WWW/p/draft/seto/ncc/tdr/>
 - DOE Review of physics NCC & FVTX July 9-10 - BNL
 - Must have simulations for major physics topics
 - π^0 , direct γ , χ_C in pp, pA, AA and jets in ?
 - Heavy ions: partons energy loss, medium response, deconfinement
 - pA gluon distributions, CGC
 - spin – ΔG at low x, Collins effect
 - Desperately looking for help in simulations
 - DOE Review of project (cost etc) – Oct
 - We will begin to have these meetings periodically
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CERN Test beam effort

- Sep 4-13 (thanks to Jik)
 - ultimate goal (ambitious!)
 - Brick w/pads+readout, stripixels+readout, W
 - Today
 - Edouard – general plans
 - Andrey – stripixels
 - Jik/Ju Korean status
 - other?
 - discussion (rich will take notes)
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Mechanical design

- mechanical design of the prototype
 - Don Lynch to give it a try
 - need - exact dimensions of the existing plates
 - we will discuss locally how to keep things together
 - mail the drawings to Seoul, then proceed from there;
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Carrier boards

- carrier boards for pad-readout
 - GERBER files for the board carrying 2x2 matrix of sensors is ready in Dubna
 - Dubna also expects actual boards for 2x7 matrix of sensors from production and stuffing next week
 - BNL will order boards (25 boards, we need 20 for prototype) and stuff them
 - Couple of those boards will be sent to Korea (probably in a month if funding available);
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Stacking

- I distributed .ppt file explaining pad stack design ideas (prepared by A.Baskakov, Dubna) to everyone in the last two weeks. Most expensive part is the so called "cover" which is Cu/Au plated polyimid. We need cheaper solution. One such solution would be to use piece of Au plated Cu foil (say 100mkm) soldered to interconnect and glued with conductive glue to Si. To insure the conductivity it will also need to be bonded to Si around edges. To protect bonds it is worth considering covering the sensor with a square piece of selfadhesive polyimid (no idea if commercial adhesive can be dangerous to the bonds or Si - we need to test it or find about other people experience). I attach some colorful comments on how such things were made in the past from Greg Sellberg (FNAL). Dubna will get samples of interconnect boards, covers (as designed) and ceramic spacers again probably next week (ordered end of April). Again due to the difficulties with customs it is difficult to distribute those samples so we are planning to order some from BNL (planning is that before order is processed Dubna will test samples and will tell us if any modifications needed). I suggest Korean group to look critically into design files and decide either to follow or to implement modifications based upon their experience. It will be good to test more then one option. For the whole prototype we need 80 pad structured stacks. We expect at least 28 of those stacks to come from Dubna (first EM segment), we are beginning to work on assembling pad stacks at BNL and hope to get at least similar number of stacks built at BNL, the proposal would be for Korean group to aim for something similar;
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Sensor to preamp cable

- Dubna already ordered FPC cables and we hope to get enough of those to connect sensors to preamps. If they are found good - we will ask Dubna group to order extra cables immediately.
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pre-amp hybrids

- We expect price-quote for preamps today and will order preamp hybrids immediately.



pre-amp board

- Mother board for preamps (small for the test at Dubna and final for the test at CERN) are in layout (GERBER for small is available, Dubna group is planning to use it for preamp testing). Large mother boards (we will need 6 for the test beam even if they will be only 30% populated) will be ordered from BNL as soon as GERBER's are available.
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crate for preamps

- mechanical crate for preamps is ~designed and will be built by BNL technicians.



cable – preamp crate to ADC

- HardMetric cables from preamp crate to ADC crate are to be purchased by Chi (NEVIS). We will have at most 192 channels.



ADC crate

- We will use HBD ADC crate - we need someone to learn how to work with it (crate is available);



DAQ?

Stripixels

Local support at CERN

- From Our Czech friends

