**Action list, Ringberg (4.5.2010), commented**

**Module**

1. (A1.1 from A1 and A13) EOS Geometry: Since the first layer will be split as well, the constraints on the length of the EOS are now more relaxed and can be revised. Define module envelop for clearances (height of active and passive components and connectors, wire bonds etc). Charly Ackermann can do the drawings, but needs dimensions of components

The reduced length of the beam pipe might lead to a re-design of the EOS (Charlie Ackermann).

Include decoupling caps. Get specs from ASIC and Kapton (H. Krüger, P. Fischer)

New Action(s)!

1. (A3) Freeze module lengths (as soon as IR geometry is fixed) (TC)

Most likely fixed, but not yet officially confirmed (Pending confirmation of Belle rotation).

**DEPFET**

1. (A4) Backside connection of DEPFETs: Laci, Rainer: Favourite option: punch through.Tests started by Christian Koffmane, looks promising. Backup solution in work
2. (A28) Irradiate DEPFETs with 10MeV electrons at ELSA, Bonn (Ritter, Müller). Scheduled for June
3. (A60) Find optimal thickness of sensor (from B2GM March 31-April 2)

50 µm ruled out. New baseline: 75µm, may go up to 100µm. Effects of high occupancy not yet studied. 100µm may require (too) high depletion voltage

1. (A58) Qualify SOI wafers from LETI and ICEMOS (23.3.2010)

Test wafers ordered from ICEMOS. LETI has internal discussions, news expected May 5.

1. (A19) Finalize parameters relevant for SOI order (sensor thickness) before March 2010. Need to decide in December: Wait for A58, A60

Thickness for qualification runs need to be fixed in mid June (14). Nevertheless it might be possible to change the thickness till final SOI processing is starting in September 2010.

**Services/Power**

1. (A8.2 from A8.1) Revise functionality of DHH assuming a patch panel can be used to have it farer from the IP. Finalize dimensions and location of these boxes: DHH will be in the Docks, 2m from PXD. Need of local regulation in DHH to be checked (LMU, Kracow). DHH Design by TU.

Position in the docks unlikely, because of radiation. To be checked. No need for voltage regulators. Optical transmission of clock signals in discussion (favoured because of grounding).

1. (A63) Reconsider DHH location (Radiation hardness) (from B2GM March 31-April 2) Covered in A8, drop.
2. (A56) Irradiation tests of SODA/DHH components (TU) (8.3.2010)
3. (A40) Do some voltages need current sinks? Yes: Amplow. Drop action!
4. (A42) Frank Simon to find out about rad hard Gigabit optical links (2.3.2010). Will be covered by DHH designer (Igor Koronov, TMU). Drop.
5. (A43) Get information on the expected radiation level at the locations of the opt. links (2.3.2010) Included in A8, drop.
6. (A51)Test HF properties of Kapton + impedance match (Bonn) (8.3.2010)
7. (A64) Power dissipation in Kapton cables (~ 1 W) (from B2GM March 31-April 2)
8. (A71) Space requirements for patch panel: select possible connectors for data and power (Ringberg, 4.5.2010). KEK needs information in 6 weeks to prepare a mock-up. Stefan Rummel.
9. (A52) Design prototype patch panel (Bonn?) (8.3.2010)

Bonn will do the HF part, otherwise LMU

1. (A53) Test need of regulation and overvoltage protection (LMU, Krakow) (8.3.2010)
2. (A55) Need of shielding between SVD/PXD (discuss in B2GM, March 2010) (8.3.2010). Baseline: one volume both for SVD and PXD with air flow. No shielding
3. (A57) Grounding studies and PS prototype (Santiago de Compostella) (8.3.2010)
4. (A61) Define Interface DHH – Timing/Trigger (from B2GM March 31-April 2)

Igor Konorov in discussion with Mikihiko Nakao. Igor is in contact with Nakao, Thhe action becomes part of the DHH work program, hence drop.

1. (A72) Can the voltage regulators be used as current sink (as needed for Amplow)? (Ringberg, 3.5.2010). Voltage regulators probably not needed. Drop.
2. (A73) Radiation requirements for voltage regulators? – Need to be the same as for FPGA and optocomponents in DHH (Ringberg, 4.5.2010). Not needed if PS outside Belle II. Drop,
3. (A74) What regulation can be achieved using standard power supplies outside (20 m away) (Ringberg, 4.5.2010). Will be tested by LMU & Krakow. Drop.
4. (A75) Are the grounding schemes of other subdetectors next to the PXD (SVF, CDC) compatible (Ringberg, 4.5.2010). Santiago (& F. Arteche) will start study (next B2GM?)

**Simulations/Software/Background**

1. (A17.1 from A17) Simulations should include background. Since background calculations are not yet available, study performance as function of occupancy (Christian). In work. Various backgrounds can be mixed in MC events. Results beginning of March. Procedure is set up but the study still needs to be done (Kolja: for B2GM) -> in work, results to be presented in Ringberg workshop

Not yet ready, but very soon.

1. (A36) Resolution studies should also look at the digitisation noise of the ADC. Done
2. (A37.1) Continue with pair background studies. Look in ‘Traps’ program. There exists another program used by Masako – check!

Understand superb numbers. Who will replace Masako? (23.3.2010). In work.

1. 34.(A48.1) Study effect of beam pipe material on impact parameter resolution (2.3.2010). E.g. use Babar (4 µm Au) as benchmark (23.3.2010) (A67). In work. Need to study possibility of thinner Au. Measurements of Gamma-spectrum during sKEKB commissioning?
2. Prepare background run end of May (from B2GM March 31-April 2)

Need to agree a date. Scheduled and program fixed. Drop

1. (A68) redo random trigger analysis with good runs (from B2GM March 31-April 2) (from B2GM March 31-April 2). In work.

**Mechanics**

1. (A20) Mock up of IR and inner PXD/SVD: IR task force: First space problem has to be solved and drawings need to be prepared. Mock up work started at KEK. Drop.

New actions: new support (for shorter beam pipe) and space for repeaters needed till mid June.

1. (A33) Feedback to Shuji on PXD assembly, installation and service routing
2. (A65) Common engineering drawing database (PXD/SVD/BP) (from B2GM March 31-April 2). Exists, 15Gbyte. Shuji will prepare a DVD and bring it to Ringberg. Done
3. (A69, replaces A26) Re-think the PXD Support (Beam Pipe has become shorter!!) (from B2GM March 31-April 2). In work.

**Cooling**

1. (A35) Check legal constraints for high pressure pipes in Japan (Shuji): Shuji will find out and post it on our TWiki. Done, ok for CO2
2. (A59) Visit NIKHEF for CO2 cooling (23.3.2010). Still needs to be scheduled (coordinate with Imanuel). To be scheduled
3. (A41.1) Valencia, will concentrate on open system without recirculation and eventually upgrade to an recirculation system (23.3.2010). Change: Karlsruhe has a system and will do the studies. Valencia will concentrate on air cooling. Drop.
4. (A62) Study impact of beam pipe temperature on PXD cooling (from B2GM March 31-April 2). Valencia.
5. (A66 Replacing A10, A11) Engineer air cooling (together with SVD, common dry volume) (from B2GM March 31-April 2). Valencia and Karlsruhe & Vienna. Work has started, Drop.

**Electronics**

1. (A27) Need information on NIEL and SEU. NIEL damage might be severe.

Background estimate needed and irradiations with electrons are needed.

Special run with separated beams planned.

1. (A44) Peter Fischer to check effect of electromigration in switcher B (2.3.2010)
2. ( A45) Peter Fischer to write a list of supply voltages and ratings of switcher B (2.3.2010). Done.
3. (A50) Select decoupling caps for the switcher and calculate the contribution to the X0. Also needed for EOS.
4. (A70): Switcher-B irradiation: check annealing (Ringberg, 3.5.2010)
5. (A76) Adaptor chip for switcher-B tests (Ringberg, 4.5.2010). Will be done in July. Laci.

**Operation/DAQ**

1. (A70) Study consequences of 50Hz injection and noise veto (28.4.2010)

Action on accelerator people to optimize injection scheme. No action for us.

1. (A71 from A21) Decision on PXD DAQ due April 2011. Organize monthly meetings and generate list of milestones (28.4.2010)
2. (A77) Test compression rate of clustering algorithm with MC evens (especially background) (Ringberg, 4.5.2010). Extent: also need MC tests of DHP algorithm.

Contact: Kolja.