



6th International Workshop on DEPFET Detectors and Applications



Introductory Remarks

- Recent News from Japan (SuperKEKB approval)
- Ground Breaking Ceremony, April 8, 2011
(during B2GM, April 6 – 10, 2011)
- Comment on the US Involvement in SuperB
- Report from B2GM / TDR Follow-Up Meeting Nov. 2010
- Coming Meeting:
BPAC at KEK (Feb. 15-16, 2011)
- Issues of this Meeting

BRIEF HISTORY OF BEING APPROVED

- ⊙ We submitted “LOI” to KEK in April 2004.
- ⊙ Many failures to convince KEK-DG, Totsuka!
- ⊙ Suzuki took over 2006. He likes SuperKEKB.
- ⊙ High priority was given in KEK Roadmap in 2008.
- ⊙ Many failures to convince Japanese government!
- ⊙ Approved as one of “The most advanced research program” (June 2010)
- ⊙ Approval of the entire project has been given by up to The Cabinet (December 2010), and is subject to be endorsed by The Diet before the end of March 2011.
- ⊙ **Ground breaking is scheduled on April 8, 2011.**



Ground breaking, purposes



- Get broader understanding and support to the project from: politicians, government officials, industries, scientists in the other fields, and general public, especially, young people who love science.



Guests



- Minister of MEXT -> Vice minister??
- High(est) level MEXT officials
- Ambassadors or somebody from embassies in Tokyo.
Maybe science attaches.
- Foreign government, ex. BMBF, DOE
- Lab directors
- Presidents of private industries and scientists' organizations, etc.
- Who else?

- Our Japanese colleagues plan for a press conference,
- Germany will integrate visiting journalists into the celebration
- German ministry of science and education (BMBWF) is also involved
- (Sub)-Event is organized by PR groups of the German institutions, in close collaboration with KEK PR, and led by the PR departments of MPI and the Excellence Cluster „Universe“
- Journalist's invitations are out, invitation to ministry officials and ambassador / science attaché in Japan in preparation
- flyer is being produced (in German and English)
- other (non-German) groups are very welcome to join.

- 09:00-12:00 Symposium (Audience = scientists in KEK)
- 09:00 Lecture to journalists and KEK tour for journalists, especially foreign journalists.
- Posters by young scientists, exchange program between Europe and Japan -13:00
- 14:00 Press conference (both in English and Japanese)
- 16:00 Ceremony
 - Speeches
 - What else? Do you have any idea?
 - Music, animation,...
- 18:00 Party
- (One month later) Symposium to general public in Tokyo

* the program for the journalists will be scheduled on the day before local events (German universities) planned for later

Meeting on Comparative Review of Intensity Frontier Projects, Aug. 2010,
letter to American groups (Dec. 29, 2010)

The clear recommendation from the panel was to fund both g-2 and U.S. participation in the Japanese BELLE-II proposal if possible. The Italian Super-B proposal was not recommended for funding.

Reviewer	Top Rated	Middle	Lowest Rated
#1	g-2	BELLE-II	SuperB
#2	g-2	BELLE-II	SuperB
#3	g-2	BELLE-II	SuperB
#4*	SuperB	BELLE-II	g-2
#5	g-2	BELLE-II	SuperB
#6	g-2	BELLE-II	SuperB
#7	BELLE-II	g-2	SuperB

*Reviewer #4 states this is his recommendation *“If the Italian Government makes a commitment soon”*. If not, he would support BELLE-II over SuperB. In all cases he ranks g-2 third.

B2GM at KEK

Commissioning procedure

Yutaka Ushiroda

No earlier than 2014.10

Roll-in position

Linac commissioning,
MR commissioning phase 1

Main Ring commissioning with BEAST II, without Solenoid, probably with Aluminum beam pipe.

BEAST II

phase 2

Main Ring commissioning with Solenoid. VXD is not installed in Belle II.
Field measurement along beam line.

VXD = BP+PXD+SVD (scenario 1)

Belle II w/o VXD

GCR

Physics Run

<1 month
Global Cosmic Ray w/o B field if required.

Belle II

Belle II roll-in

VXD installation

Belle II constructed

Belle II

Global Cosmic Ray w/ and w/o B-field

Extensive Software-completion Phase (slow-control, online, alignment, PXD-ROI, ...)

VXD

We gained at least 6 months

Roll-out position

Meeting on Nov. 15, 2010

3.2 Comments and Recommendations

The progress on the pixel detector to date is laudable. There have been some setbacks in the production yield of full matrices, but the source of the problem has been understood. At the last review it was recommended that an effort should be given to gain some contingency in the schedule. With the new installation schedule, a contingency of about six months has been gained. The current production schedule of the sensors requires the start of the production before all tests on the full-size sensor and test structures have been completed. Given the gain in contingency, the committee suggests that the collaboration consider the possibility to delay the start of the production of the final sensors until all the tests have been completed. It seems prudent, since there is no significant risk to the new schedule, to **exercise a full readout chain with the final version of all ASICs before production for the final sensors is released.**

We should take this recommendation seriously and push for a test with all ASICs before we start the final sensor production

The detector is of such complexity that careful attention needs to be paid to the electrical isolation of the pixel detector and its grounding scheme, the mechanical system engineering aspects and the interplay between the PXD, SVD and CDC. The current level of effort in these areas is uncomfortably low. We again strongly recommend that the system engineering aspects be strengthened.

Here, we should consider to get external help from grounding experts with proven track record. There is such a proposal, (Fernando Arteché et al., Instituto Tecnológico de Aragón)

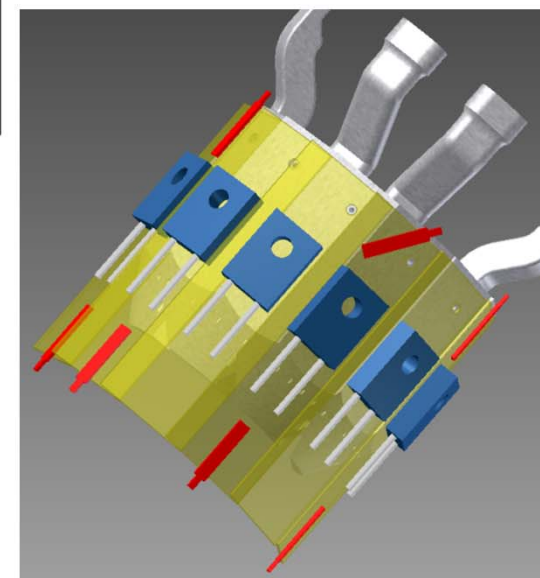
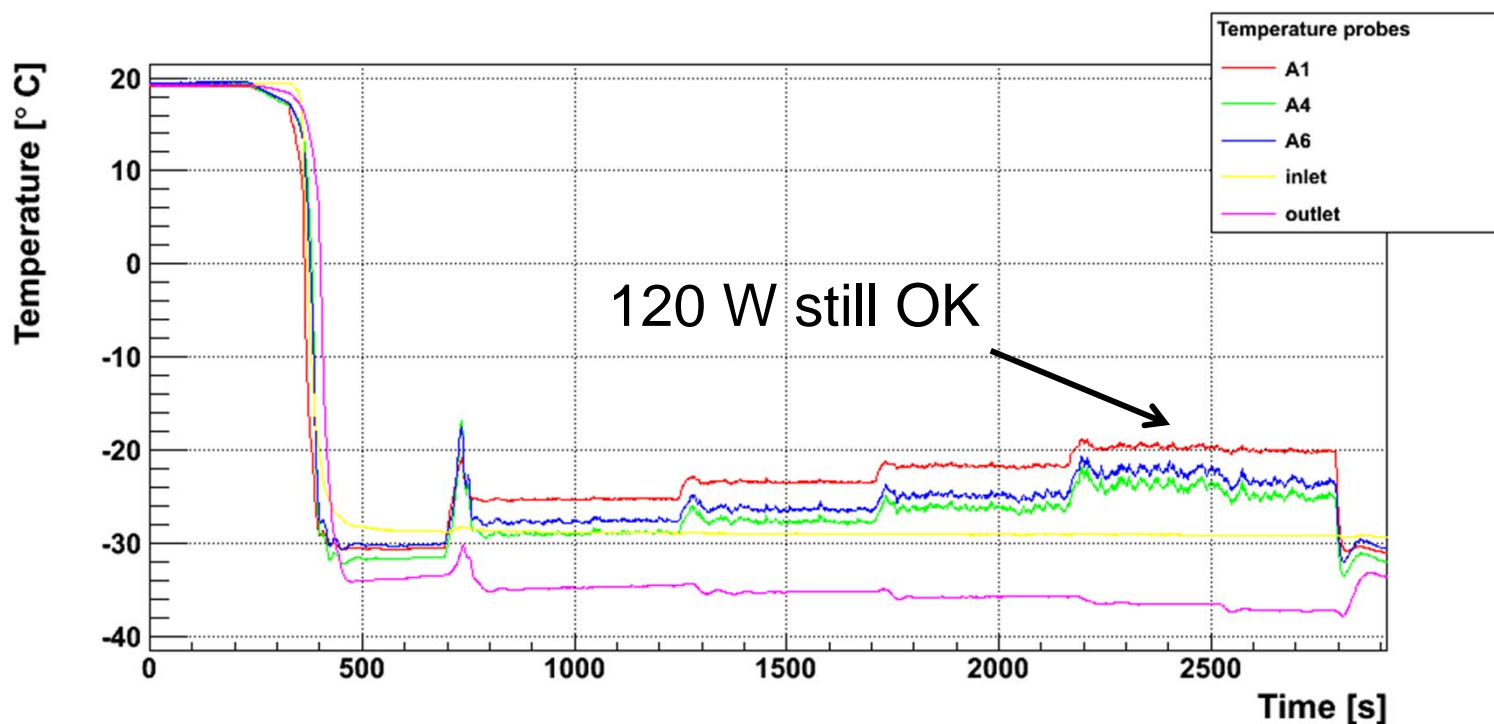
As recent history has shown, it is often mundane but crucial tasks, such as the power supply system and slow controls, that form the weakest link in the operation of the detector. It is a little worrisome that no solid commitments are in place to date for these areas. The collaboration is urged to secure solid efforts on these critical aspects of the PXD detector.

We need to develop a custom-made P/S system

We have lost manpower in the area of power supplies. Our lead institute (LMU) clearly needs support from the collaboration. Krakow offered help and is really needed to contribute on the engineering level.

And we must get external help for the slow control functionality. Here we have a proposal: Prof. Knoll et al., informatics, TUM.

CO₂ cooling of the EOS (ASICs) seems to work !



Measurements from the open CO₂ system in Karlsruhe, using MPI design in Stainless Steel

Next step: set up same experiment at the closed CO₂ system at CERN (end of Feb. 2011)

(...just the few most urgent ones ...)

- Close-to-final ASICs for full test of the sensor prototypes:
full-speed test of large sensors BEFORE
starting the final sensor production (SOI material?)
- Realistic Mockup of PXD (+ SVD) :
 - air cooling of switchers / sensors
 - assembly / installation procedures
(need thinned dummy ladders with resistors)
- Intensify collaboration within the P/S work package
- Outsourcing of Sub-Work Packages
(P/S slow control, Grounding)
- Prepare answers to the suggestions of the Advisory Panel