

# g2p/GEp Beam Transport Meeting Minutes

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**Attendees:** B. Dillon-Townes, M. Ivanco, E. Folts, K. Allada, D. Williams, T. Michalski, R. Lauzé, P. Degtiarenko, A. Gavalya, P. Kjeldsen

The following is a summary of issues discussed during the g2p/GEp Beam Transport Meeting:

- Action Item 14 is closed. We still need to finalize the actual drawing package for the harps to be used. We also need to design the 5.5" M20 BPMs. However, with these two fundamental known items, the harps/BPMs will fit as designed.
- Action Items 16 and 19 will be closed, pending finalization of the raster rate by Kalyan. Kalyan has tracked down good information on the "hole" in the center of the rastered beam. It was not that the pattern was not full, rather its speed increased as the beam was rastered towards the center, creating a reduction in the charge deposited towards the center of the target.
- Testing is ongoing with the BPMs. It was stated that the M20 was only ~1 dB different from the M15 when measured on the bench. We will await further documentation of the data in a table prior to finalizing the decision to use M20s with current (SEE) electronics and 2" beam pipe in the articulating arm.
- It was stated that new cables may be required for the instrumentation on the beamline as the current ones may have been damaged during previous, high energy experiments.
- Tim is assembling high level schedule for handoffs between groups.
- Tim spoke with Arne after the meeting. He is monitoring the calorimeter process on resurrecting the control chassis. Need to determine if it is just the PC104 drive or the board as well. He also stated that the calorimeter is not needed for testing and calibration. He has data on the performance of the calorimeter hardware that can be used for cal. Therefore, it is recommended that the plan to remove the calorimeter from Hall A in January be canceled.
- Tim met Yan Wang and will get this meeting on his and Eric's calendar.

## **STATUS:**

### **OPTICS:**

- No status update

### **MAGNETS:**

- The BDs have been secured. Need documentation of transfer with 12 GeV (Leigh Harwood).
- Schedule for FZ magnet vacuum chamber receipt is January. Need to orchestrate the installation (make sure we get the magnets out of storage by then).

### **BEAM TRANSPORT:**

- The Experimental Definition Drawing is awaiting a few more signatures to complete.
- Slow raster/calorimeter stand to Procurement.
- Upside down girder design complete next week.
- Calorimeter plate design complete next week.
- FZ1 magnet stand design is being finalized.
- Working on harp and BPM drawings and documentation packages.
- Need to order the YAG crystal for the viewer.

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- Still awaiting schedule.
- The list of materials to be procured is being updated – assess \$.

## **RAD CON:**

- Performing simulations for activations.

## **SOFTWARE:**

- Nothing new to report.

## **VACUUM:**

- No status update

## **INSTALLATION:**

- No status update

## **ALIGNMENT:**

- No status update

## **EES – I&C:**

- The calorimeter controller is being worked on by Scott Windham. The PC104 is not functional but the rest of the chassis is. He is marking up the documentation to get it to match the as built.
- Need to get the SW for the calorimeter (probably Arne).
- John Musson is making measurements on the BPMs. Awaiting the comparison table.

## **EES – OPS:**

- EES – DC: promise that PS work will start this week. Once repaired, we can swap out at a convenient time for the PS we need from Hall C.
- We have 1 polarity reversal switch in house. Need to verify that we will have on both (if not, fairly expensive and long lead item).

## **EES – SSG:**

- No status update

## **TARGET/DUMP DESIGN ACTIVITIES:**

- Needs/desires approval for planned viewer on dump – a fused quartz PMT. It needs to be outside the helium bag as the fused quartz is permeable to He.

## **PHYSICS**

- Need to confirm the raster rate for the beam (fast/slow raster combo). Qweak – 1kHz.

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## Action Items:

Action Item #	Date Added	Action Item	Responsible Individual	Due Date	Date Closed
11	9/28/10	Define the settings for chicane magnet current monitoring.	Y. Roblin	10/19/10	
12	9/28/10	Define if instrumentation is required for the low current dump. If so, what should be monitored?	TBD	TRACK to close	
14	10/5/10	Need to assess if two harps will fit on the articulating arm.	L. Dillon-Townes	10/12/10	11/16/10
16	10/5/10	Understand why there is a hole in the center of the rastered beam that comes from the faster raster/slow raster combination. Stated to be a waveform generator issue. Clarify this. If not HW, then probably SW?	C. Cuevas B. Gunning	TBD	
17	10/5/10	Get Accelerator Ops involved in reviewing the LC dump monitoring issues. New item 20.	T. Michalski	10/26/10	
18	10/19/10	Set up separate subject meeting on BPM, alignment, harps, calibration issue(s).	T. Michalski	10/26/10	11/16/10
19	11/9/10	Pull together requirements for the rastered beam and any details on the issue with a "hole" in the center of the slow raster beam.	K. Allada	11/23/10	11/16/23
20	11/9/10	Get Accelerator Ops involved. Either Eric Forman, Yan Wang, or alternate.	T. Michalski	11/23/10	
21	11/9/10	BPM performance table – M15, M20, electronics	O. Garza/D. Williams	TBD	
22	11/9/10	Get calorimeter out of Hall A for testing/calibration and replace with a beamtube. <ul style="list-style-type: none"> <li>• ATLis for having the work performed – Jan/Feb timeframe</li> </ul> <b>CANCEL – Arne does not need the actual calorimeter to perform testing or calibration.</b>	TBD	1/?/11	11/16/10
23	11/16/10	Verify polarity switch for FZ magnets. We have one spare in house if needed.	R. Lauzé	12/30/11	

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## **Design Decisions:**

Date	Decision Item
8/31/10	The transport line exiting the FZ2 will have no vacuum connection to the target chamber. A beryllium window will terminate that line.
8/31/10	M20 BPM's were decided to be used on the transport line exiting the FZ2.
9/14/10	The Target will only be set at 80° and 90°, not 70°, per Al Gavalya.
9/14/10	The gap between the beam tube end and the target window was discussed. It should be minimized – consider 1 cm as a maximum gap. Re-opened during 9/21/10 meeting – look at using helium bag. Will use helium bag – issue closed.
9/30/10	The requirement for BPM accuracy is 0.1mm – per discussion at BPM requirements meeting and subsequent analysis/e-mail from K. Allada.