

# g2p/GEp Beam Transport Meeting Minutes

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**Attendees:** T. Michalski, P. Kjeldsen, R. Lauzé, A. Camsonne, D. Williams, JP Chen, Z. (Vick) Chen, L. Dillon-Townes, P. Degtiarenko, K. Allada, C. Curtis, A. Saha, Y. Wang, T. Delacruz

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

- Due to PAC next week, and Ron becoming a grandfather again, we are cancelling next week's meeting. We will resume the following Tuesday, April 5<sup>th</sup>.
- We continue to sort out the details regarding the FZ magnet PSs
  - The AI magnet has been fixed and tested. It will be an acceptable 2<sup>nd</sup> load on the FZ1 PS.
  - Vick has the action to see if the AI magnet will fit in the proposed, existing stand. If a question arises about fit or potential modification, see Neil first, then Butch.
  - We continue to pursue getting at least the PS identified for the FZ2 magnet out of Hall C. Joe feels it is necessary to hold onto it as a backup for a PS which is acting temperamental (confirmed that it is not the PS intended for the FZ1). Howard confirmed this after the meeting. We continue to pursue this avenue. Need to discuss contingency plans. Mark Jones and Steve Wood are aware of this desire get the PSs.
  - Polarity switch identified. Let's get it procured via a collaborator. JP has the action on this one.
- 6MSD planning and scheduling baseline has been developed. Tasks have been aligned to maximize the efficiency of the Survey, Installation, and Vacuum groups. The current scheduled completion date for beamline installation is October 10<sup>th</sup>. Final checkout is slated to begin at the beginning of November. Therefore, limited float is in the schedule. This means that we have to work hard to maintain work to the plan.

## **STATUS:**

### **OPTICS:**

- Yves is updating orbits for different energy and target positions (location and angles).

### **MAGNETS:**

- Nothing new to report

### **BEAM TRANSPORT:**

- Region 1 – PS shielding box – will use the proposed cooling/filtering system – probably less expensive than designing and building something new.
- Region 2 – nothing new to report
- Region 3 – FZ1 stand design – awarded - \$10k under estimate and great delivery date. FZ2 stand – review with Survey, Installation, Vacuum.
- Material: first large bellows tested and it leaks – testing 2<sup>nd</sup> and returning 1<sup>st</sup> to supplier
- Harps – verify with Arne – prototype fork – preliminary bid on most parts – get parts ordered

### **RAD CON:**

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- Working on dose calculation. LC Dump – use thermocouples and ion chambers. Pavel to review preliminary placement of ion chambers with Kelly Mahoney.

## SOFTWARE:

- Tim needs to verify timing is schedule meets what was given by Omar.

## VACUUM:

- No status update

## INSTALLATION:

- No status update

## ALIGNMENT:

- No status update

## EES – I&C:

- Nothing new to report – no status on BCM and BPM testing. Plans are in place, awaiting Beam Study time, 3<sup>rd</sup> in the queue.
- Minor issues with calorimeter controller and PC104 – working details with Sue.
- Harp and receiver electronics in design and fab.

## EES – OPS:

- Nothing new to report

## EES – SSG:

- Safety systems and MPS review on Monday. Actions added to these meeting minutes.

## TARGET/DUMP DESIGN ACTIVITIES:

- No status update

## PHYSICS

- Readiness review tentatively set for April 22 – awaiting confirmation of review team.
- Proposed potential to add 1.1 GeV run with target at pivot. Butch to look at the impact (looks like it will bottom out the travel on the FZ2 stand). After meeting conversation with Yves – stated we had looked at this early on and discounted the run at that time.

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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	By 3/11	
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	
23	11/16/10	Verify polarity switch for FZ magnets. We have one spare in house if needed.	R. Lauzé	12/30/10	3/22/11
35	1/4/11	BCM testing at low current, w/ helicity, in January.	J. Musson / A. Camsonne	3/?/11	
36	1/11/11	BPM testing with new electronics in North Linac	J. Musson / D. Willaims	TBD	
37	2/1/11	Resolve open question on FZ magnet power supplies.	V. Chen	2/15/11	
41	3/14/11	Verify jacket for upside down girder BCM fits.	B. Dillon-Townes	3/22/11	
42	3/14/11	Need a decision on low current dump – thermal threshold interlock? How warm will the LC dump get? – Decision to add thermocouples – Alan G will add. Will have signal for MPS/FSD.	TBD	TBD	
43	3/14/11	What is the required hysteresis required for the FZ1 and FZ2 magnets? What is the range of required current?	Y. Roblin	5/15/11	
44	3/22/11	Verify that the AI magnet can fit in the proposed magnet stand.	V. Chen	4/5/11	
45	3/22/11	Get the recommended polarity switch ordered via a collaborator.	JP Chen	4/5/11	

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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	<del>M20 BPM's were decided to be used on the transport line exiting the FZ2.</del>
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.
12/6/10	Use 5.5" M15 antenna style BPMs in articulating arm!
12/6/10	JP committed to a 2 cm raster, if need be, to accommodate threading the beam through the articulating arm.
1/11/11	Decision to use harps in tune mode rather than low current.