

Report of the First Meeting of the Fermilab Testbeam Committee

July 15, 2014

1 Discussion

This is a report of the first Fermilab Testbeam Committee held on April 23, 2014, at Fermilab. The Fermilab Testbeam Facility (FTBF) is a valuable resource for the HEP community. In the past, it has been customary to approve all meritorious test beam experiments; however, the facilities are on the verge of becoming oversubscribed, which will make it necessary to make programmatic choices. These choices may determine which experiments run, the beam-time they get, and the order in which they run. The goal of the committee is to give advice to the Fermilab Directorate on how to optimize the impact of the facility and its use.

The first meeting was intended to give the committee an understanding of the facility, how it operates, and who uses it. The meeting was very informative and the committee was impressed with the presentations given by the FTBF staff. Lab director Nigel Lockyer welcomed the committee to start and Head of Program Planning Steve Geer outlined the lab's goals for the committee. We heard two presentations about the capabilities of the FTBF in terms of experimental areas and in terms of available beams. A third presentation was about the operations and approval procedure for experiments. The FTBF staff gave us a tour of the facility, which was remarkable. In particular those of the committee who had previously used the FTBF were impressed with the ongoing evolution of the facility and its resources.

We also heard about similar facilities at SLAC and CERN, about their capabilities and structure. One of the goals of the committee is to establish better communication between these three test beam facilities.

The agenda can be seen in Sec. A.

Based on the presentations and discussions during the day, we have developed a list of additional questions about the FTBF and a preliminary list of suggestions. Answers to these suggestions and questions will be crucial to developing recommendations about how to structure the facility in the age where it is resource-limited.

2 Request for more information

- Provide a breakdown of beam users/experiments by the following categories.
 - nationality
 - lab/university
 - experimental area
- Provide a breakdown of types and energies of beams used. Mike Geelhoed showed an example of this for a limited date range. We would like to understand what the full statistics are.

- Do we have a list of requests that the facility is unable to fulfill? Some of these users go to SLAC, some probably go to CERN. Is there a community that FTBF should be serving? For instance, low-energy hadrons or leptons? An irradiation facility?
- Please provide some extrapolations for the usage of the facility for MTEST and MCENTER in two scenarios:
 1. MCENTER as an extension of MTEST;
 2. MCENTER as a dedicated long-term use facility (i.e., exclusive usage for projects like LAR-IAT).

It appears that using MCENTER as an extension of MTEST might allow FTBF to continue to serve all comers. What would the downsides of this approach be?

- Details of personnel currently in FTBF staff and what the requested additional FTEs would do. The current staff and wish list details were partially described verbally during the meeting.
 - include estimate of resources on machine side
- What is the budget of FTBF?

Based on the additional information the committee will be in a position to evaluate changes needed in the selection of experiments and allocation of beam time. We would like to receive this information by middle of June.

3 Preliminary Recommendations

Here is a preliminary list of recommendations and comments based on the meeting.

- Develop a future vision for facility. We did not hear a lot about what the goals were beyond the immediate build-out of the MTEST area. Possible topics of consideration:
 - Estimate what the likely needs of the user base will be in the future.
 - Consider expanding user base outside traditional HEP community. Any vision for such users?
 - Develop beamlines not based exclusively on the main injector? e.g. low-energy beamlines
- Reconsider approvals and delegation of authority. We spent a lot of time discussing the experimental approval procedure in the meeting, in particular the long list and high-level of approvals required for routine tasks. In light of the current procedure, we have some preliminary recommendations.
 - Streamline experimental approval and other procedures.
 - Provide essential support to automatize the approvals that would still be required.
 - Delegate more authority to the FTBF group for routine beam experiments (akin to what CERN and SLAC test beam staff can do).
- Dedicate time and resources to beam tests and development.

- Complete the characterization of the beam lines presented in part by Mike Geelhoed. Establish what other capabilities are possible. A full understanding of the beam composition, intensity, momentum resolution and spot size would be very useful to the user community.
- Establish methods to track performance of users from simple metrics like how many beam-hours are used to downstream questions like number of articles published.
- Consider having regular users' meetings.
- Examine streamlining safety training requirements. How can we ensure that we can turn around a new user within 24 hours of their arrival on site?

4 Next Steps

We look forward to receiving the requested information listed in Sec. 2, at which point we will refine our list of recommendations. We also suggest that the next step will be to have presentations about the future of FTBF from the FNAL Directorate at our next meeting.

A Agenda of the meeting

Time	Length	Title	Speaker
9:30 AM	10m	Welcome	Nigel Lockyer
9:40 AM	20m	Goals of the committee	Steve Geer
10:00 AM	30m	FTBF Capabilities: experimental areas	Aria Soha
10:30 AM	30m	FTBF Capabilities: accelerator & beamlines	Mike Geelhoed
11:00 AM	30m	FTBF Operating procedures, including beam time	Bill Lee
11:30 AM	1h	Lunch	
12:30 PM	2h	Tour of facility	
2:30 PM	30m	SLAC Test Beam Facility	Carsten Hast
3:00 PM	30m	CERN Test Beam Facility	Henric Wilkens
3:30 PM	30m	Discussion	Peter Wittich
4:00 PM	20m	Group photo	

B Committee Membership

- Carsten Hast, SLAC
- Ron Lipton, FNAL
- Jen Raaf, FNAL
- Mayly Sanchez, Iowa State/ANL
- Guy Savard, ANL
- Aria Soha, FNAL (*ex-officio*)
- Henric Wilkens, CERN
- Peter Wittich, Cornell (chair)