Mvtx question and comments

Some of these are already given to Ed.

* include milestones (L2/3 in PMP
* quarterly reports to physcs/DOE
* have a list of external dependencies and mile stones

Make sure there are sufficient low level milestones so they can be followed ~ 1 per quarter per major WBS.

Review costs –

Are there enough risks?

Personnel at different institutions (FTE’s per labor group (tech,eng, students, scientist) noticed also in April review.

How will accounting be done. How will sPHENIX project office interact with LAN,LBNL, MIT to follow cost spending closely (get monthly reports from accounts that have been setup at each institution – worked well for MIT – short monthly report and meeting

Prepare the intro sides for executive session (split the assignment a bit more (looking at Ed’s slides divided the other items (electronics testing acceptance )

**Comments per talk**

**Eds talk**

The sphenix MIE is not yet baselined. Therefore the mVTX cannot be an upgrade to

--PD-2/3 review May 2019 (approval expected Sept 2019)

Management chart has been approved (slide 12 by BNL,OPA)

The mVTX management is well integrated into the sPHENIX management. The mVTX level2 PM is Ming Liu.

Issues and concerns

-integration with sphenix

Cost of carbon fibres

--end wheels, not identical

--high risk in risk

Staves (84) and RUs are purchased by BNL, and will be given to mVTX if approved

**Mings talk**

**High risks:**

Major challenge is the mechanical

End-wheel and insertion mechanism.

Lees talk

Contingency and risk are low on readout integration.

Questions:

We will like to hear more details on potential usage at the carbon fiber shop at LBNL

* how the request between LBNL physics and engineering division is envisioned to be done.
* What is the planned schedule and possible conflict with other activities in the carbon fiber shop (ATLAS,…)
* Please highlight the entries in WBS that involves work at the CF shop.

**Walter S**.

Mechanical setup

The 4 layer assembly is only 1.1 kg

The cold plate structure has to be grounded.

Half shells are tricky to produce. Making detailed drawings for eng at LBNL to evaluate how to produce the

Less mechanical sag with vertical splitting, clam shelled together.

Slide 14-15

Part of the end are Al to have good structural support

Order of assembly – outer shell add layer 2,1 and then 0

Slide 16

Prototype pieces and design about 1 year. (Slide 23..)

Integration

It seems that extending the Be/Al section is not a major concern. C-AD is investigating, and will look into trying to welding parts together.

Once its agreed upon this scope of work should be added to the agreement between sPHENIX and C-AD.

Could we see all the 8 sequences for the insertion sequence?

Camilla service panel discussion

It will be necessary to modify beam pipe

Is there no good alternative if the beam pipe cannot be extended. Is a high risk? Will be known in a few weeks (months). Tolerance requirement for 2mm is tough.

Concerned about the lack of quote’s from LBNL since this is the highest cost. We understand that R&D funds will be transferred shortly so a much better engineering estimate can be made shortly.

There is also a potential issue how to guarantee the schedule for CF production in view of the other activities that the CF shop is involved in.

The contingency of 40% is judged to be too low as BOE was based on pre conceptual design. The methods calls for 60%.

LBNL

Is producing power system already for ITS in ALICE.

Will need to duplicate the test setup, as the test are ongoing for ITS.

(M&S)

(where is this cost in the P6?)

Testing, assembly will be carried out by postdocs/students also by people that comes off lots of experience from ITS; LANL Post Doc will also return to US.

A little ‘we know how to do this attitude’ w/o documentation.

**electronics and testing**

The electronics testing seem well in hand, and well documented.

System has been well tested, twice in test beam.

All final hardware including cooling with negative water cooling present.

Bit error was measured on shorter cable

We will test full-length MVTX cables in the next months

FELIX will be produced with instrumentation; The mVTX will be tested

The testing and FPGA programming will be done at LANL, (Alex. T) . They have 6 months for that purpose. I did not see those cost in the WBS (or are it all done from the R&D).

KPP/UPP.

Include explanation in the PMP

Questions:

*Insertion of MVTX*

Can we see all 8 steps of the insertion i.e. step 1-8 slide 13 in Mironov’s presentation. Do you have a drawing of the beam pipe and the proposed extension?

Are there plans to test insertion of MVTX with a mockup beam pipe?

*Carbon fiber work*

We would like to hear more details on usage of the carbon fiber shop at LBNL

* Please highlight the entries in WBS that involves work at the CF shop.
* Discuss possible conflict with other activities in the carbon fiber shop (e.g. ATLAS,…).
* How many iterations of CYSS, LO-L2 shells, and service barrel are permitted in schedule?

What is your plan for evaluating the commercial carbon fiber vendors while simultaneously engaging with LBNL as vendor?