

Vertexing

- Sensor technology R&D on a broad front, interfacing with MAPS, CCD, 3D DEPFET, and SOI technology development
 - SiD emphasizes chronopixel and 3D
- Vertex choices can be made later than other subsystems
- Focus on areas which need more effort
 - Mechanical design of thinned supports and ladders – recently organized “plume” collaboration (Bristol, Strasbourg, DESY and Oxford).
 - Power Delivery and infrastructure
- Tracker/Vertex alignment was called out in the IDAG report. There is continuing effort in this area.
- I note that the IDAG report includes a SiD requirement for single bunch time stamping in all subsystems. Our answer actually hedged on this. I do not believe single bunch tagging has been shown to be necessary for vertex and may be too restrictive and could discourage collaborators.

Resources and Milestones

Very rough estimates

- Resources

- Sensor technology – continued support of sensor R&D on a broad front, with emphasis on low power, low mass solutions. SiD emphasis on Chronopixel and 3D.
- Mechanical – support for laboratory and university groups to develop and measure demonstration support and alignment systems. X FTE physicist Y FTE eng Z FTE tech w \$\$
- Power – DEVELOPMENT of laboratory and university groups to study powering schemes, pulsed powering, and collaborate on studies of stability. There is no significant ongoing work in this area. At least 3 moderate sized (physicist, tech, eng.) efforts are needed.
- Beam tests – aim to have a test module in a beam ~ 2013

- Milestones – working backwards

- Demonstration of a pulse powered thinned module in a beam – 2013
- Demonstration of individual sensor/readout assemblies – 2011
- Demonstration of a pulsed power DC/DC or serial design – 2012
- Fabrication and measurement of outer support demonstrator – 2011
- Fabrication and measurement of inner vertex support demonstrator – 2012