WBS 1.6 Software

Pre-CD4 workshop at LBNL: We organized a software workshop at LBNL the day before our TC face-to-face meeting, June 9 and 10, to discuss our results and plan for the CD4 presentations and documents. At the same time we discussed also the latest developments and progress in Run-14 calibrations and analysis. These two fronts were the focus of the software group's activities in the report period.

CD4 preparations: During the LBNL meeting we decided to start or complete several efforts that are needed for the HFT performance documentation.
- Reprocess a Run-14 data sample with the latest software updates. This was done near the end of the month.
- Prepare two sets of Simulations, a min. bias and a central Au+Au 200 GeV/c, both including hits from estimated pileup in the PXL detector.
- Prepare software that will allow for the "embedding" of simulated tracks into real events for efficiency studies. The software chain has been developed and some data samples are being QA-ed.
- Prepare performance figures and work on a report. This is in progress.

Run14 (Au+Au 200 GeV/c) Analysis: There are several tasks that are still in progress:
- Tracking performance: efficiency and ghost rates
- Vertex finding and fitting: Improve track vertex association, ranking and vertex splitting
- Alignment: Fine tune geometry and check time dependence
- Other system performance checks

A special effort is put, in collaboration with the infrastructure software group at BNL to define the methods, QA tools and also finalize the detector material in the tracker since the correct representation will result in a precise estimate of its effects on tracks in terms of energy loss and propagation errors due to scattering. Significant progress was made during the report period in this area.