BRAHMS Status

F.Videbaek

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Activities

Plans & Schedule

Activities

Detector design are in final stages.

- Simulations for optimizations. Involves about 2 runs a day with Geant + analysis code.
  - Beam-Beam Counters
  - Multiplicity
  - Drift Chambers
- A good sample of event generator data (AuAu, pp ..) exists on the BRAHMS MDS area.

A **Major re-write of GBRAHMS** the GEANT3 based detector simulations is underway.

- Much better organization of geometry.
- Inclusion of final detector designs.
- General file-stream format (ghits, gtracks, gvolume) not depending of Zebra. General utilities for reading of this into Ntuple, STAF, ROOT, or stand-alone tracking (SONATA++) has been written.
- Platforms:
  - Solaris/Intel (RCF)
  - AIX (RCF)
  - HP (Bergen, Oslo)
  - SGI (RCF, HIRG)
  - WINNT (Texas A&M, HIRG) to be done
  - LINUX (NBI)

Acquisitions

BRAHMS has purchased and is bringing up a dual processor Pentium II WINNT system

- On-line development
- Off-line development

This will be a developing platform for integrating the on-line software (Vxworks, EPICs and Objectivity) and a test bed for analysis.
Texas A&M already has a WINNT system deployed.

Data structures

The design of the raw data structures, and relation to first calibration passes is underway (Helstrup, Bergen).

Evaluation of Analysis Requirements.

As part of the ongoing RCF task force a partial re-evaluation of computing needs have taken place. Summarizes in contribution to that report.

- Dependence of data size on angle & magnetic setting
- Dependence of CPU requirements on angle & magnetic setting

e.g.

Angle setting	Field	Data Size	CPU sec per event
2.3	1/2 Bmax	40Kb	4.63
2.3	1/4Bmax	45Kb	5.35
6.0	1/2	20Kb	1.6

Choice of Analysis Frame

This investigation has taken quite a bit longer than planned earlier in the year. Pros and cons of possible packages are looked at in detail.

1. STAF
2. ROOT or generic C++ framework

In both cases looking at a small prototype which reads GBRAHMS stream output data and feeds these into modules digitizing and analysis the data. A major criteria is that the user modules (ASPs) should be independent of the framework to the highest degree possible.

Example:
STAF tables as defined with idl files are pre processed by a modified stic-compiler (***bric***) such that the user modules deals with a C++ container class rather than tables directly. (see example)

The ROOT environment was setup such that the modules defined in Sonata++ are callable by the framework callable ,and derived from ROOT classes.

Schedule

- A proposal will be put forward to the collaboration in early January for approval.
- The tracking & PID with TOF will be implemented within the Framework by April 98.
- Global detectors & Cross section Analysis i.e. the later DST and μDST analysis should be ready by June 98.

- All of the above items will be used in the mock data challenge representing a significant part of BRAHMS analysis.

Commitment to Objectivity

Part of on-line software

- run information
- detector setup
- calibrations

Off-line

- Anticipated use at this point would be restricted to an event-tag database keeping track of and enabling finding specific data from the event store, likely making use of multiple flat files for events.
- The initial time scale of BRAHMS and the associated uncertainties with Obj-y do not warrant a heavy investment, though in the long run object oriented databases offers many advantages.

With the small solid angle the most likely use of data is fairly conventional with sequential scanning of selected data, and making smaller set for intensive analysis, rather than picking few very interesting events from the total data set based on complicated criteria.

RCF daily experience

- DQS - Needs the improvements with coming version.
- AFS - WinNT (locally, remotely)
- Interactive machines sluggish.
- Common environment on all machines.