Agenda (notes from last meeting)

1. **News from Calice DESY meeting**

   See slides on web, at:

   http://www-flc.desy.de/flc/science/hcal/mainmeetings/nextCALICEmain.html

   Also, encouragement for Fab. to continue add the material corresponding to scintillators to Mokka (ad hoc estimate of $0.15X_0$). Hcal group had done more detailed study already but not included in simulation, suggest contacting Erika Garutti

2. **Progress since 6 Oct.**

- Physics Studies – **Mike, Fabrizio, Michele**
  - Define signal/background samples

    Large, ~1ab^{-1} samples of signal+background events available in .stdhep format (c/o Tim Barklow)
  - Get appropriate physics event generators for these samples (Pandora-Pythia – see Stew B)

    ⇒ **~1k events, 2 processes, .stdhep, through through Mokka – start of Nov.**

    Installed Pandora-Pythia, generated ~1k signal events, read into mokka and passed through TESLA TDR geometry model. Difficulty with Barklow stdhep files from Pandora-Pythia (nominally same stdhep version, 5.01). Mokka reads .stdhep events using libstdhep c/o Willy Langeveld. Contacted Gabriel Musat, who will follow up.

    Started using Marlin framework to study mokka-generated lcio files.

    Next aim is to write out rootuple with observables e.g. invariant mass as first step. [Target is to do this within few weeks,]

Minutes 2

- **Energy Flow**
  - **Clustering algorithms (gNIKI, MAGIC) available as Marlin Packages**

    ⇒ **before Vienna (George/Chris)**

    Alexei R will release his code ~Vienna, a version of MAGIC was already bundled with the Snowmass distribution though not integrated with it as such. From quick check of gNIKI, David was able to make it read LCIO objects within Marlin and writing out results as LCIO collections not major modification. Aim is to be able to switch easily the clustering code used within the particle flow scheme. Interface is via LCIO so should be "straightforward" if clustering and pflow codes allow the collection names on which they work to be specified as inputs. [Wait for Alexei code to be released.]
  - **1st alternative implementation to Alexei R.'s**

    ⇒ ***presentation for Vienna (Mark)***

    Code available when better than 0.45/sqrt(E) *at least within UK*

    Making good progress! In $Z^0 \rightarrow qq$ at 91 GeV , currently achieving jet energy resolution ~ $44\%/\sqrt{E}$ in ~90% of events, cf. ~$41\%/\sqrt{E}$ in ~71% of events that Alexei reported at Snowmass. Mark was able to reach $30\%/\sqrt{E}$ in ~50% of events. Note that due to use of tracking information as part of the clustering, the particle flow and clustering are closely linked and so will not be easy to try alternative clustering schemes. [Expect/Encouraged to make limited release after Vienna]

Minutes 3

- **Global detector design**
  - **Investigate GEAR ability to read SLIC compact // Mokka to write out GEAR ➔ talk to Frank Gaede at CALICE/DESY meeting (DRW/NKW)**

    David discussed with Ties at DESY Calice meeting, said that GEAR files contain much more information than we thought (or described in documentation). Ability to write out GEAR files from Mokka was being considered, clearly desirable to avoid errors in "hand made" files. Perhaps write out as part of the data stream? Mark has passed code he uses to read GEAR info. In his pflow code to Chris, as example for how to do likewise in MAGIC. Seems more promising approach than CGA (slow) for reco. use, but *may* need some additional functionality which exists in CGA (e.g. material distribution between specified points, whereami, etc.?)
  - **Contact SiD re MAPS studies (NKW - 2 weeks)**

    Discussed MAPS as an alternative configuration within SiD with Andy White, Jose Repond at Calice meeting, said I would send the compact XML which defines the geometry of our preferred pixel size within SLIC to them, together with short 2-3 page/slide description of the concept. [Will discuss with Paul about what documentation would be best to send at this stage; *intend to do this before Vienna.*]

    Updated SLIC study of linearity of response to single electrons, 1—500 GeV, see plots at:

http://www.ep.ph.bham.ac.uk/user/watson/misc/MAPS_response.eps

http://www.ep.ph.bham.ac.uk/user/watson/misc/SiD_response.eps

See greater fall-off at the highest energies for MAPS, but apparently better linearity at lower energies than analogue SiD (DRW saw similarly better linearity at lower energy in his original study in Mokka).

[to extend to use Mokka, after Vienna]

Minutes 4

- **GRID use - NKW to contact Paul, Gidon Moont (10/10)**

  NKW now also member of Calice VO, access to DESY dcache. Gidon M. has documented progress with Calice access to grid resources in logfile from grid portal, but not clear (to NKW) what actually done. DRW will try to pursue grid jobs with DESY contacts, NKW will do likewise via Gidon.

- **Admin**
  - **Group wiki (Mark/local Minos people)**

    To be done. Should be relatively quick

Minutes 5

- Other WP support
  - MAPS - Bham
    - ⇒ implement in Mokka asap – NKW – 3 weeks, contact Fab. for help as nec.

    Not done yet. [By Vienna.]
    - ⇒ Check with Paul re. presentation of MAPS concept at Vienna (should show something)

    Neither Paul nor NKW going to Vienna, so no MAPS presentation to be made at the workshop.
  - DAQ
    - ⇒ Determine what studies reqd.

    To be defined, but along lines of simulations of noise removal and clustering in the hardware before the event builder stage. [Need RA's in place and h/w R&D a bit more advanced before will be known precisely which simulations required here.]
  - Mech/Thermal
    - ⇒ What studies reqd.

    Need to know how much radiation the ECAL (+in particular, the glue!) will be subjected to.

3. Plans for presentations at Vienna

1. George (update on test beam data studies)
2. David (update on data/MC comparisons)
3. Chris (update on Magic clustering)
4. Mark (new particle flow algorithm, his session)
5. Nige (update on MAPS simulations, in calorimetry session? Less likely now as neither he nor Paul attending).
6. ~~Fabrizio/Mike/Michele (either short talk or 1-2 slides in someone else's on progress so far)~~

- Minimum aims (for LCWS '06)
  - Our own WW/ZZ separation plot, can we possibly rech 0.3/sqrt(E)??
  - Detector optimisation, some range of detector parameters – length, B field, radius, granularity (longitudinal and transverse)
  - Presentation of MAPS (concept, backed up by some performance indicators – h/w and s/w aspects)