

DAQ key points

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Preamble

- There has been a lot of development for DAQ systems :
 - within ILC groups and other experiments;
 - both hardware and software;
 - much is bespoke, however some (particularly software, but also hardware) aim to be more generic frameworks.
- For a given group of people / sub-detector working in isolation is okay.
- If we are going to run detectors together, the data will need to be combined at some point : data formats, associating the same events from different sub-detectors, etc.
- The crucial question is always where the combination will happen : common hardware, common software, offline ?
- The boundary conditions are : restricted person power, multitude of systems, not throwing away successful aspects from individual components, different component needs, funding for doing new things.

Common solutions / merging

- Completely unified hardware system is difficult, but some aspects can be :
 - Trigger Logic Unit
 - Beam Interface Card
 - ... ?
- Can be merging of software whilst not re-inventing everything :
 - EUDAQ is robust and works well for its needs;
 - CALICE has more needs and e.g. XDAQ / DOOCS / Tango currently offer a wider range of facilities;
 - The approach of reviewing the situation (as part of AIDA FP7 bid) is the right way to go about things;
 - D. Decotigny : “Another solution: general consensus on a framework for ILC
Another solution (P. Dauncey): –require the sub-detectors to follow a general configuration method. The main software calling it is not dependent on the front-end hardware to configure –Generalize this approach to other slow-control aspects ?”
- The conversion and use of LCIO is an issue, but should be addressed with the LCIO experts. Looks like LCIO can meet the needs of test-beam running, but they need to be made aware of issues.

Summary

- DAQ is an obvious area of collaboration and a necessary infrastructure (cf FP7).
- The speakers and I can work on writing some text outlining plans to rationalise the DAQ systems and the effort to produce them.
- Strict recommendations will not always be possible given e.g. a review of systems will be starting or ongoing. Note the many ideas / questions in David's talk.
- Things will develop between now and writing.
- Hopefully the AIDA bid will succeed to facilitate this.