FACULTÉ DES SCIENCES

DAQ Status

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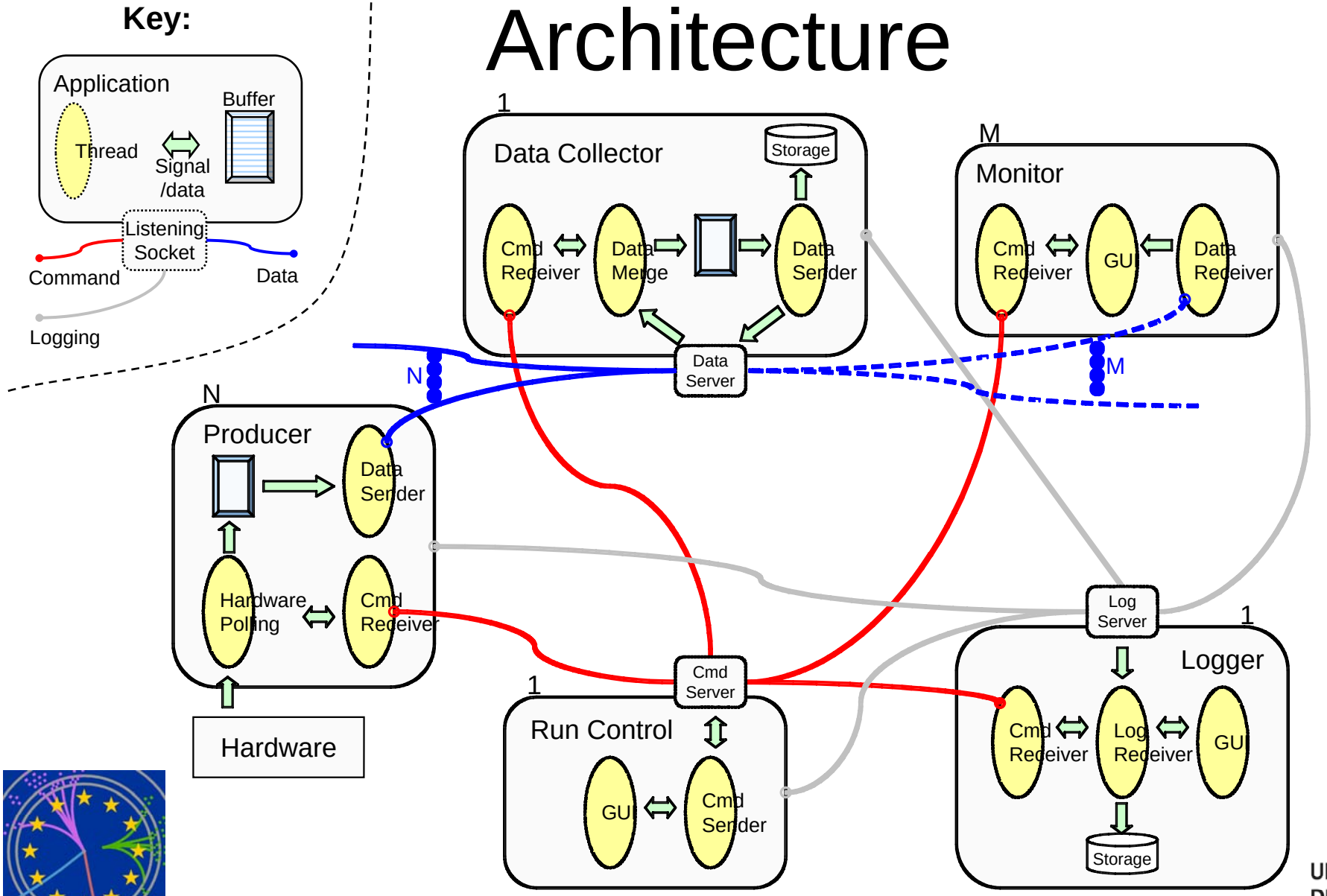
LCIO/Marlin

- Decision to use LCIO/Marlin for data storage and processing.
- Data will be sent within the DAQ in a simple custom format, and converted to LCIO before being written.
- Some issues installing LCIO/Marlin on Mac OS X, but managed to get it working.
- Need to define exact format in LCIO

Architecture



DAQ software

- Have set up a publicly accessible Subversion (svn) repository on our server (129.194.52.98, still waiting for a DNS name)
- Can be browsed at: http://129.194.52.98/wsvn/eudaq/

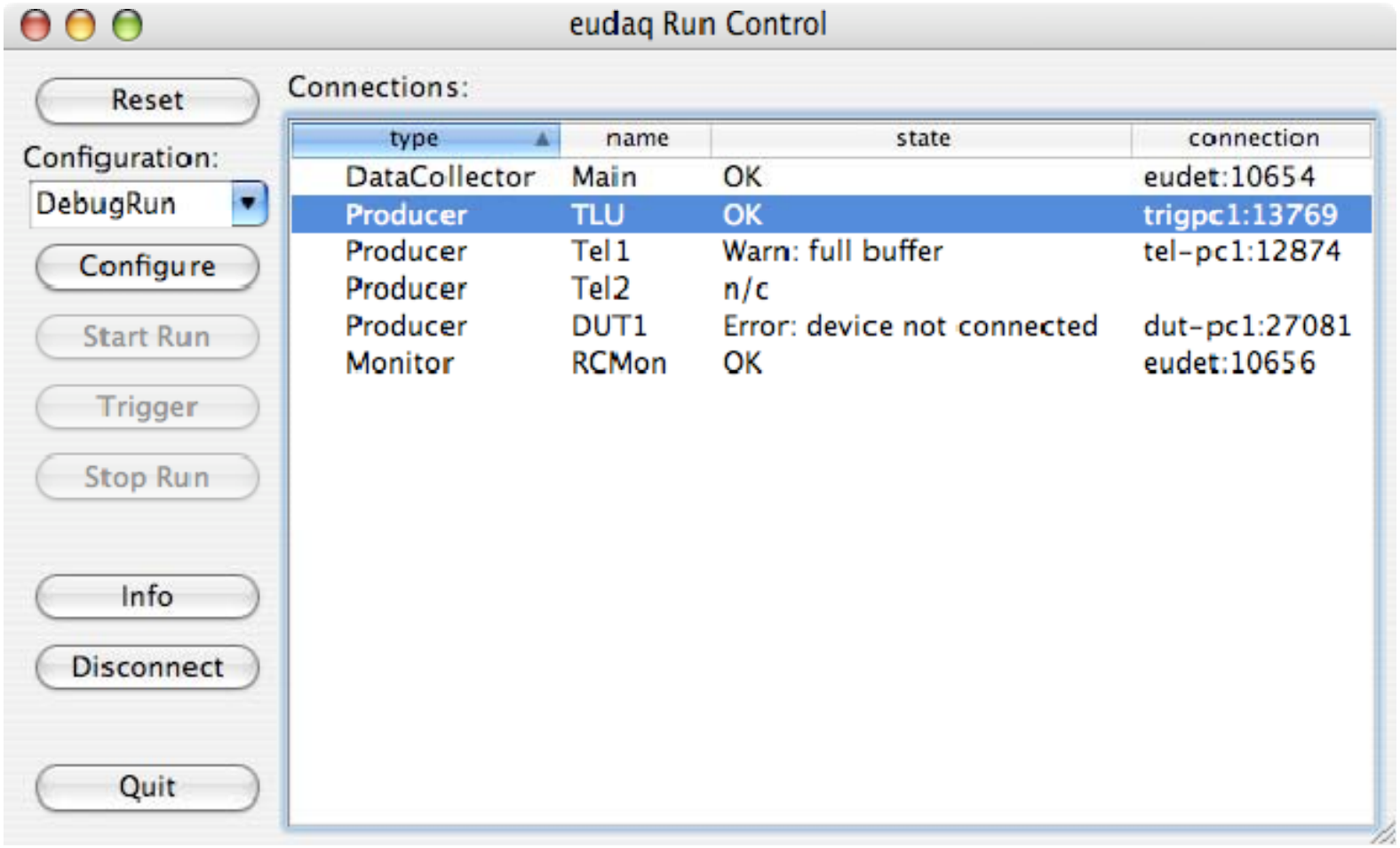
Internal Event classes

- Base class (Event) and derived classes:
- Event(runnumber, triggernumber)
  - EventTLU(timestamp)
  - EventRaw(vector[width*height] of pixels)
  - EventSparse(vector[nhits] of Hit)
    - Hit(x, y, adc)
- Begin/End of Run Events (BORE/EORE)?
- Events can have variable number of frames - represent a bunchtrain in tagging mode.
- All can be serialized and sent over network / to file etc.

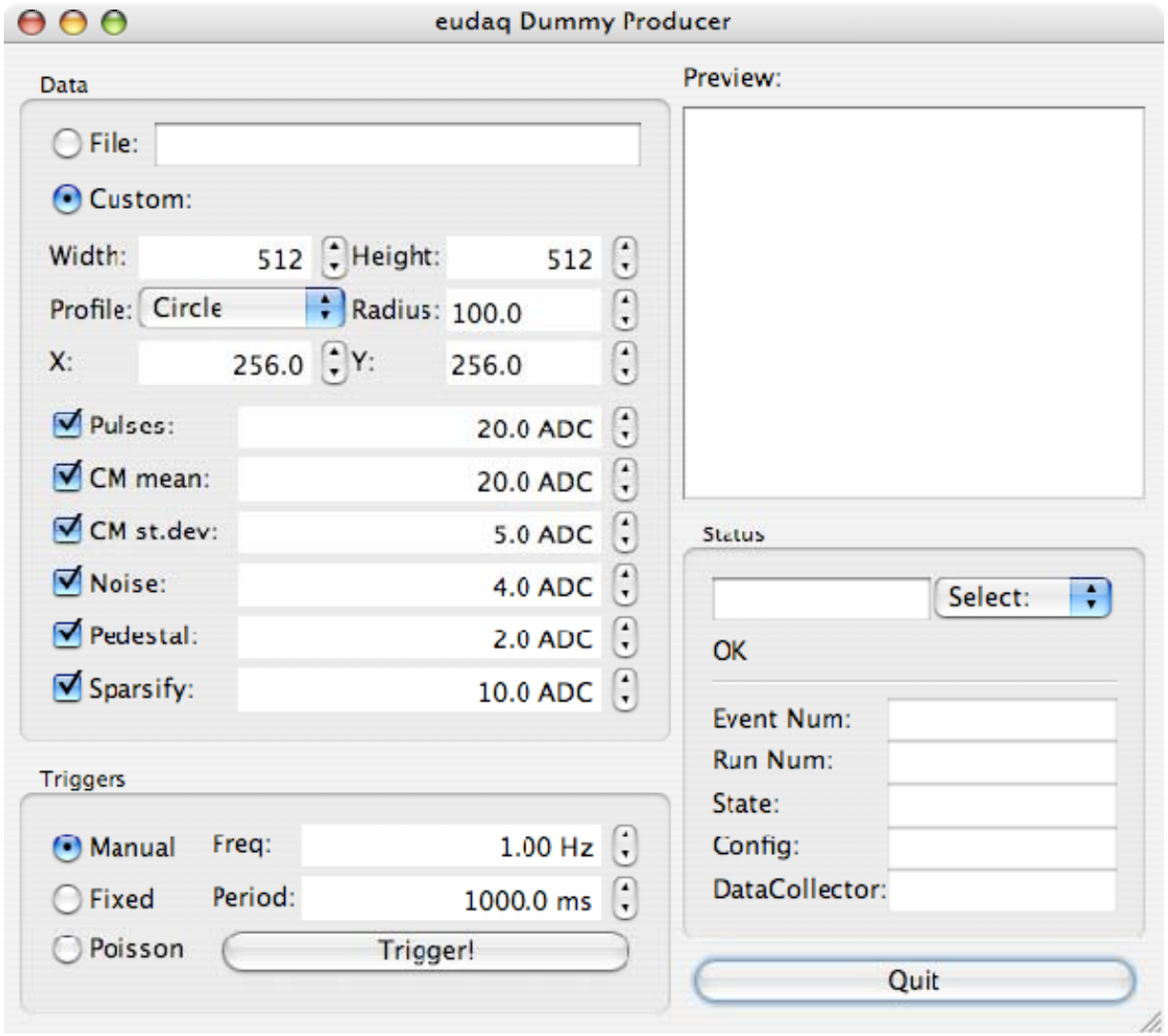
GUI

- Will always be possible to use command line, but a GUI in addition would also be nice.
- Decided to use Qt - easy to use and portable.
- Created mock-ups for Run Control and Dummy Producer.

Run Control


eudaq Run Control
Reset
Configuration:
DebugRun
Configure
Start Run
Trigger
Stop Run
Info
Disconnect
Quit
Connections:
type
name
state
connection
DataCollector Main OK eudet:10654
Producer TLU OK trigpc1:13769
Producer Tel1 Warn: full buffer tel-pc1:12874
Producer Tel2 n/c
Producer DUT1 Error: device not connected dut-pc1:27081
Monitor RCMon OK eudet:10656

Dummy Producer



Remaining

- Before first release:
  - Finish implementing Event classes
  - Implement DataCollector:
    - Combine data from all Producers
    - Write to file (define LCIO format)
  - Make GUI programs functional
  - Write a DemoProducer for people to copy and make their own Producers
- Ongoing:
  - Monitoring
  - Logging
  - Documentation
  - Portability to MSVC / Borland