

# EUDAQ Status Report

Emlyn Corrin, 29 September 2010

- Recent Improvements
- Future of EUDAQ
- Summary
- Some Statistics



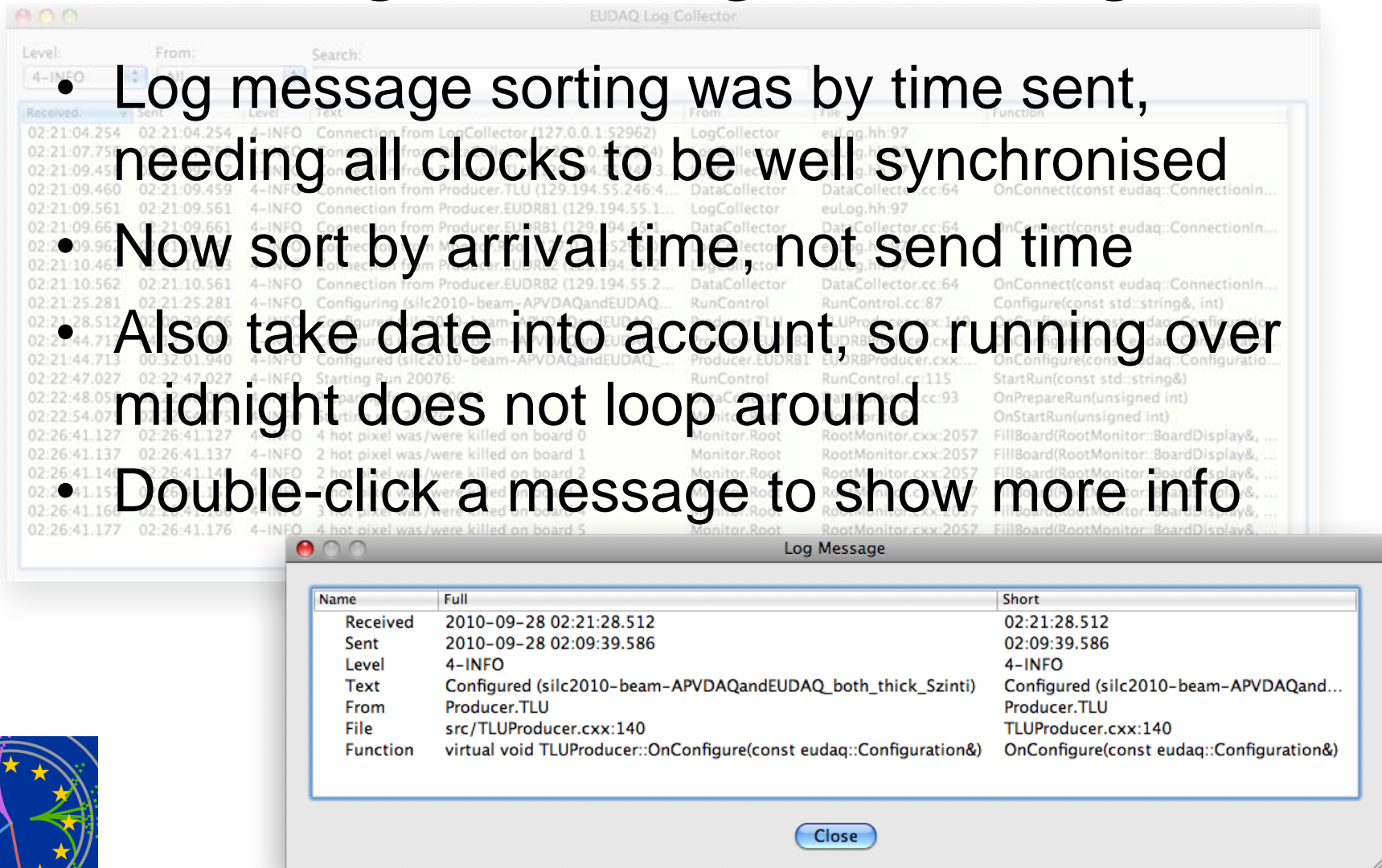
## ➤ Recent Improvements

- Log Message Sorting
  - Run Control Status Display
  - Stability
  - TLU Synchronization
  - User Manual
- Future of EUDAQ
  - Summary
  - Code Statistics



# Log Message Sorting

- Log message sorting was by time sent, needing all clocks to be well synchronised
- Now sort by arrival time, not send time
- Also take date into account, so running over midnight does not loop around
- Double-click a message to show more info



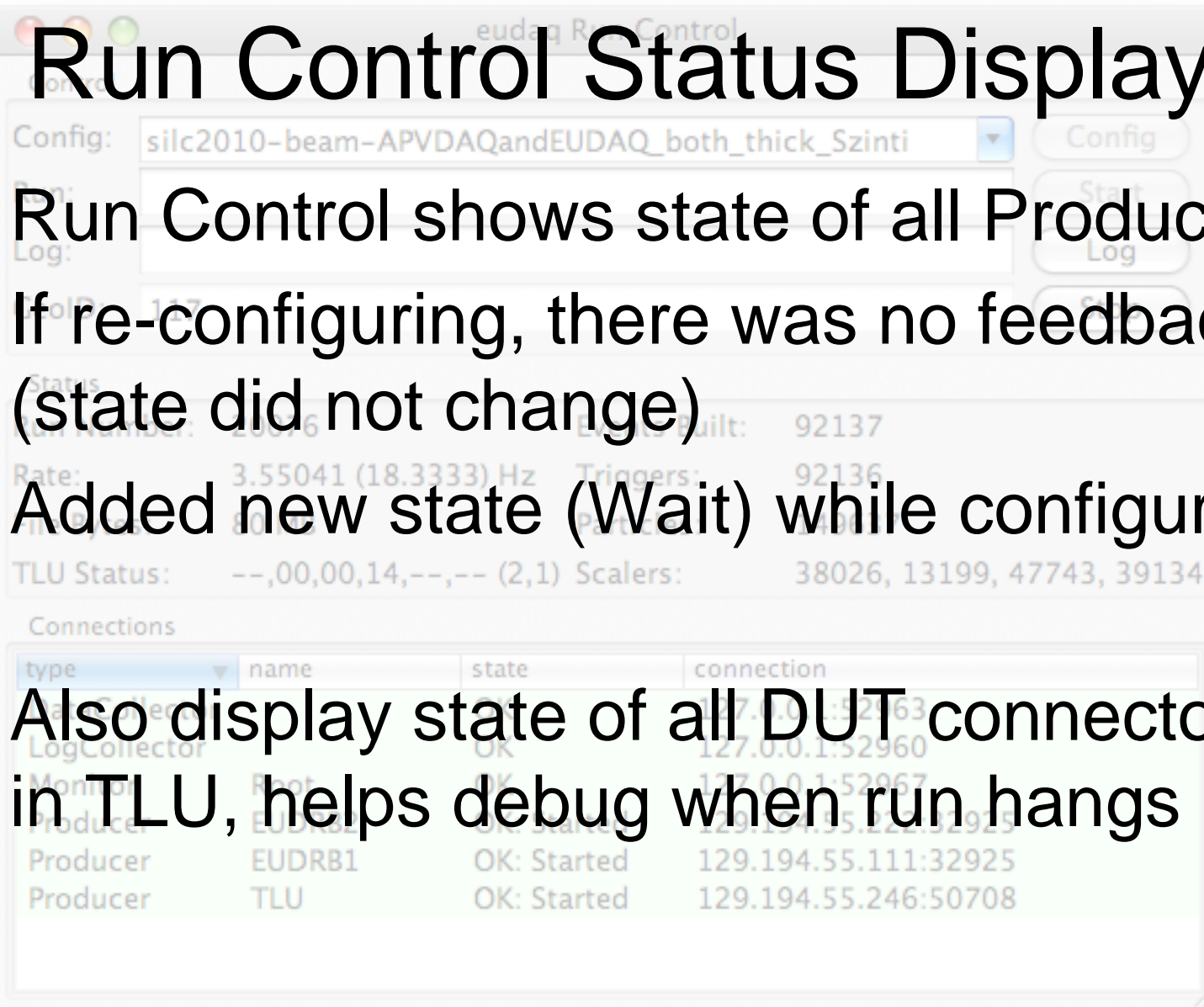
The screenshot shows the EUDAQ Log Collector interface. The main window displays a list of log messages with columns for Received, Sent, Level, Text, From, File, and Function. A message is selected, and a 'Log Message' dialog box is open, showing a detailed view of the selected message.

Name	Full	Short
Received	2010-09-28 02:21:28.512	02:21:28.512
Sent	2010-09-28 02:09:39.586	02:09:39.586
Level	4-INFO	4-INFO
Text	Configured (silc2010-beam-APVDAQandEUDAQ_both_thick_Szinti)	Configured (silc2010-beam-APVDAQand...
From	Producer.TLU	Producer.TLU
File	src/TLUProducer.cxx:140	TLUProducer.cxx:140
Function	virtual void TLUProducer::OnConfigure(const eudaq::Configuration&)	OnConfigure(const eudaq::Configuration&)



# Run Control Status Display

- Run Control shows state of all Producers
- If re-configuring, there was no feedback (state did not change)
- Added new state (Wait) while configuring
- Also display state of all DUT connectors in TLU, helps debug when run hangs



type	name	state	connection
LogCollector	EUFAQ	OK	127.0.0.1:52960
Monitor	TLU	OK	129.194.55.226:52967
Producer	EUDB1	OK: Started	129.194.55.111:32925
Producer	TLU	OK: Started	129.194.55.246:50708



# Stability

- Early this season DAQ would crash at start of new run with ~50% probability
- Caused by resetting TLU timestamp counter at beginning of run
- Now back to state where it can be left to run unattended overnight (and have a reasonable expectation of some data in the morning)
- Still a few crashes, but seem to be due to hardware (fixed by reprogramming sensors)



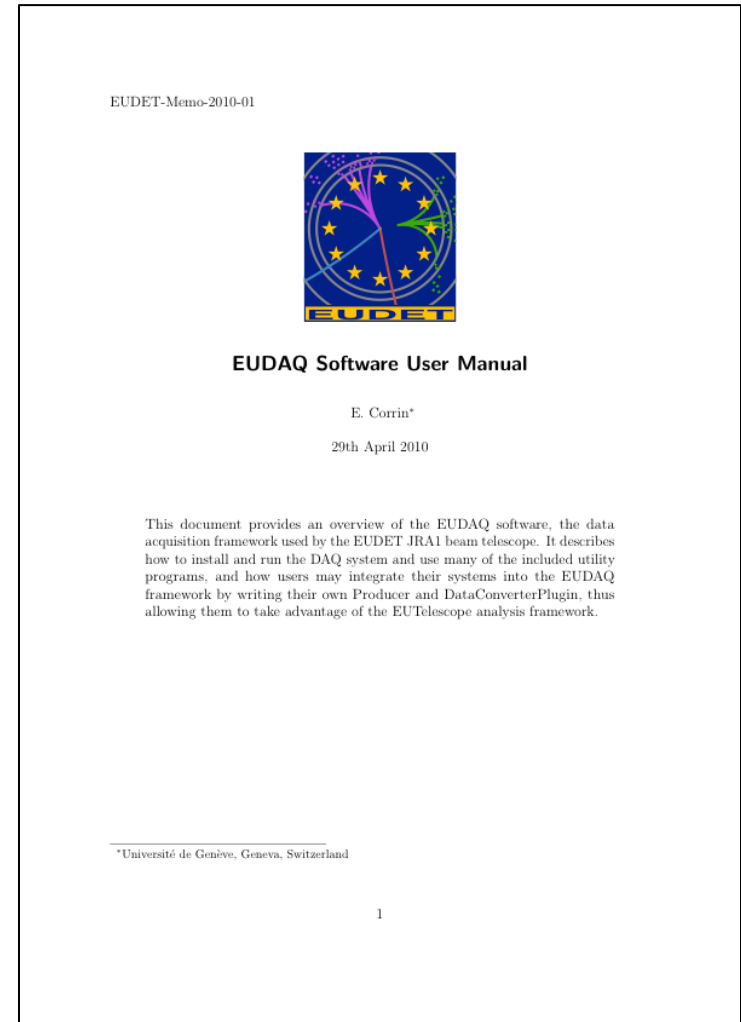
# TLU Synchronization

- TLU Handshake should protect against a DUT missing a trigger
- But it can happen that a DUT sees a spurious trigger (e.g. due to noise)
- Data files then get out of sync
- Tool written to correct this offline
  - Either as a separate step
  - Or during the conversion to LCIO



# User Manual

- Finished (at last) early this year
- Recommended reading for anyone interested in EUDAQ
- EUDET Memo 2010-01
- <http://www.eudet.org/e26/e28/e86887/e86890/EUDET-Memo-2010-01.pdf>

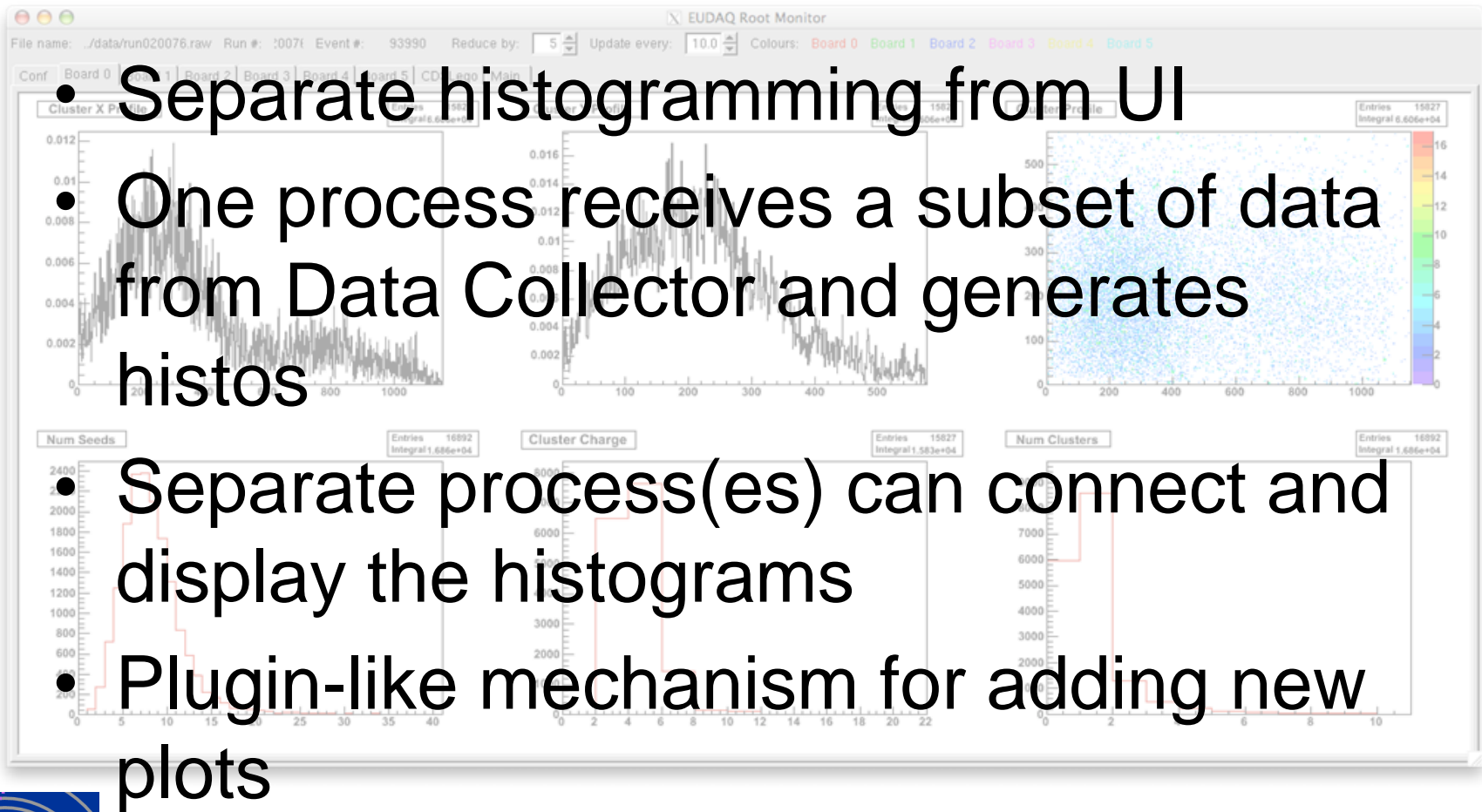


- Recent Improvements
- **Future of EUDAQ**
  - Monitoring
  - JTAG Programming Sensors
  - Data Collector
  - Others
- Summary
- Code Statistics



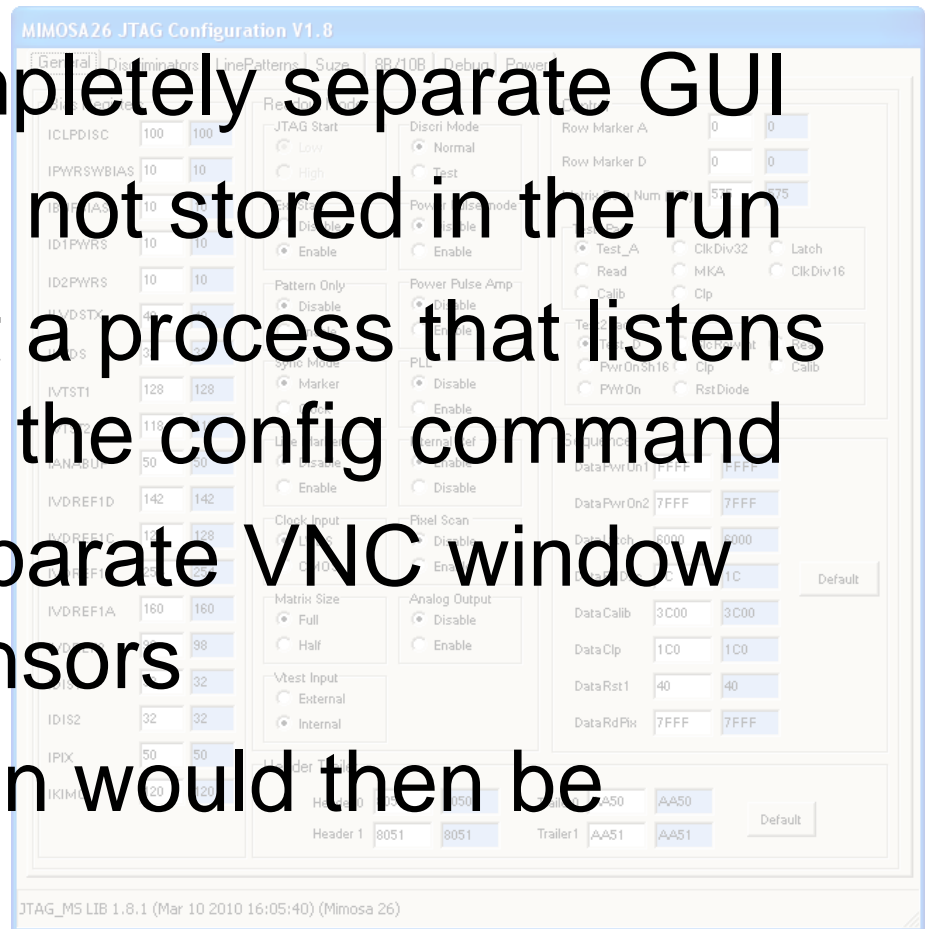
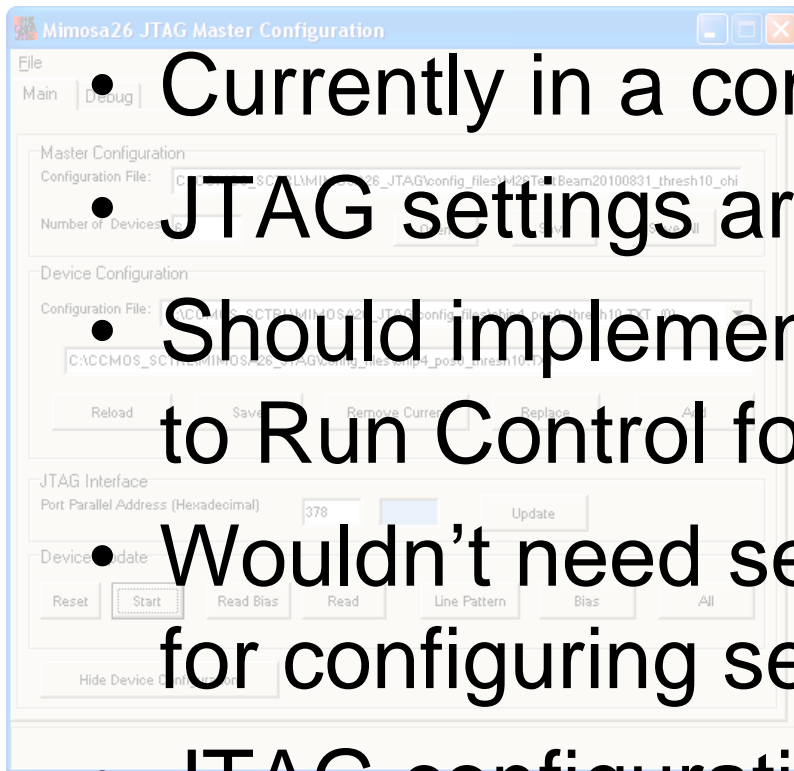


# Monitoring



# JTAG Programming

- Currently in a completely separate GUI
- JTAG settings are not stored in the run
- Should implement a process that listens to Run Control for the config command
- Wouldn't need separate VNC window for configuring sensors
- JTAG configuration would then be stored in each run



# Data Collector

- Currently just blindly takes all events in the order they arrive without looking at them
  - Can get desynchronised
  - At end of run some producers can have extra events remaining in the buffer
- Should at least check for errors
- Could also fix the most obvious problems
  - At least combine the EOREs properly



# Others

- Configure script
  - Installation currently requires some manual editing of Makefiles
- Testing framework
  - Allow automated checking of the code
  - Prevent regressions of bugs once fixed
- Distributed version control (git/mercurial?)
- Explicit license terms (GPL?)



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# Summary

- Limited new functionality
  - Concentrated on Usability/Stability
  - User Manual at last!
- Some improvements still needed
  - Monitoring needs rewriting
  - JTAG should be integrated into DAQ
  - Data Collector could be more intelligent
  - Configure script
  - Automated testing framework?



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# Code Statistics

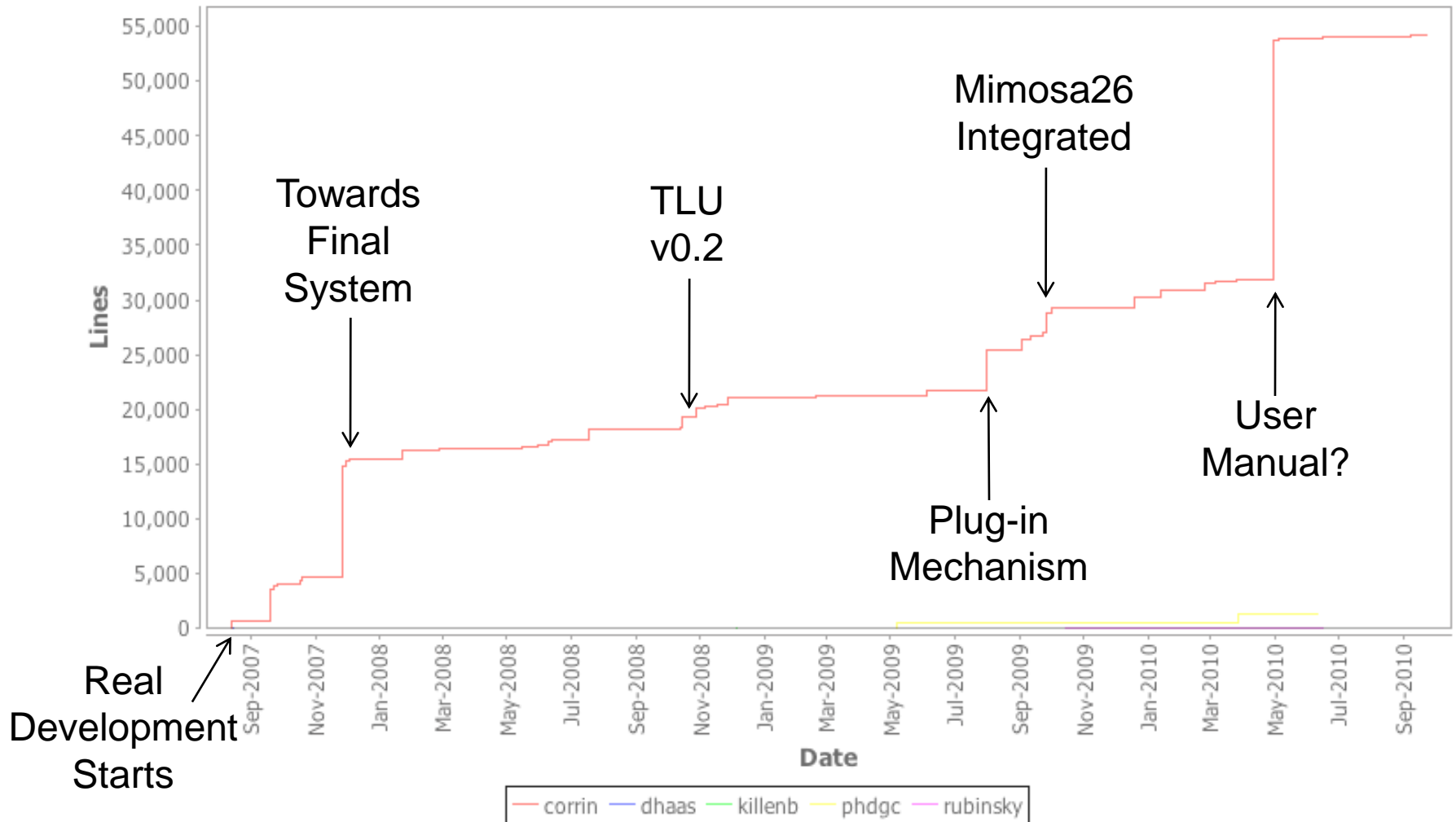
- First checked in to subversion repository in Feb 2007 (~30 source files)
- Now more than 350 source files in trunk (containing > 30 kloc)
- More than 1000 revisions
- 6 Developers registered (+ more changes by email)

Author	Commits	LOC
corrin	775	45263
killenb	82	3933
phdgc	50	1448
renz	43	2132
dhaas	39	449
rubinsky	12	119

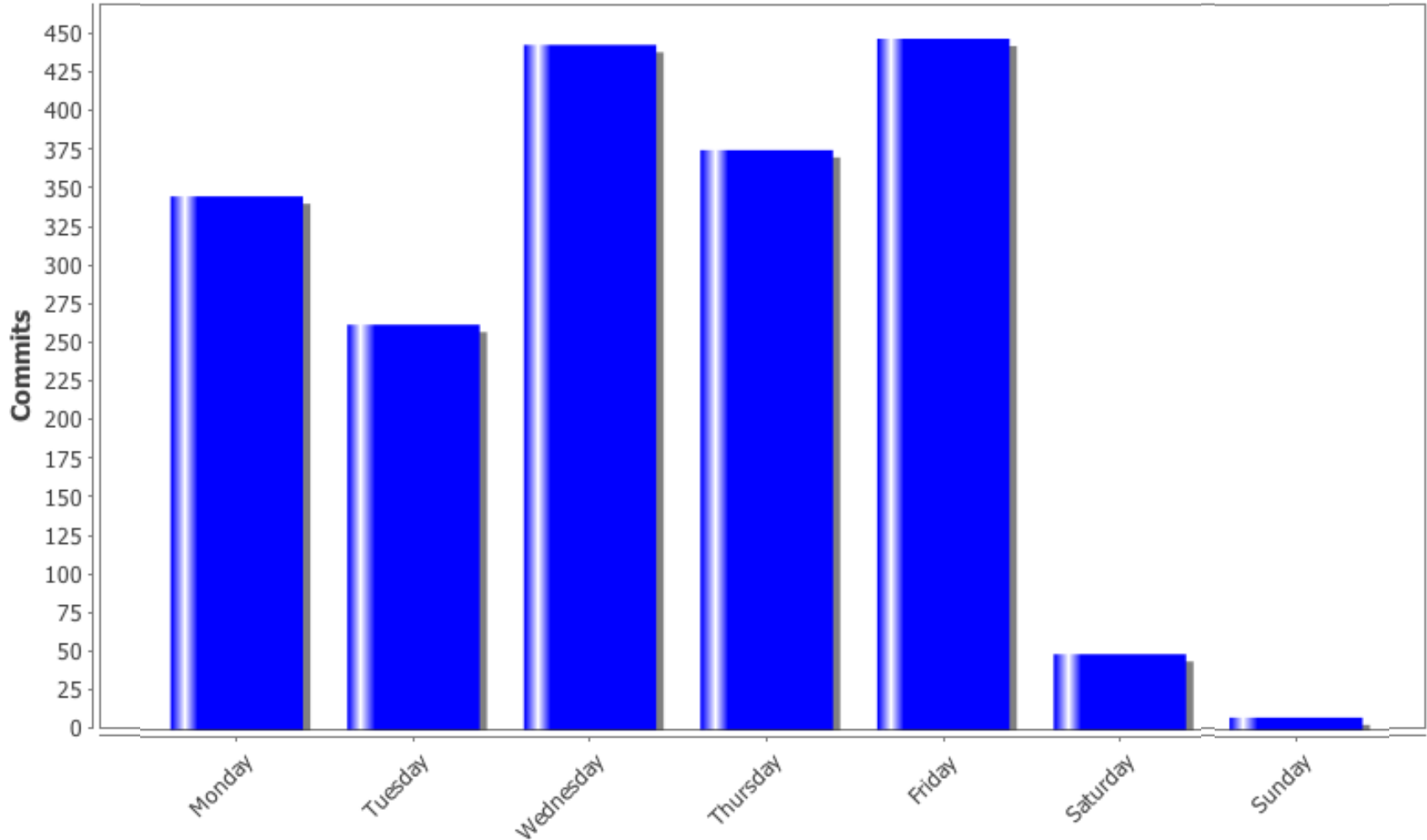




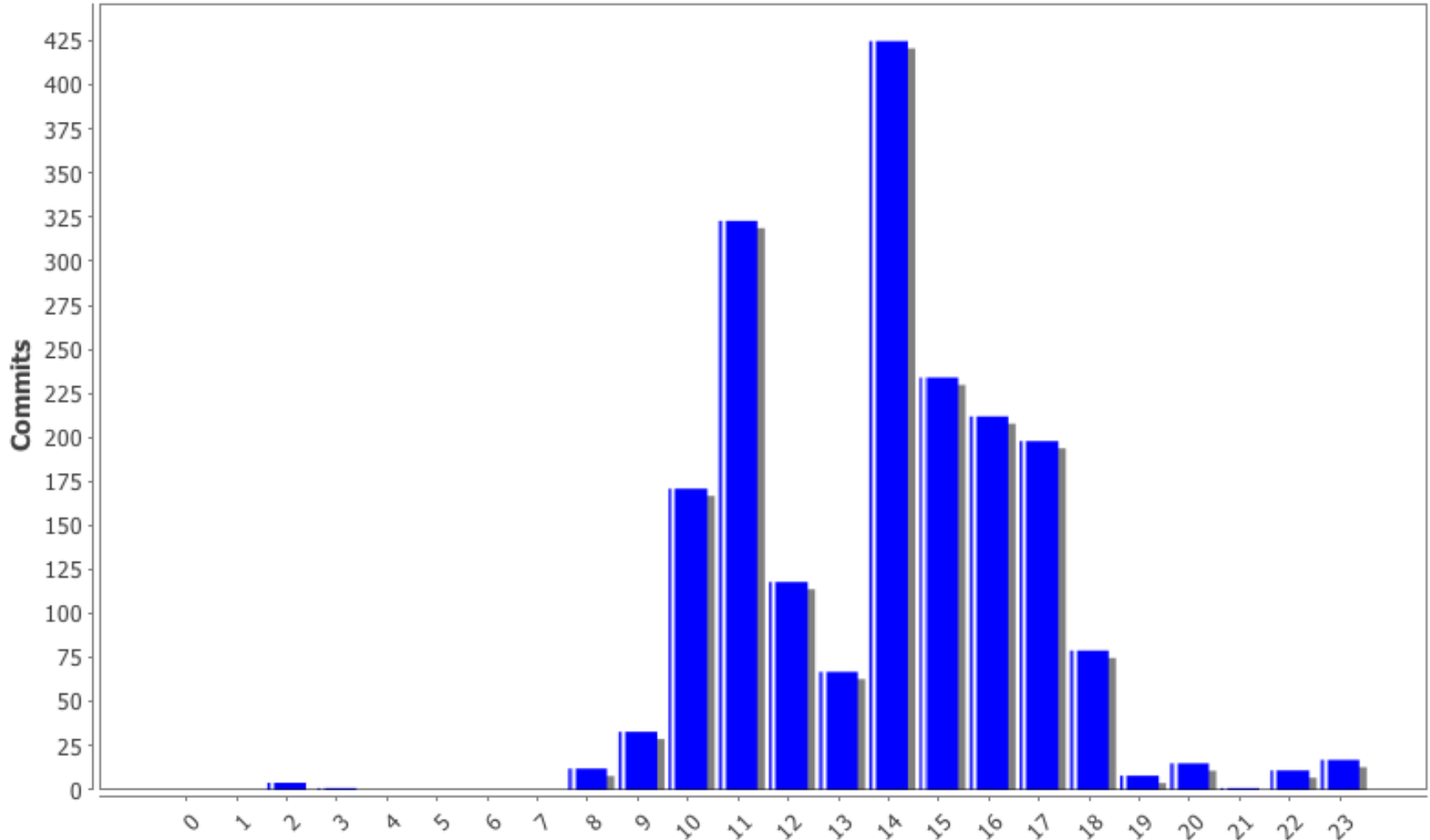
### /trunk: Contributed Lines of Code



### /trunk: Activity by Day of Week



### /trunk: Activity by Hour of Day



### Tag Cloud of Words in Commit Log Messages

allow apix before board bore build **change** check clean **cleaned** cleanup  
 clusterextractor **code** compatibility compilation compile **config** configuration  
 converter correlation correlator cosmetic **data** datacollector debugging **decoding** default  
 depfet directory disable draft **error** eudrb eudrbproducer event **file**  
 firmware first **fixed** fixes fortis gettriggerid histo **improve**  
 improvement include increase info joerg last lcio **library** linux make **makefile** marker merged  
**message** mimosa18 **minor** missing **mode** moved number option **output** pedestal pixel plots  
 preliminary producer program properly range raw2 read **remove** root **rootmonitor**  
 runcontrol script size standardevent start startrun **status** support svnswitch sync test testreader  
 timestamp tluproducer **tweak** **updated** version **warning** window working **zestsc1**

