Controls Software Review
RHIC Retreat 2009

1. Reliability
2. How can the Control System work better? … do more?
3. How can we work better to develop and commission new systems or system upgrades?

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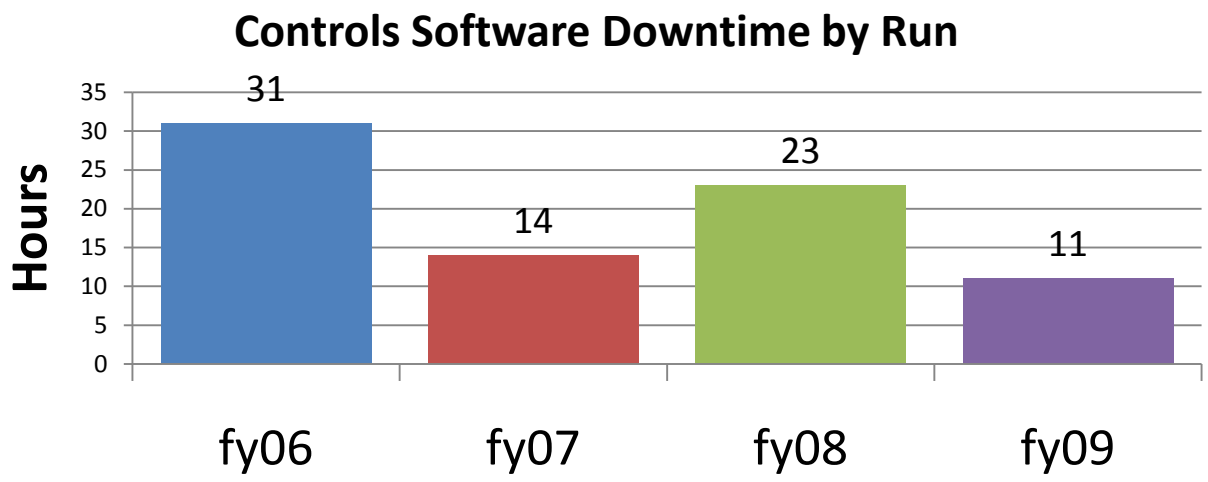
Reliability



Strategies

- Fault tolerance in infrastructure
- Investigation and repair of SW bugs
- System monitoring / notification of failures
- Scheduled testing/release of SW
- SW release procedures with log of changes
- Availability of fallback software versions
- Operator troubleshooting knowledge/tools
- Responsive call list (sufficient staff)

Control System Improvements

- More automation
  - RHIC PS checkout
  - Generic scanner tool
  - What else?
- Improved data mining tools
  - Filtering/calculation tools in LogView
  - Exporting data for processing with other software
  - Hooks to data analysis packages? (matlab?)
- Use of online model in injectors

Control System Improvements

- Bumping into limits
  - More data being moved through system
  - Performance bottlenecks in VME bus & network
  - Client load on NX terminal servers
- Do we need new approaches?
  - Embedded controllers (e.g. LLRF & SpinFlipper)
  - Dedicated high speed network path (Luminescence Monitor)
  - Adding/replacing NX terminal servers
  - Ado managers on Windows systems?

We're open to new ideas

The way we work

Views of knowledge

Old view	New view
• proprietary property of experts • share on a need-to-know basis • answers/solutions come from experts • wait for the expert	• “open source”, “on the web” • share with anyone who’s interested • nobody knows where the next great idea will come from • look it up yourself

The way we work

Sharing knowledge

- Positive examples
  - elogs
  - Wikis and other web docs
  - The Michiko questions: “How does that work?”, “Why do you do it that way?”
  - Experts who are willing and able to explain
  - In house Google search engine
- Room for improvement?
  - Be open to asking and answering questions
  - Provide background for narrowly understood topics
  - Capture more knowledge in documents

The way we work
Efficiency in development/commissioning

- Communication during dev/comm process
  - Specification documents, team meetings, e-mails, phone calls, office visits
  - Team members still end up waiting for info
- Proposal – more online collaboration
  - Planning doc maintained by team leaders (wiki?)
  - ***online commissioning log (elog?) used by ALL team members – standard practice***
  - In addition to (not instead of) other communication
  - Useful for active AND stalled projects

The way we work
Planning/prioritization

- Why do we have dry runs?
  - Test systems in a close to real world situation
  - But also to check that expected work is done
- Early dry runs can interrupt development flow
- Proposal – project review meeting(s) in place of early dry runs
  - Conducted by run coordinator
  - Consider priorities of projects together