

STAR ELog

Electronic Shift and Handover Log and Much More

HAJDU, Levente

LAURET, Jérôme

BROOKHAVEN NATIONAL LABORATORY

Outline

- Problem statement
- Shift Description
- E. Shift Log Architecture
- What exactly does the logging system of a major experiment look like ?
 - User Level Walk Through / Snapshots

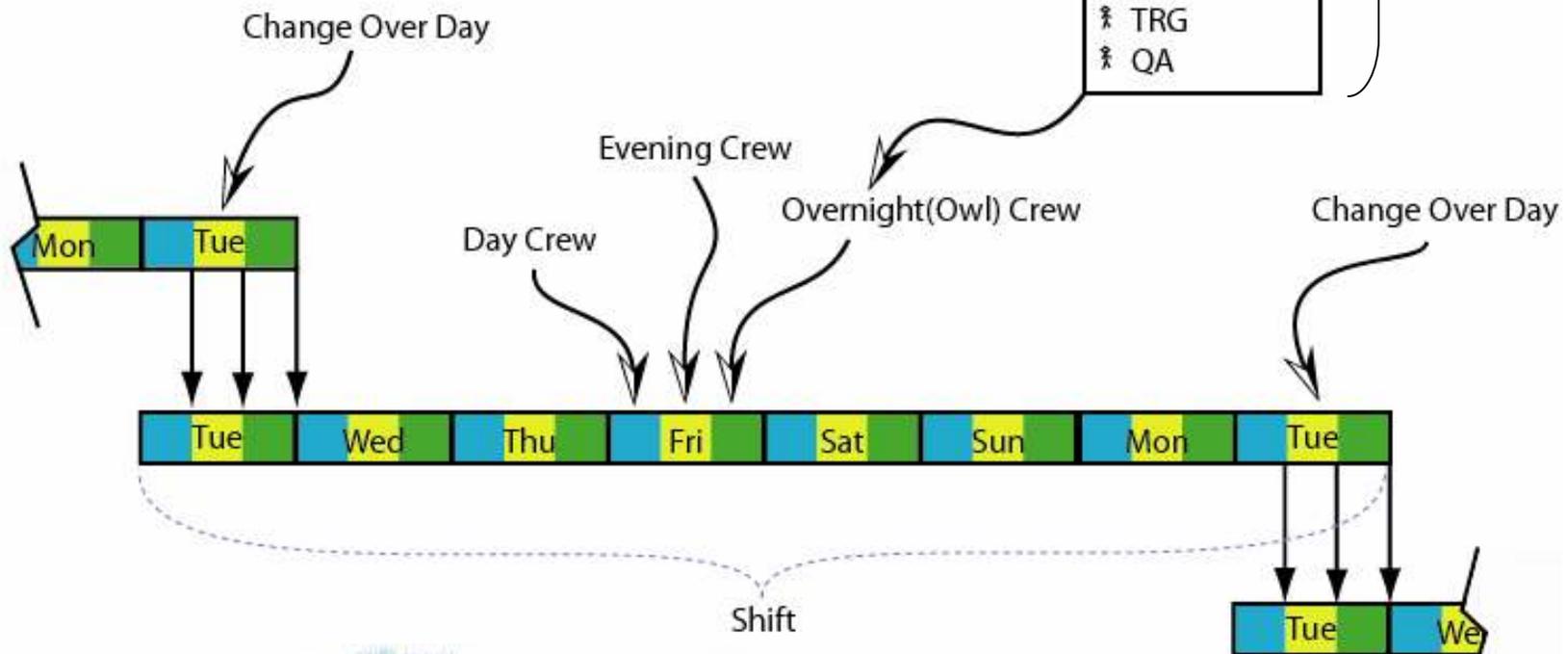
Overview

- CHEP06 – Avoiding the Tower of Babel Syndrome: An integrated issue-based quality assurance system (G. V. Buren et al.)
 - Summarizing information from many efforts (detectors sub-systems, online / offline)
 - Concentrated on QA
 - Information need to get back to the shift crew: E.S.L.
 - Found to be insufficient (still)
- Issues
 - Shifts are complex in structure
 - Information need to pass from shift to shifts
 - Within and across specialized groups
 - Shifts are staffed by people ;-)
 - People get tired ...summary do not pass
 - People get busy ... they may not prepare in advance
- Solutions
 - More summaries
 - More pro-active actions

What is a Shift ?

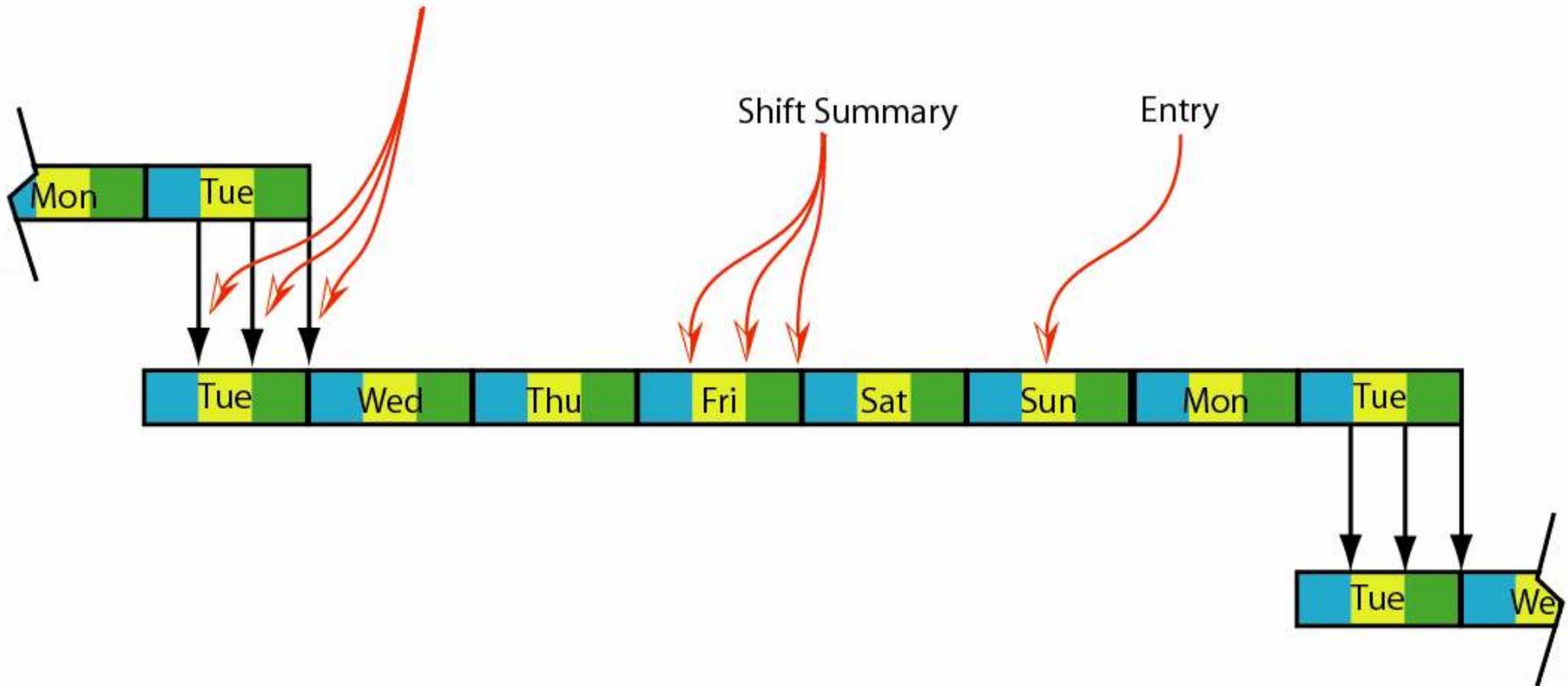
- * Shift Leader
- * BBC
- * BEMC
- * DAQ
- * DetOps
- * EEMC
- * FPD
- * FTFC
- * L3
- * PMD
- * SVT
- * SSD
- * TPC
- * TOF
- * TRG
- * QA

Up to 16 activities

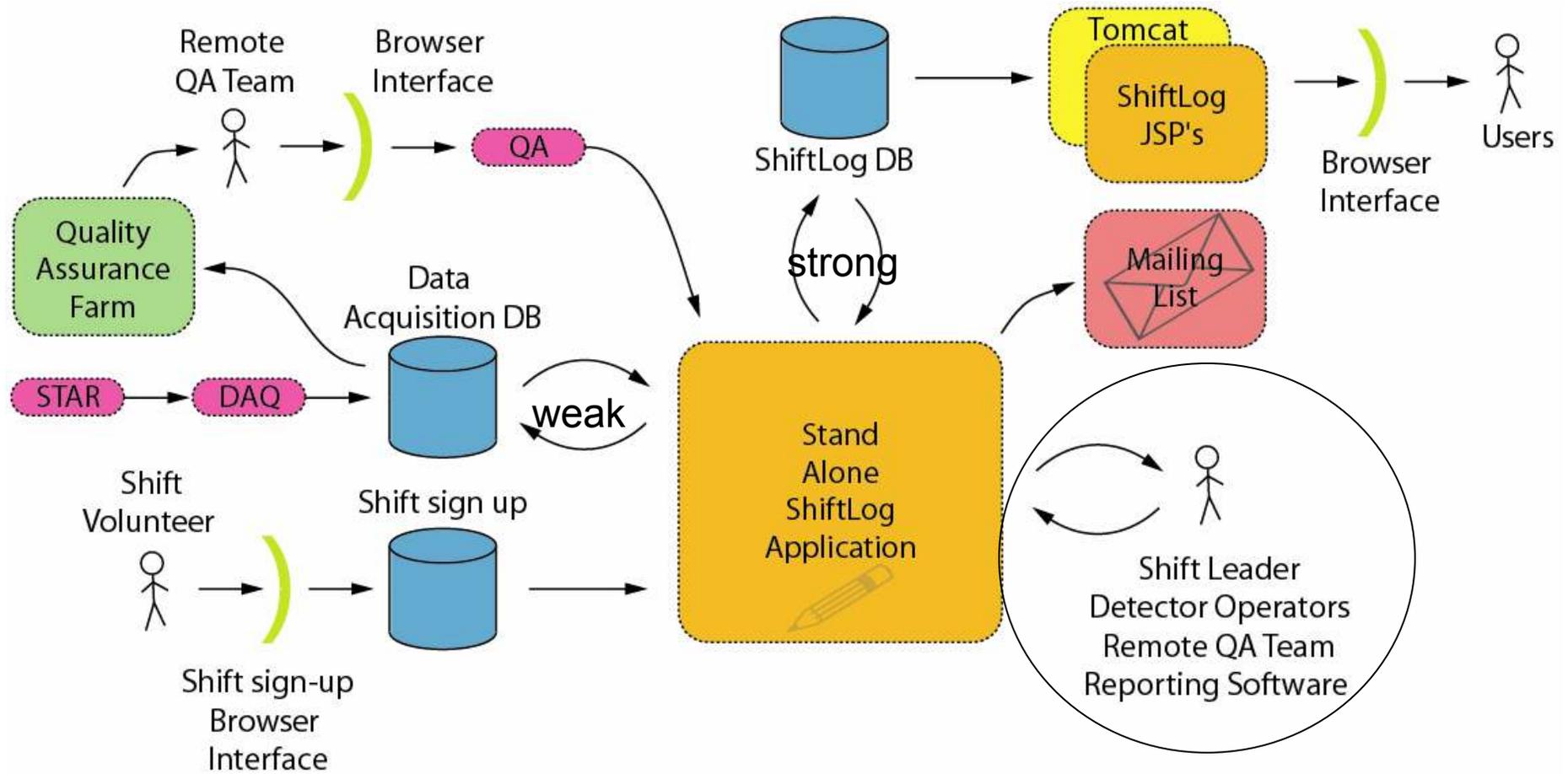


Important Events Requiring Logging

Shift Changeover Check List
(Only Shiftleader and Some Detector Operators)



ESL Design Overview



Why not just use a forum engine ?

- Interactions with many external databases
- Customized forms + logic
- Specialized roles
- Increased reliability of direct DB connection.
- Independent of web browser compatibility.
- More interactive features than web browser based applications.
 - Popup windows
 - Form validity checking without needing to use the back button

STAR Online Web Server - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://online.star.bnl.gov/

STAR Computing

STAR Online Web Server

Local Mirrors STAR Computing Maintenance

Privacy and security notice Last modified 08/15/2007 10:39:19

Run7 Operations Links

Shift and Run Records

- [Electronic ShiftLog](#)
- [RunLog Browser](#)
 - direct lookup by run (now available for all run years)
- [Trigger Versioning](#)
- [L2 Monitoring](#) (from ...)
- [L2 Gamma](#) (from Ja...)
- [Quarkonia Level-2 I...](#)
- [Trigger Timing Plots](#)
- [RICH Scalers](#) (now ...)

Current Status Links

- [DAQ monitoring](#)

Duties and Docs

- [ShiftSignup Sheet](#)
- [Shift Descriptions](#)
 - [period coordinator](#)
 - [shift leader](#)
- [Procedure Lists](#)
- [Procedures from](#)
- [Offline QA Documentation](#)
- [RCE monitoring](#)

Prompt

Enter username and password for "protected" at http://online.star.bnl.gov

User Name:

Password:

Use Password Manager to remember this password.

Cancel OK

Waiting for online.star.bnl.gov...

Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://online.star.bnl.gov/apps/shiftLog/ Go

STAR Run 7 (2007)

electronic shift log 1.6.8

The STAR Shift Log consists of three parts: a browser, an editor and a web editor. The editor can be started only inside Brookhaven National Laboratory. The web editor is available only to experts.

 [Access the browser](#)

 [Start the editor](#) (needs [Java Web Start](#))

Users' links:

- User documentation: [Doc PDF](#)
- [Summary Reports mailing list](#)

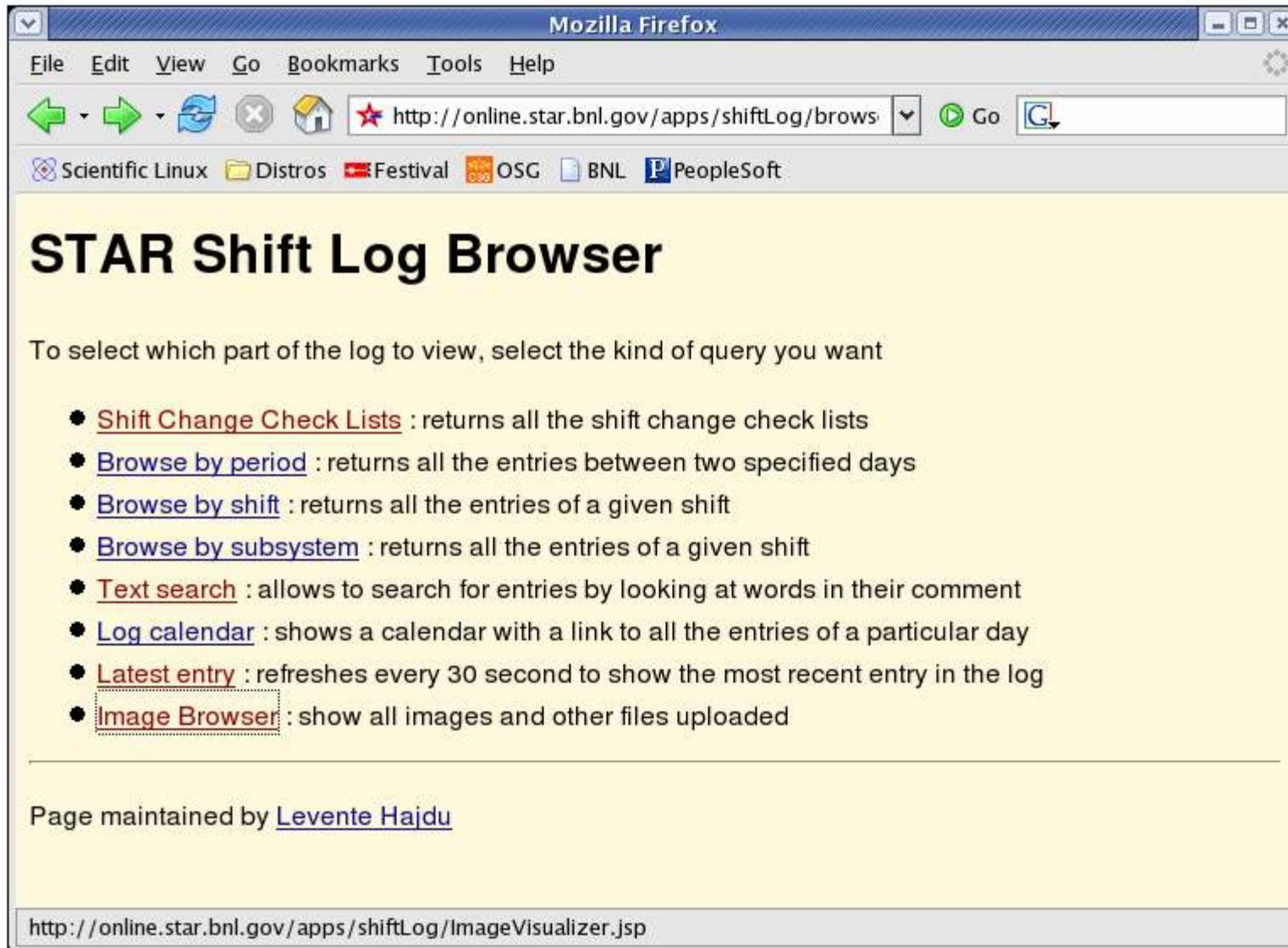
Developers' links:

- [the developer documentation](#) (javadoc for the classes)
- [Changes from last version](#)
- [Known issues](#)

Page maintained by [Levente Hajdu](#)

http://online.star.bnl.gov/apps/shiftLog/client/launchEditor.jnlp

Web Interface Search Options



The screenshot shows a Mozilla Firefox browser window with the address bar containing the URL <http://online.star.bnl.gov/apps/shiftLog/brows>. The page title is "STAR Shift Log Browser". Below the title, there is a paragraph: "To select which part of the log to view, select the kind of query you want". This is followed by a bulleted list of search options:

- [Shift Change Check Lists](#) : returns all the shift change check lists
- [Browse by period](#) : returns all the entries between two specified days
- [Browse by shift](#) : returns all the entries of a given shift
- [Browse by subsystem](#) : returns all the entries of a given shift
- [Text search](#) : allows to search for entries by looking at words in their comment
- [Log calendar](#) : shows a calendar with a link to all the entries of a particular day
- [Latest entry](#) : refreshes every 30 second to show the most recent entry in the log
- [Image Browser](#) : show all images and other files uploaded

Below the list, there is a horizontal line and the text: "Page maintained by [Levente Hajdu](#)". At the bottom of the browser window, the address bar shows the URL: <http://online.star.bnl.gov/apps/shiftLog/ImageVisualizer.jsp>.

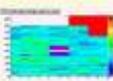
Untitled Document - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://online.star.bnl.gov/apps/shiftLog/ImageVisualizer.jsp

Image and File Browser

[Go to bottom](#)

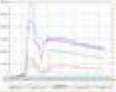
| | |
|---|--|
|  | <p>relativeURL : /4jerome.jpg Log for this day : 04/07/2007 Link to file: rateplot</p> |
|  | <p>relativeURL : /FTPC_East_mask_RDO2.jpg Log for this day : 04/07/2007 Link to file: online plot for FTPC East</p> |
|  | <p>relativeURL : /ftpc-east.jpg Log for this day : 04/07/2007 Link to file: FTPC East</p> |
|  | <p>relativeURL : /diffvz_VS_mult_8096026_2.gif Log for this day : 04/07/2007 Link to file: vpd vertex resolution determined with tracking in fast offline production</p> |
|  | <p>relativeURL : /zdc_coincidence_rate.jpg Log for this day : 04/08/2007 Link to file: online plot - ZDC coincidence rate</p> |

Done

ShiftLog - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://online.star.bnl.gov/apps/shiftLog/logForDay.jsp?day=04/09/2007

| | | |
|------------------|---|---------------------|
| 00:18 | MCR was called to try to fix high Bkg at STAR causing PMD & FTPC to trip and high current peaks in TPC | - Jiaxu Zuo |
| General | | |
| 00:21 | Attached is a plot of ZDC And, singles and Bkg in B&Y beams | - Jiaxu Zuo |
| General | | |
| |  Plot: ZDC And, ZDC E, ZDC W, Yellow Bkg, Blue Bkg | |
| 00:24 | Swith ON Laser for TPC Laser | - Jiaxu Zuo |
| General | | |
| 00:27 | Run 8099002 - trying MTD run w/ TRG&DAQ | - Marco van Leeuwen |
| DAQ | | |
| 00:50 (00:29) | Summary Report - Night Shift At beginning of shift, there was no beam in RHIC, status on the broadcast was 'RHIC electrical failure', and almost for the whole shift it stayed that way. New beam was injected at 23:15 with high backgrounds. At ~20:00 Zhangbu had a short access to check MTD LMRPC signals, see ShiftLog. We took several test runs for MTD triggers. | |
| General | | |

Done

ShiftLog - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://online.star.bnl.gov/apps/shiftLog/logForDay.jsp?day=04/07/2007

General - Katarzyna KOWalik

11:26 (00:00) STAR QA Shift Report Summary (FAST OFFLINE)

QA SUMMARY OF CHANGED ISSUES FOR Fast Offline Data (+ new / - gone):

- + [ID:3014] Absence of KOS and Lambda invariant mass peaks
<http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=3014>
- + [ID:3043] V0 z-coord distribution 2 peaks at large z
<http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueEditor.php?iid=3043>
- + [ID:3028] BEMC clusters on phi have gaps

Done

QA Issue Browser/Editor - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.star.bnl.gov/STAR/comp/qa/QAShiftReport/issueE

Name (short description): **TPC first-hit-on-track different in east and west halves**

Full Description And Notes:

The distributions of first TPC hit on global tracks with respect to padrow number are very different in the east and west halves; that in the east cuts off at row 35, while that in the west extends smoothly to row 42. This results in a greater number of tracks at eta > 0 and corresponding non-symmetric track distributions on eta and the z-coordinate of the first-hit-on-track.

14:57 05/15/07 EDT :
 Run 8134020: still true

Done

Mozilla Firefox

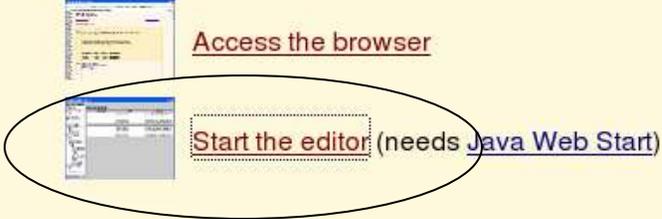
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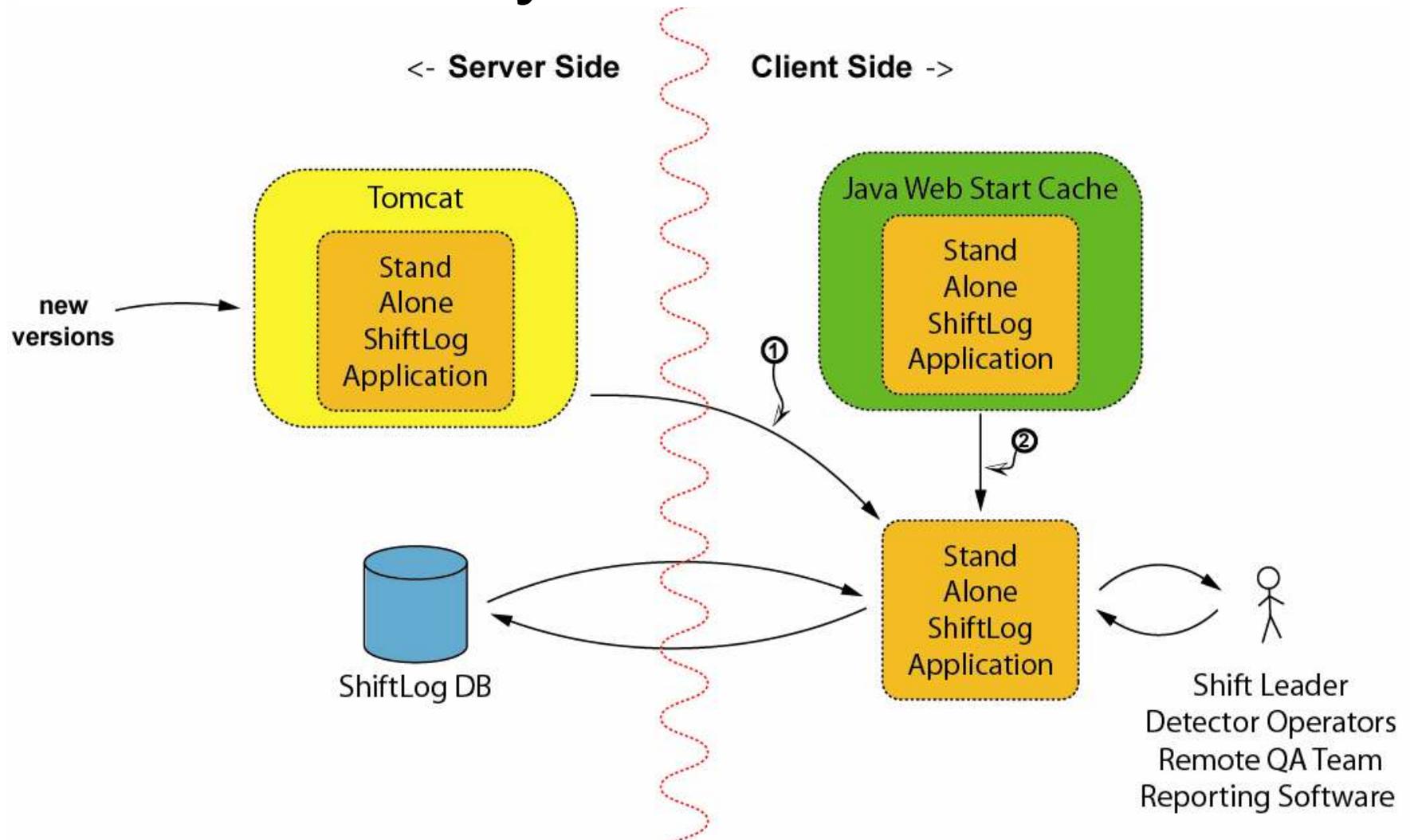
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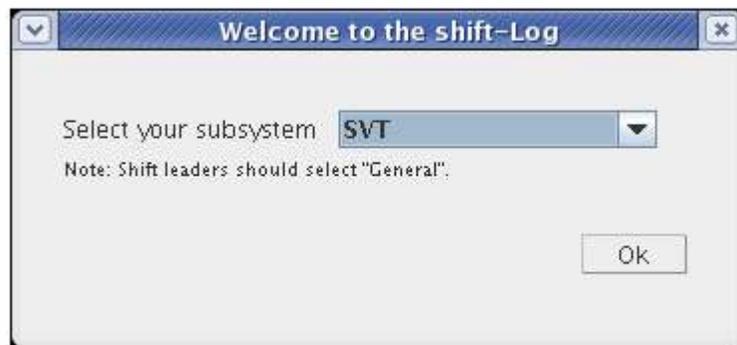
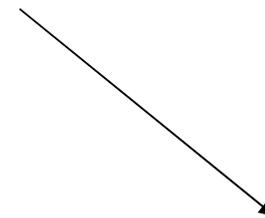
Page maintained by [Levente Hajdu](#)

http://online.star.bnl.gov/apps/shiftLog/client/launchEditor.jnlp

Redundancy with Java Web Start



Loading the Application



Main Window

Shift Log editor - ver 1.6.8

File Entry Summary Subsystem CrewChangeOver

Entry list

- Thursday 16
- Wednesday 15
- Aug week 2
- Aug week 1
- July 2007
- June 2007
- May 2007
- May week 5
 - Thursday 31
 - Wednesday 30
 - SSD 8150093 : Runs 92 and 93 -
 - 8150083 : Last (production)
 - 8150064 : 21:40 Next MinBias
 - 8150063 : 21:15 Next MinBi
 - 8150062 : 21:10 TPC Laser
 - 8150061 : 20:37 Next Run wi
 - 8150058 : 20:27 Start 2007Pro
 - 8150057 : 20:20 PMD Pedestal
 - 8150056 : 19:45 start 2007Pr
 - 8150055 : Last two runs -
 - FTPC 8150053 : 19:20 "East 4"
 - FTPC 8150053 : Minor alarm from the
 - 8150053 : 19:00 2007Product
 - 8150052 : We got a beam 18
 - : APEX running in RHIC
 - SSD 8150045 : Because there was no

Run number:* 50083 Latest run Event time:* date:*

Author: imimov Last author Crew list unavailable

Comment: Subsystem: General

Last (production) run was stopped for unknown reason (by itself).
 After this we could not start another one: different system gave 100% errors.
 We tried a "reboot" procedure a few times, check different detector configurations ...
 the result was the same.
 23:15 MCR called for beam dump.

refresh

* Leave run number blank for a comment not associated to a run. Default event date and time is now (the moment in which you press record). You can enter the event time without a date and the current day is assumed.

Standard Entry Form

The screenshot shows a window titled "EntryEditor (new entry)". The form contains the following fields and controls:

- Run number*:** Text input with "8228017".
- Latest run:** Button.
- Event time*:** Text input.
- date*:** Dropdown menu.
- Author:** Text input with "Levente Hajd".
- Last author:** Button.
- Crew list unavailable:** Dropdown menu.
- Comment:** Large text area.
- Subsystem:** Dropdown menu with "SVT".

* Leave run number blank for a comment not associated to a run. Default event date and time is now (the moment in which you press record). You can enter the event time without a date and the current day is assumed.

Attachments:

| URL | Description |
|-----|-------------|
|-----|-------------|

Buttons: Add, Edit, Remove

Issues (SVT):

| Open since | Description | Status |
|------------|-------------|--------|
|------------|-------------|--------|

Buttons: New Issue, Change status

Buttons: Cancel, Record

Shift Summary Report

The screenshot shows the 'Shift Log editor - ver 1.6.8' application window. The main window has a menu bar with 'File', 'Entry', 'Summary', 'Subsystem', and 'CrewChangeOver'. On the left, there is a tree view titled 'Entry list' containing a list of months from March 2006 to Thursday 16. A 'refresh' button is located at the bottom of this list. A modal dialog box titled 'Select the shift period...' is open in the center. It contains the following fields:

- Header: Enter the date of the shift (mm/dd/yyyy) and the turn:
- Date:
- Turn:
- Name:
- Buttons: 'Cancel' and 'OK'

In the bottom right corner of the application window, there is a yellow star logo with the text 'STAR ShiftLog'.

Shift Summary Report

Summary Report

Enter comment

7:45 beam dumped and ramp down detectors
8:15 ramp down magnet
8:30 lock out of power supply and START access

During access SSD compressor oil leak is discovered and investigated. Deemed small. No action -- will keep an eye on it.

TPC gas computer loses it. Twice. Still investigating problem.

FPD/FMS, BEMC, Heavy Flavor Tracker, TOF and MTD work being done (see individual entries).

| run number | good | ? | bad | nEvents | glbSetupName |
|------------|----------------------------------|-----------------------|-----------------------|---------|--------------|
| 8129021 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | 3207 | chris_QT |
| 8129023 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | 45 | hanks-prod |
| 8129024 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1 | chris_QT |
| 8129027 | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | 1 | chris_QT |

Cancel Record

Shift Hand (change) Over Checklist

Custom additional forms can be added for each of the 16 categories corresponding to the key stations of the shifts



Testing Form [ShiftChangeCheckListEditor]

ShiftLeader Runs \ Detectors Subsystems

It's time to fill out the Shiftleader Changeover Checklist:

At the change of every shift-crew (once a week) the shift leaders must fill out this form. You can alternate through the tabs yourself or use the "next" button on the bottom left hand side of this window.

Note : Red fields are required.

Incoming Shiftleader:

Outgoing Shiftleader :

Date and Time:
Format : MM/DD/YYYY HH:MM (PM|AM)

RHIC beams & Energy:

You must fill out this form by the end of your shift. If you fail to fill out this form an automated e-mail will be sent to the STAR Operations list to indicate that you did not fill it out. If now is not a good time for you, you may click the "I will fill it in later" button for now.



Testing Form [DetOpsChangeCheckListEditor]

ShiftLeader Runs \ Detectors Subsystems

It's time to fill out the DetOps Changeover Checklist:

At the change of every shift-crew (once a week) the shift leaders must fill out this form. You can alternate through the tabs yourself or use the "next" button on the bottom left hand side of this window.

Note : Red fields are required.

Incoming Detector Operator(s):

Outgoing Detector Operator(s):

Date and Time:
Format : MM/DD/YYYY HH:MM (PM|AM)

You must fill out this form by the end of your shift. If you fail to fill out this form an automated e-mail will be sent to the STAR Operations list to indicate that you did not fill it out. If now is not a good time for you, you may click the "I will fill it in later" button for now.

Shift Hand (change) Over Checklist

Form forces pro-active reports – results stored into separate database tables



Testing Form [ShiftChangeCheckListEditor]

ShiftLeader Rums \ Detectors Subsystems

STAR run plan for each store (ie trigger wave vs luminosity):
startup mode: various test configurations for commissioning dets and triggers test production modes as per Christa/pe

Review needed calibration runs (ie daily pulser, laser, etc.)
TPC, FTFC pulser, peds and SSD w/o beams standard ped runs at rampup of dets with each new fill

STAR detectors currently NOT in run and reasons:
FMS, TPX, TCF, HFT

DAQ Receiver Cards Masked Out (Detector & Card#)
TPPC sect 17 0x777 sect 19 0xeff

Next > Record

Testing Form [DetOpsChangeCheckListEditor]

ShiftLeader Rums \ Detectors Subsystems

Review needed calibration runs and procedures (laser, pulser etc)
Pedestals on TPC, FTFC, SVT, PND (at start of fill). Pedestal for SSD after beam dump (don't turn off LV/RDOs during beam dump). Laser run for TPC sometime after fill (~30mins, then every few hours).

STAR detectors still operated only by experts!
None.

STAR detectors currently NOT in run and reasons:
FMS...

Review procedure & conditions for ramp up/down of all detectors:
After injection, but before declared store. (at discretion of shift leader) Check/configure BTO/W/prepare for physics) and Endcap(readouts). Start PMD to pedestal first. Then SVT to full power on, bring MTDr up, TPC Anodes/Cathodes up, FTFC to pedestal mode. Then SSD, YPD, BSMD. Verify all subsystems good (including ZDC, BBC, CTB, and MTDs). After Peds, go to physics mode on detectors in pedestal mode. To bring down, start with PMD (both planes... be careful to not miss CPV), MTDr, SVT (RDO's on), TPC, FTFC, BSMD HV off, YPD. SSD is special, turn off HV. Then after dump, bring HV up, and take a pedestal run. Then turn off LV, HV, and RDO's.

Next > Record

Shift Hand (change) Over Checklist

Form forces explicit reports of problems and forces review of problems



Testing Form [ShiftChangeCheckListEditor]

ShiftLeader Runs \ Detectors Subsystems

In the past week, have there been any problems with the following:
(If yes, explain the problem and the current status)

- Magnet
- Global Interloc...
- Water System
- Air conditioning
- DAQ
- L3 Display
- Trigger
- Trigger Barrel
- ZDC
- TPC
- FTPC
- SVT
- SSD
- BEMC
- EEMC
- BBC
- TOF
- PMD
- FPD
- Slow Controls
- Online Plots
- Offline Plots
- RCF

Magnet: power dip and major trip -> C-AD guys took hours to get it back
Global Interlocks: flammable gas malfunction -> fixed during controlled access
DAQ: normal issues L3 Display: comes up in cluster mode (could we change?)
Trigger: probs with BCE

Next > Record



Testing Form [DetOpsChangeCheckListEditor]

ShiftLeader Runs \ Detectors Subsystems

In the past week, have there been any problems with the following:
(If yes, explain the problem and the current status)

- Trigger Barrel
- ZDC
- TPC
- FTPC
- SVT
- SSD
- BEMC
- EEMC
- BBC
- TOF
- PMD
- FPD
- Slow Controls
- Online Plots

Problems with connections, usually due to multiple windows, or needing MEDM restart.
Also, some Anode trips. FTPC: VME Reboot required once (ARCNET lost). Some tripped anodes. SSD: Lots of problems. However we think they have been solved. |

Next > Record

Conclusion

- The STAR Electronic shift log is a highly customized suite of applications used for recording human logging data from the STAR experiment
 - Results are viewable from a Web interface
 - Standard Java based standalone API are available to local shift crew or remote crews
- Being able to cross-reference work from several teams is essential
 - Vertically: several crews can select their information , view all information or correlate events in time
 - Horizontally: sub-sequent crews need to pass and retain information for smooth flow of the run plan
- Summary are needed
 - Image browsers, change over summaries
 - Summaries from offline QA (reconstructions)
 - ...
- STAR's ESL provides all of this and we learn that
 - Overall summaries and details are fundamental for run quality
 - Human factor is limiting the information flow
 - Pro-active reporting is essential for a smooth crew and run plan
 - Pop-up helpers of forms for run plan summaries and problem summaries greatly helps and do not meet any further human barriers