Luminosity and other D0 Databases: Status and Issues

Jim Linnemann
MSU

Taking Stock Meeting

June 10, 2009

Lum DB Modifications Pending

Version Stamps **modify ALL LBN rows**

Fill LBN.FuzzyTime old lbns with transition records

all new LBNS

New status values Recorded, Live, NormRun, Delivered, Sclinit

use to dis-ambiguate “red status 23” which is currently catch-all

Last year:

~20 new status messages

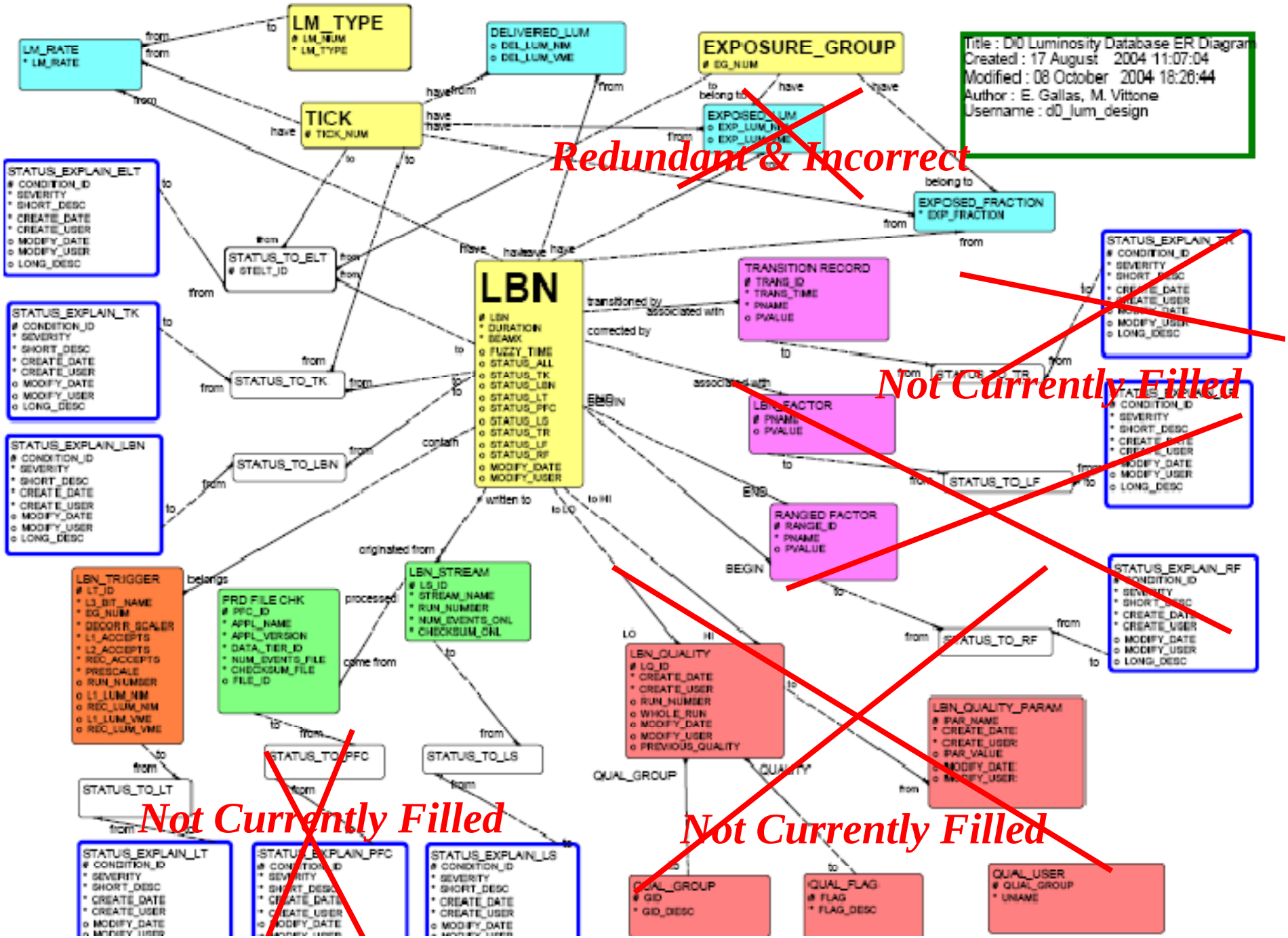
Scripts for new status records done (S. White)

almost done (Margherita)

Verifying content: lm_access and python/sql job

Delete _Old columns **modify all DelLum and LBNTrigger rows**

wait for resolution of “redo” logic causing double correction (Marco)



Title : D0 Luminosity Database ER Diagram
Created : 17 August 2004 11:07:04
Modified : 08 October 2004 18:26:44
Author : E. Gallas, M. Vittone
Username : d0_lum_design
LM_TYPE
LM_RATE
DELIVERED_LUM
EXPOSURE_GROUP
TICK
EXPOSED_LUM
EXPOSED_FRACTION
STATUS_EXPLAIN_ELT
STATUS_TO_ELT
LBN
TRANSITION RECORD
STATUS_EXPLAIN_TK
STATUS_TO_TK
STATUS_EXPLAIN_LBN
STATUS_TO_LBN
LBN_FACTOR
STATUS_TO_LF
RANGED FACTOR
STATUS_EXPLAIN_RF
STATUS_TO_RF
LBN_TRIGGER
PRD FILE CHK
LBN_STREAM
LBN_QUALITY
LBN_QUALITY_PARAM
STATUS_TO_PFC
STATUS_TO_LS
STATUS_TO_LT
STATUS_EXPLAIN_LT
STATUS_EXPLAIN_PFC
STATUS_EXPLAIN_LS
QUAL_GROUP
QUAL_FLAG
QUAL_USER
Redundant & Incorrect
Not Currently Filled
Not Currently Filled
Not Currently Filled

Lum DB mods~June 15-Aug 30 TevatronShutdown

10 New columns on all lbn records

After June 15 (Randy, Margherita)

Modify lmValidator Fritz Bartlett

Modify lumGrabber Ioannis

After Aug 1, Redo Ioannis, Marco

using new lmValidator, lumGrabber

recalc/recover ~ all lbns

insert modifications to DB: 1% or less

Turn on public access date not decided

Ioannis& Margherita: notify DBA's for monitoring

Summer Lum Redo issues

Goal: fix ~ 1%missing and wrong data

lmDaq: 2 copies of DAQ running 2 wks

Redo: make lmServer able to run old data

with era-specific lum consts for lbn

Lum Calc and scaler “errors”

older lum calc *fails* if a specific tick never had an lbn with no hits: *looked like missing scaler record*

may need redo of some lbn script runs last fall

Periodic Lum Redo

Run weekly and monthly: std recovery

caused problems in first runs (March)

Increased db space for backups

Increase Lum lookback time to 2 months

lmRedo job: logfile to track crashes now

lumGrabber: log of differences found?

in progress; next, study Dec 08 lbns

lmValidator: when is lum code needed?

Lum DB Web Interface

Margherita Wiersma !!!

Improved Web Interface

Learned online/offline debugging/comparison techniques
sufficiently independent to recognize/resolve most bugs alone

Many misc improvements

Added Statistics to check for missing Transitions (day, store)

Another production release of new code: now default

DB reports converged

Resolved differences with online reports (bugs in both DB & online)
define online as “right” in most cases
clickable documentation near done

Finishing up plotting of rates by trigger

long term: graphics library change? CD’s choice

Lm Access

fixed subtle bug, and found workaround for “bad tick” era

parentage files not smoothly linear:

so ugly jumping back and forth between

“slow” and “fast” mode (use sum, vs. tick by tick)

Pending:

red trigger lbns need to be on bad lbns list somehow

make fast lmAccess default

restrict access to stage3

then stop making new stage3 files

then delete them

last two waiting on “redo” (Marco)

Speaker's Bureau DB

I believe all outstanding issues are resolved…

General Issues

Need update for python versions etc?

Please avoid certificates:

- they irritate users (even experts)

Kerberizing at user level will be resisted

- many applications, and online migration inflexible

Web servers:

- standard ports for remote users (firewalls)

Backups: should revive discussion?

- shapshots may be more useful than backups
  - recovery from user error, not hardware failure
  - time scale more than a few days!

Aging hardware replacement?

- crashing has stopped…back to sleep?

Online db backups? (Bill Lee comments needed)

	A	B	C	D	E	F	G	H	I	J	K
1	DB Sizes Dated Jan 11, 2008										
2											
3	**D0 Offline Production**					**D0 Online Production**					
4	Application/owner	MB	upd freq	contact person		Application/owner	MB	upd freq	contact person		
5	AC_SURVEY	0.3	static?	advisory council?							
6	ALS_OWNER	0.2		what is this???							
7	**CAL_CALIBRATION**	**28,910**	daily	Patrice Lebrun		**CAL_CALIB**	**17,022**	daily	Patrice Lebrun		
8	CASSETTE_PRD	2,118	static/Temp s	Volker Buescher		**CAL_CALIB_0**	**3,856**	static?	Probably a backup of cal_calib a		
9	**CFT_CALIB**	**5,297**	weekly or les	Dmitri Smirnov		**CFT_CALIB**	**13,043**	weekly or les	Dmitri Smirnov		
10						EHIST	32,424		Sirotenko	EPICS slow arch	
11						FANXL	7	what is this?			
12	CPS_CALIB	398	weekly	Patrice Lebrun		FPD_ONL	5	static		FPD pot moving	
13	FPS_CALIB	659	weekly	Patrice Lebrun		HDB	399		Sirotenko	Epics DB	
14	**MUON_MSC_CALIB**	**15**	static/"no rea	Linda Stutte		**MUON_CMSC_CALIB**	**9**	unused			
15						**MUON_FMSC_CALIB**	**19**	unused			
16	**MUON_MDT_CALIB**	**2**	static/"no rea	Linda Stutte		**MUON_MDT_CALIB**	**4**	unused			
17	**MUON_PDT_CALIB**	**3**	~ yearly	Linda Stutte		**MUON_PDT_CALIB**	**10**	unused			
18	OFFLINE_CALIBRATION	12	daily	Taka Yasuda							
19	RELREQ_OWNER	10		Alan Jonckheere							
20	**RUNS**	**4,187**	daily	Sirotenko		**RUNS**	**4,372**	daily	Sirotenko		
21	SAMPRD	205,429	daily			RUN_CONF	98	obsolete			
22	SAM_MONITOR_OWNER	13,939									
23	**SMT_CALIB**	**4,778**	~monthly?mo	Sungwoo Youn		**SMT_CALIB**	**12,269**	~mo/as need	Sungwoo Youn		
24	SPEAKERDB	1	day-wk	Mike Strauss		**SMT_CALIBRATION**	218		?		
25	STREAMING	0.3				STT_PARAM	1				
26	TRIGGER_OWNER	63	day-wk	Rick Jesik							
27											
28	Luminosity	556,555	daily	Sirotenko/Linnemann							
29											
30											
31	Total	822,377				Total	83,757				
32											
33	**BOLD = both online & offline**										
34		>1GB									

Backup

Dbserver reorganization? See Marco's slides…

After current p20 production run

- for now: temp servers looking at _old
- rebuild servers with cxoracle

Merger lm_access and production farm servers

- down to 2 instances?
- change to C++? Sounds like not required