Level2 Releases

- *Definition:*
  - at one point freeze the universe (i.e, all DØ libraries) in a local area (called "production area"). Then any code improvements/bug fixes are "passed released" *locally* w/o having any connection with other changes in the rest of the universe. All "passed released" code was inserted in L2PROD CMS and treated as a "different" library.

- *For Run1B+C we made 12 sub-versions of v6 and 19 sub-versions of v7*

- *The actual number of total releases where the EXE and/or STP was downloaded online was higher*
  - we made $\approx$ 30 "online" releases for v7.xx libraries averaging $\approx$ 2 online EXE/STPs per month!
  - $\approx$ 50% due to online bug fixes and $\approx$ 50% due to improvements

- *A bad period was when:*
  - in a month we had six releases producing three different STPs and five online EXEs
  - 10 EXE/STPs loaded in a 2.5 month period
  - six different releases for v07.14
  - 203 routines/RCPs/PARAMs/INCs/CONSTs... released for v07.13

- *A good period was when for three months we had the same EXE/STP (this only happened twice!)*

- *Status of L2PROD backfit:*
  - the "fixed" L2PROD libraries are: v06.11, v07.08, v07.13, v07.15, v07.17, and v07.19
  - for v06.11 43 files were backfit
for v07.08 67 (+7 PARAMs/INCs recompiled) files
for v07.13 21 files
for v07.15 14 files
for v07.17 and v07.19 zero files were backfit
  - Currently a bug has been found in L1SIM (wrong tower saturation values) affecting trigger simulations on samples w/o the TRGR bank (i.e., MC). There is a fix that we have to backfit it to all v07.xx versions

- *Some things we did not do well:*
  - NOT enough experts/personnel to attach problems. More people were needed at all areas (code management/releases, online debugging, offline/online verification, users support, etc)
  - there was not enough debuging done from the authors prior the code was given to the L2PROD librarian to be released. It was up to the limited Level2 experts to spend time debugging other people's code.
  - code changes were not well documented in individual routines
  - Any code for L2PROD release should have been picked up only from the corresponding CMS library (i.e., not from private/project areas). The code authors should have been responsible for putting their code into the appropriate CMS library
  - too many "frozen" libraries to deal with (more than 40 with $\approx$ 5000 routines!)
  - should had L2PROD groups for all relevant libraries carrying code to be production released
  - the release procedure/"production area" was confusing to people (for example code was installed in CMS of a given library but was not given to the production L2PROD librarian for release because the user thought that the code would be picked automatically)

- setting up to run the simulator was always a challenge! There were too many logicals to deal with and at the end the users didn't know what code/RCP/libraries... were running with.
- confusing to have Level2, Level1 test releases with OLBs. Sometimes people linked their code against those libraries instead of the production
- we shouldn't have had to backfit code to old L2PROD libraries. The simulator should have been up to speed before the EXE was loaded online
- release procedures and physics rep responsibilities (established on Jan 95) were not followed most of the time

Some Thoughts for L3

- We need to have the L3-panel organization with reps from the physics groups. This system was used after Jan-95 but was not fully operating according to the designed (and agreed) plan.
- We have to follow the "LEVEL2 RELEASE PROCEDURES" agreed on Jan'95.
- We must have separate groups in all appropriate CMS libraries related to L3 to store L3 specific code.
- Nothing goes online if it hasn't been simulated before. This should be forced as a part of the release procedures.
- It will be nice if the L1, L2, L3 libraries get separated so we will not have to make an L3 release if there is a change in L2 sim. The L3SIM framework should be calling a drive L2SIM framework routine and all lower level routines should be a part of the L2 production release.
- Nothing goes online if it hasn't been verified before.
- We still need a "monitor stream" for online verification. We need a group of people taking "shifts" and be responsible for the verification.
- The following small teams of people needed:

  L3 frame code
  production releases
  offline verification
  online verification
  online debugging

  The L3 panel can be constructed by the leaders of the above subgroups and the physics reps.