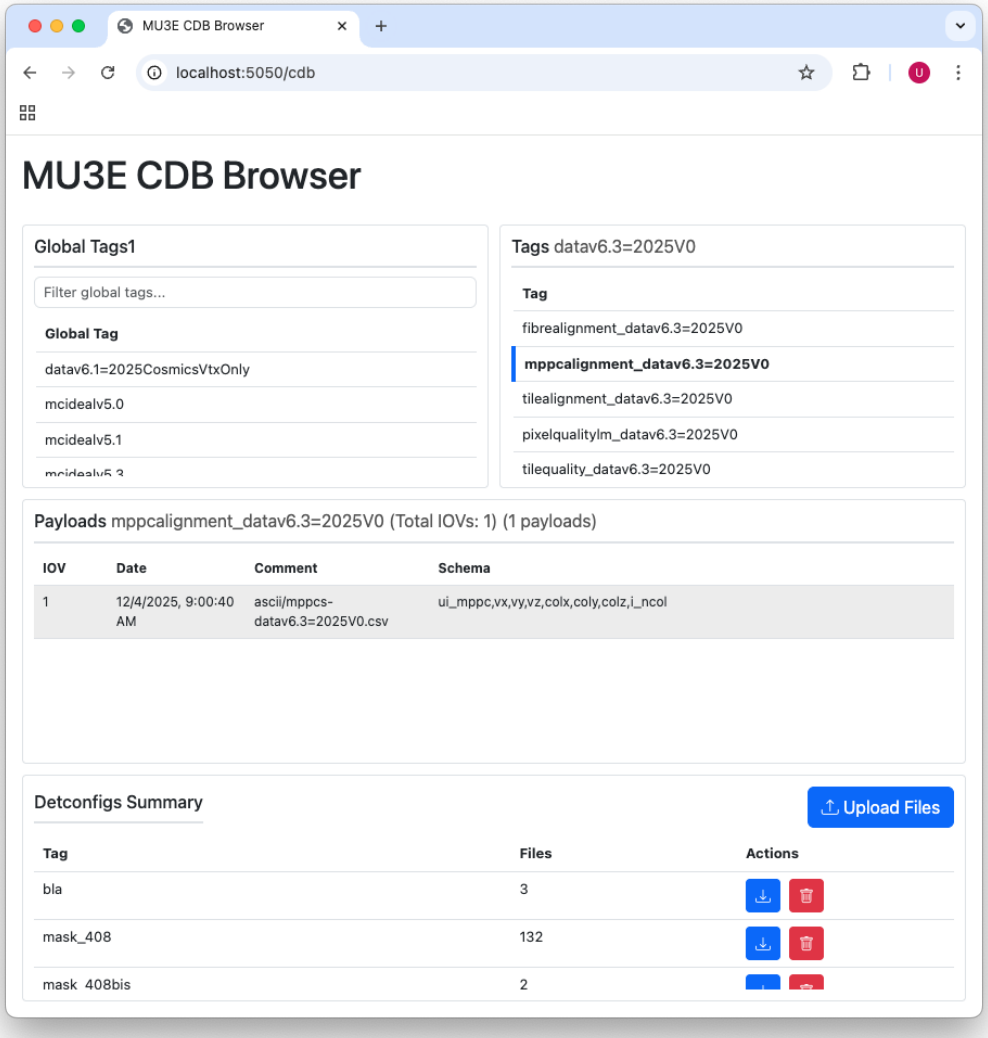
MPPC alignment

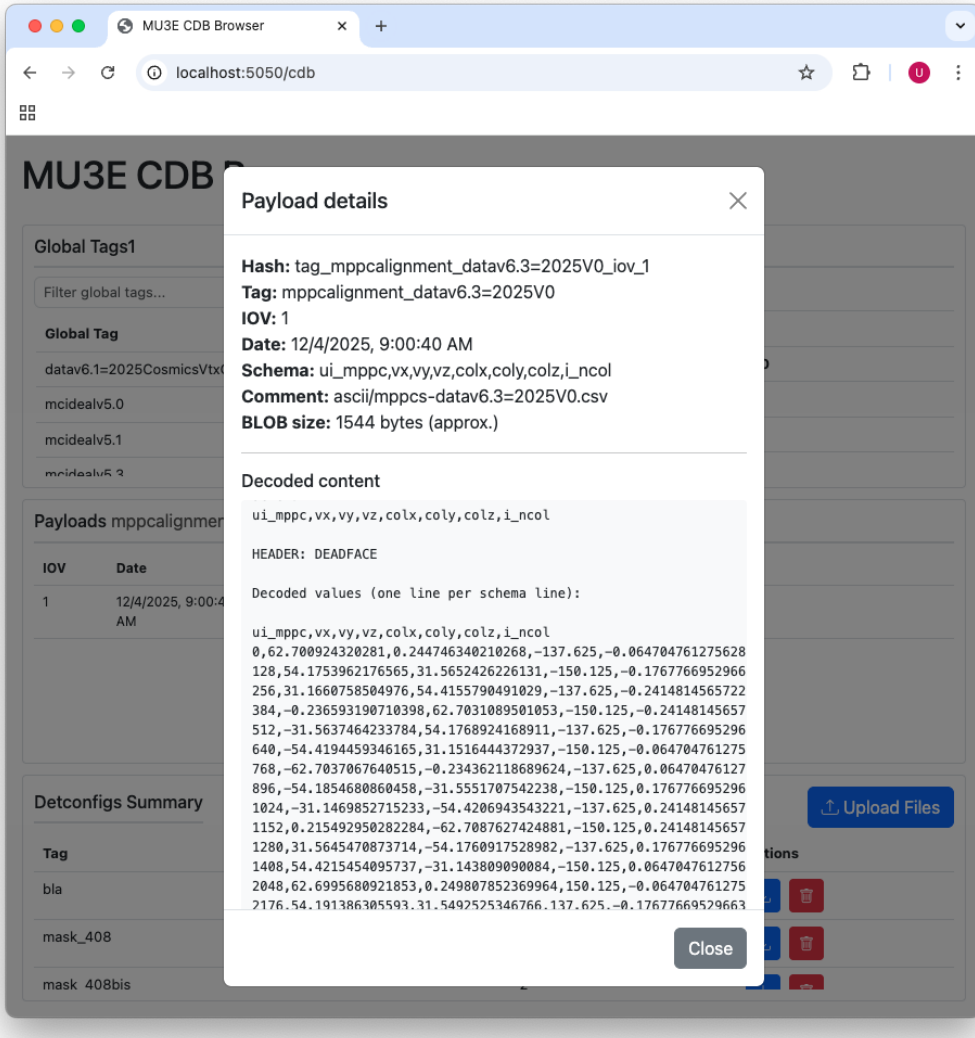
- tag_mppcalignment_datav6.3=2025V0_iov_1 was wrong
  - everywhere (= pc11740, merlin7:/data/project/mu3e/cdb, mu3ebe:/data/mu3e/cdb)
  - unclear how this happened
  - Chen Xie pointed this out to me yesterday → many thanks!
  - I fixed it this morning and Chen validated it already → many thanks!
- How to check the payload contents?
  - JSON backend

```
login001>pwd
/data/project/mu3e/offline/mu3e/_build
login001>./modules/mu3eUtil/cdb/test/cdbPrintPayload /data/project/mu3e/cdb/payloads/tag_mppcalignment_datav6.3=2025V0_iov_1
payload ->/data/project/mu3e/cdb/payloads/tag_mppcalignment_datav6.3=2025V0_iov_1<-
dir ->/data/project/mu3e/cdb/payloads/<-
hash ->tag_mppcalignment_datav6.3=2025V0_iov_1<-
hash:    tag_mppcalignment_datav6.3=2025V0_iov_1
comment: ascii/mppcs-datav6.3=2025V0.csv
schema:  ui_mppc,vx,vy,vz,colx,coly,colz,i_ncol
date:    insertion date
calMppcAlignment::printBLOB(string)
   header: deadface
   mppc = 0 v = 62.7009/0.244746/-137.625 col = -0.0647048/0.241481/0 ncol = 128
   mppc = 128 v = 54.1754/31.5652/-150.125 col = -0.176777/0.176777/0 ncol = 128
.. snip ..
   mppc = 3328 v = 31.5602/-54.1804/150.125 col = 0.176777/0.176777/0 ncol = 128
   mppc = 3456 v = 54.415/-31.1682/137.625 col = 0.0647048/0.241481/0 ncol = 128
login001>
```

Web CDB browser

- The CDB browser now displays and decodes payloads:
  (iov - run range - selection to be improved)

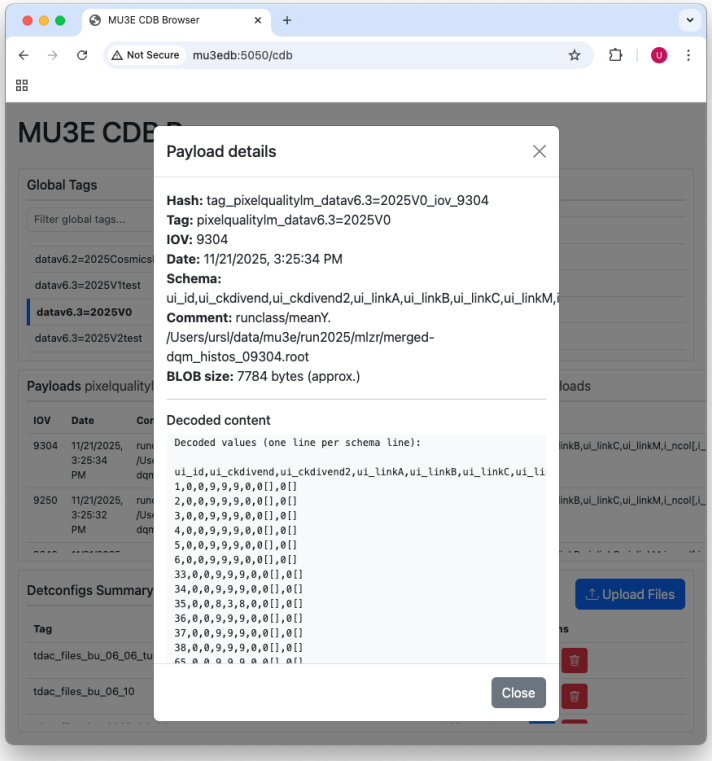




pixelquality

- More improvements?
  - Thomas S not happy with the previous version (LVDS errors, status values)
- New algorithm
  - chips
    - no hits at all (status: 8)
    - ≥ 1 subMatrix with hits at top or bottom edge only (status: 6)
    - "bad" chips, currently "102" (status: 3)
    - all links masked (status: 9)
  - links
    - no hits (status: 8) or masked (status: 9)
    - LVDS error rate > 10 Hz (status: 4)
    - LVDS error rate > 10 Hz on unmasked other link (status: 5)

  → i.e. no more consideration of link "E"
  - pixels as before
- Side-remarks
  - network alias mu3edb.psi.ch (but needs 5050)
  - payload display also works for pixelquality



What GTs are needed?

- Data
  - quality (noisy/dead/masked/. . .) of detector components
  - calibrations (e.g. Nik's PixelTime)
  - alignment information
- Monte Carlo
  - "ideal"
    - for the "baseline" (="nominal") goal (TDR, wish, . . .)
    - perfect alignment (detectors and target)
  - "realistic" - this is what one uses for (data :-) analysis
    - for understanding your data
    - correct (perfect) MC for inefficiencies and deficiencies
    - to determine efficiency (and acceptance)
    - imperfect alignment (as in data)
      (if not: no data/MC overlays with absolute coordinates possible)
      (e.g. 3-prong vertex positions on target)
- Currently, the data GT can be used for the "realistic" MC GT
  - should not add inefficiencies to the data GT
    (careful about command line arg switches and tags/payloads)

Miscellaneous

- Tiles removal in mu3eSort (Haris)
  - still on remove_missLink $\rightarrow$ should be merged
  - side note (Alex): hit addition/removal in two places - midas vs root input
- Efficiency modeling
  - pixel sensor efficiency? one single number per chip??
  - only for "mcrealistic" tag ($\varepsilon = 1$ for "mcideal" and "data")
- mu3eUtil/cdb/test/cdbWritePayload.cpp
  - now can read root files with alignment trees for sensors and mppc
  - the rest will follow
- To do
  - fibres quality coding and payloads
  - patching of significant list with fibres/tiles good run list
  - . . .