

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::printBL0B(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)

MU3E CDB Browser

Global Tags1

Filter global tags...

Global Tag

- datav6.1=2025CosmicsVtxOnly
- mcidealv5.0
- mcidealv5.1
- mcidealv5.3

Payloads mppcalignment_datav6.3=2025V0 (Total IOVs: 1) (1 payloads)

IOV	Date	Comment	Schema
1	12/4/2025, 9:00:40 AM	ascii/mppcs-datav6.3=2025V0.csv	ui_mppc,vx,vy,vz,colx,coly,colz,i_ncol

Detconfigs Summary

Tag	Files	Actions
bla	3	[Download] [Delete]
mask_408	132	[Download] [Delete]
mask_408bis	2	[Download] [Delete]

Upload Files

MU3E CDB

Payload details

Global Tags1

Filter global tags...

Global Tag

- datav6.1=2025CosmicsVtxOnly
- mcidealv5.0
- mcidealv5.1
- mcidealv5.3

Hash: tag_mppcalignment_datav6.3=2025V0 iov_1

Tag: mppcalignment_datav6.3=2025V0

IOV: 1

Date: 12/4/2025, 9:00:40 AM

Schema: ui_mppc,vx,vy,vz,colx,coly,colz,i_ncol

Comment: ascii/mppcs-datav6.3=2025V0.csv

BLOB size: 1544 bytes (approx.)

Decoded content

```
ui_mppc,vx,vy,vz,colx,coly,colz,i_ncol
HEADER: DEADFACE
Decoded values (one line per schema line):
ui_mppc,vx,vy,vz,colx,coly,colz,i_ncol
0,62,700924320281,0,244746340210268,-137,625,-0,064704761275628
128,54,1753962176565,31,5652426226131,-150,125,-0,1767766952966
256,31,1660758504976,54,4155790491029,-137,625,-0,2414814565722
384,-0,236593190710398,62,7031089501053,-150,125,-0,24148145657
512,-31,5637464233784,54,1768924168911,-137,625,-0,176776695296
640,-54,4194459346165,31,1516444372937,-150,125,-0,064704761275
768,-62,7037067640515,-0,234362118689624,-137,625,0,06470476127
896,-54,1854680860458,-31,5551707542238,-150,125,0,176776695296
1024,-31,1469852715233,-54,4206943543221,-137,625,0,24148145657
1152,0,215492950282284,-62,7087627424881,-150,125,0,24148145657
1280,31,5645470873714,-54,1760917528982,-137,625,0,176776695296
1408,54,4215454095737,-31,143809090084,-150,125,0,064704761275
2048,62,6995680921853,0,249807852369964,150,125,-0,064704761275
2176,54,191386305593,31,5492525346766,137,625,-0,17677669529663
```

Detconfigs Summary

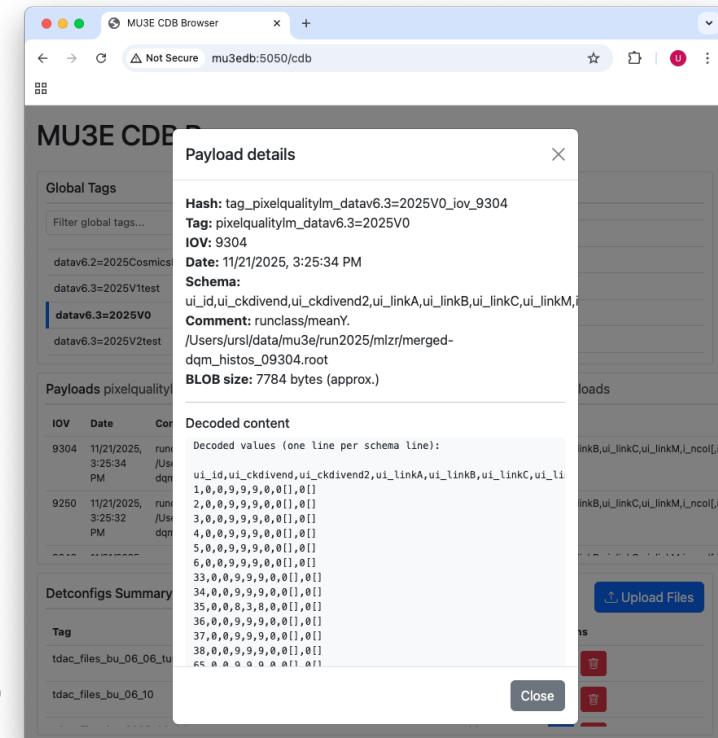
Tag
bla
mask_408
mask_408bis

Upload Files

Close

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 → 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 ($\epsilon = 1$ 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
 - ▷ . . .