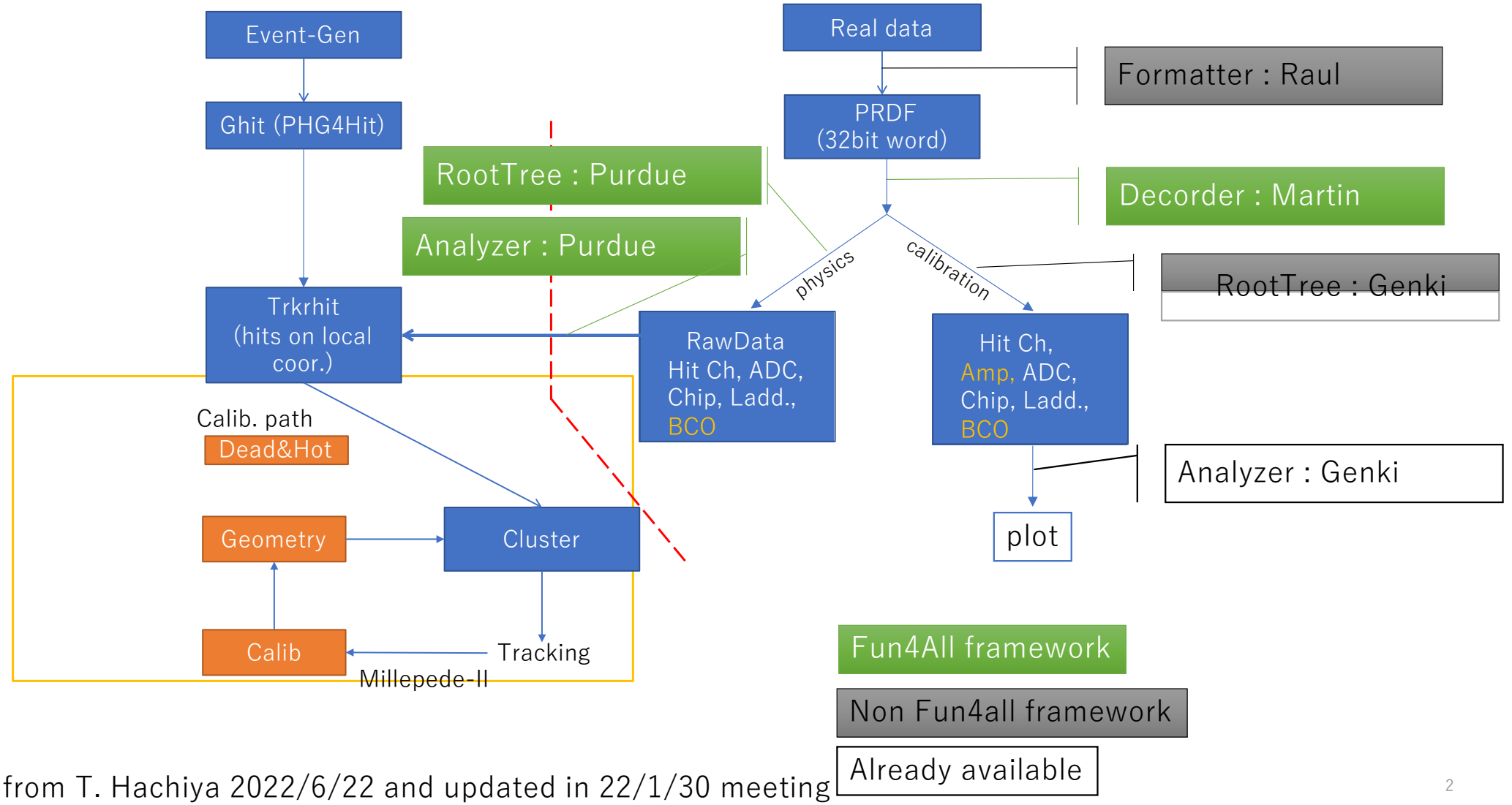
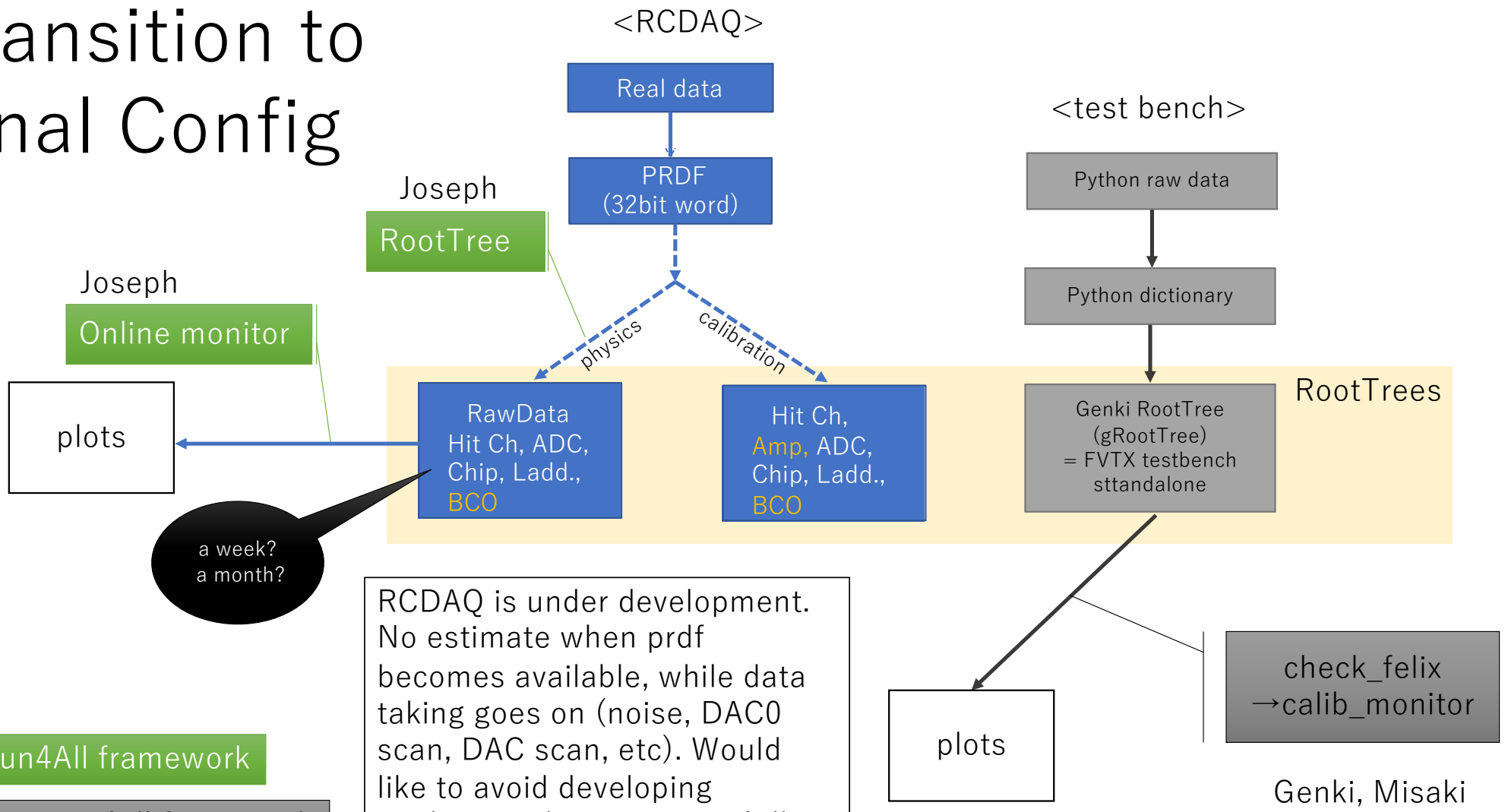
Transition to Full RCDAQ

Data Flow for INTT clustering in real data



Slide from T. Hachiya 2022/6/22 and updated in 22/1/30 meeting

Transition to Final Config

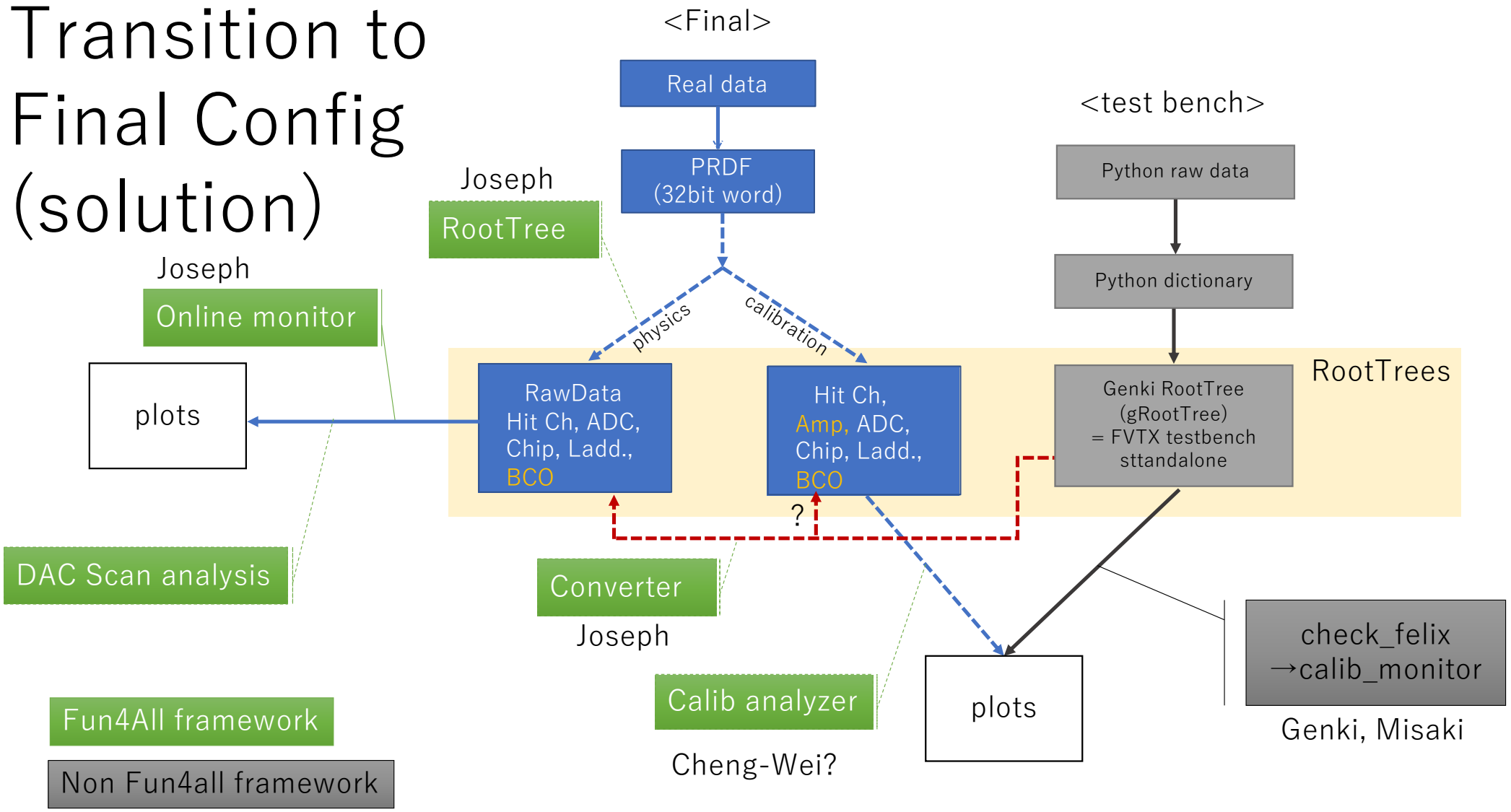


RCDAQ is under development. No estimate when prdf becomes available, while data taking goes on (noise, DAC0 scan, DAC scan, etc). Would like to avoid developing analysis code in non-Fun4all framework.

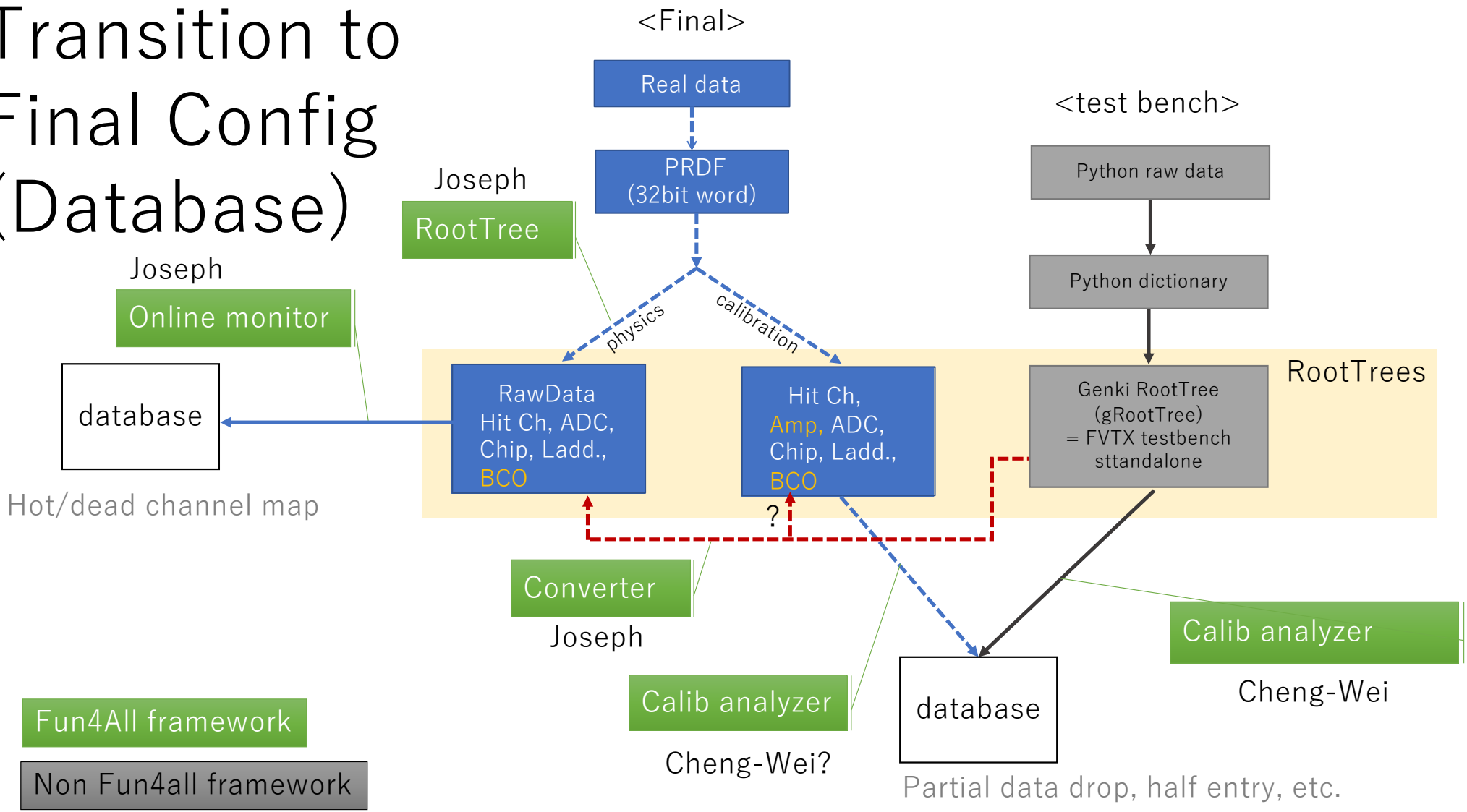
Fun4All framework

Non Fun4all framework

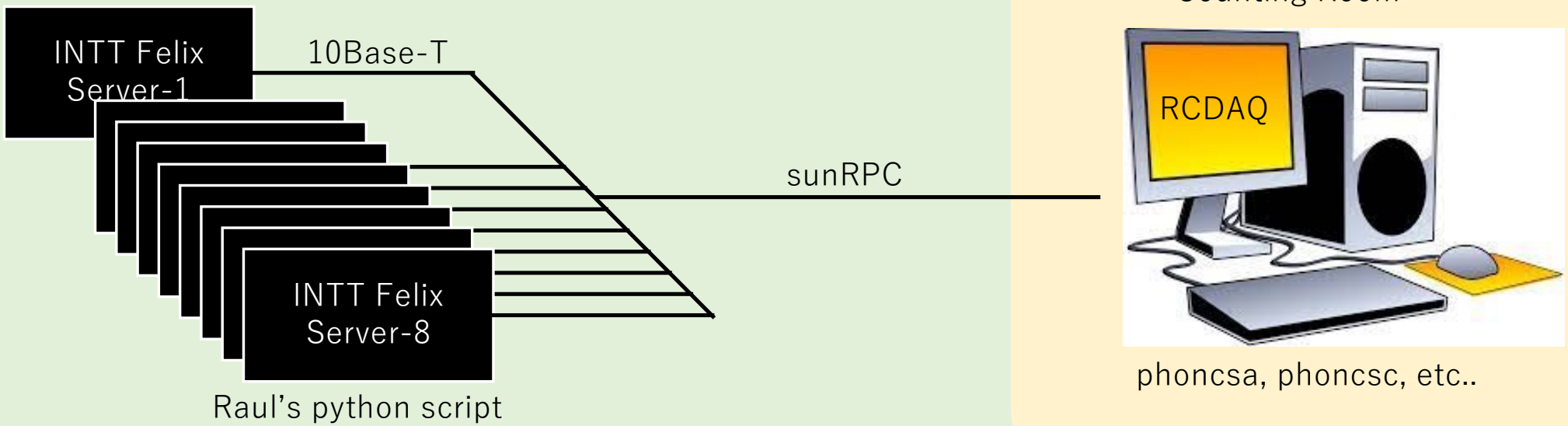
Transition to Final Config (solution)



Transition to Final Config (Database)

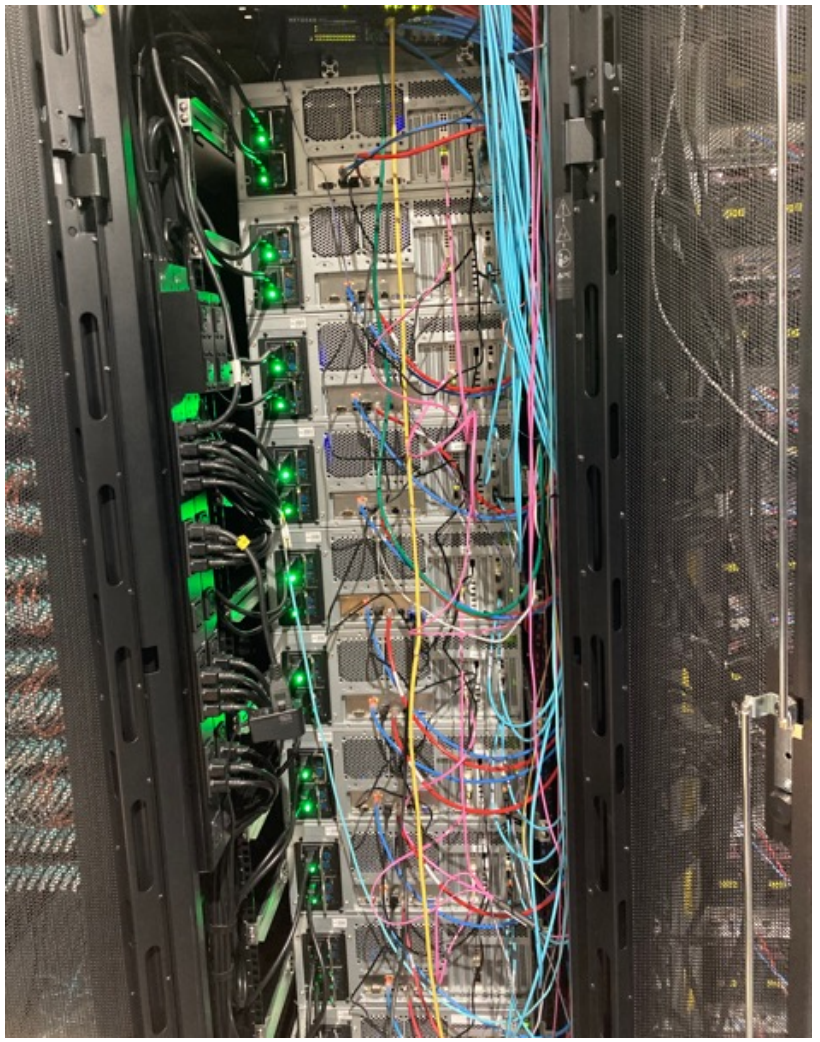


Expert GUI Design in 1008

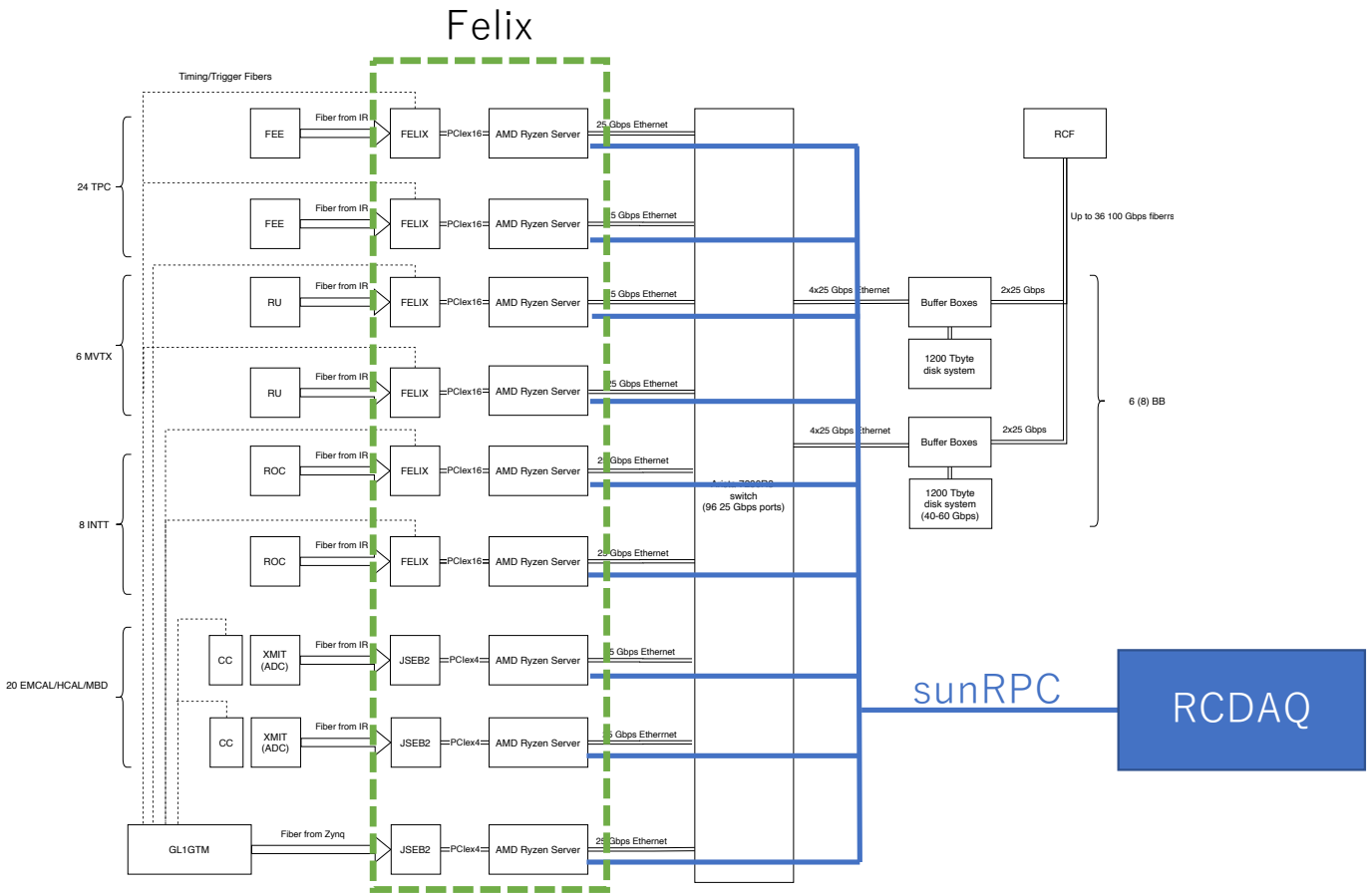


FELIX Rack Layout

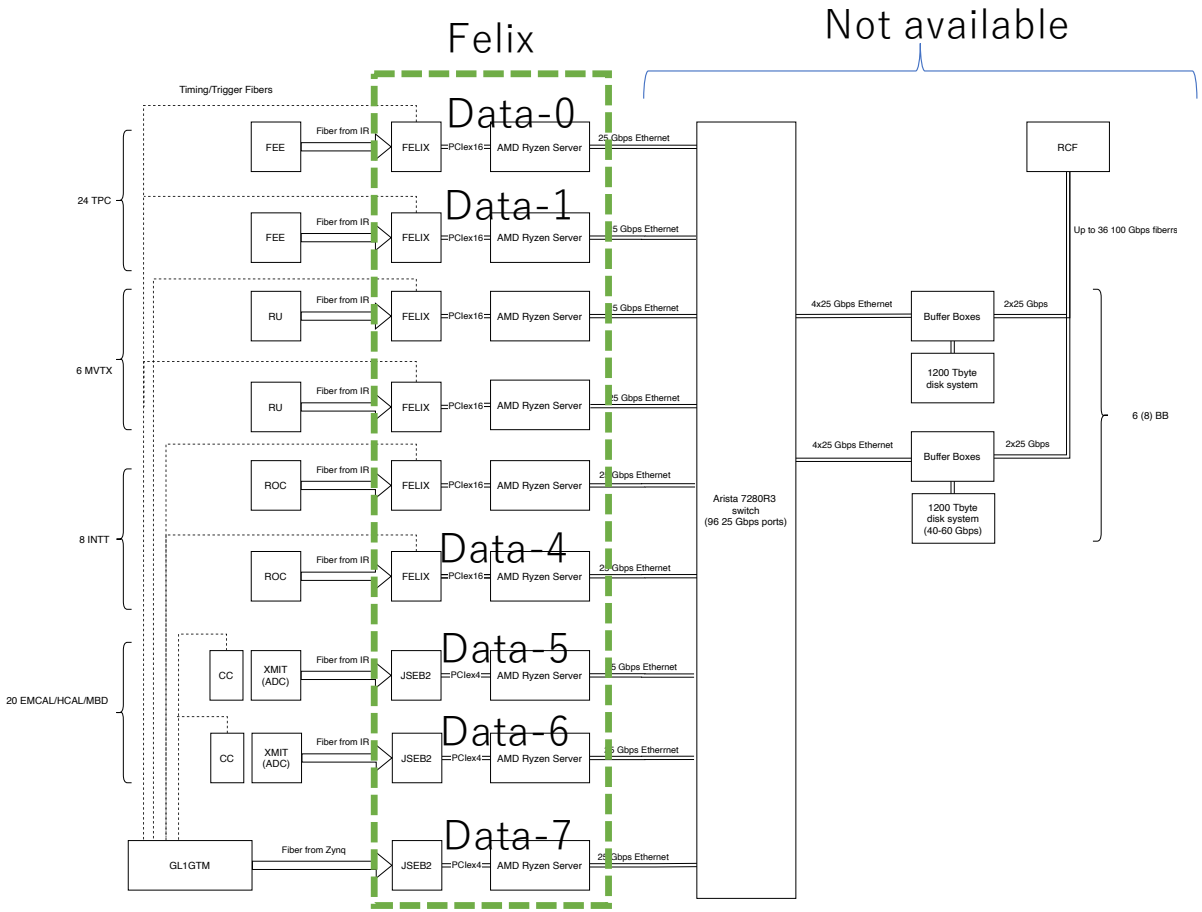
Slot #		ROC
1	intt0	0S, 1S
2	intt1	2S, 3S
3	intt2	4S, 5S
4	intt3	6S, 7S
5	intt4	0N, 1N
6	intt5	2N, 3N
7	intt6	4N, 5N
8	intt7	6N, 7N
9	intt (spare)	
10	TPOT	



RCDAQ Final Configuration

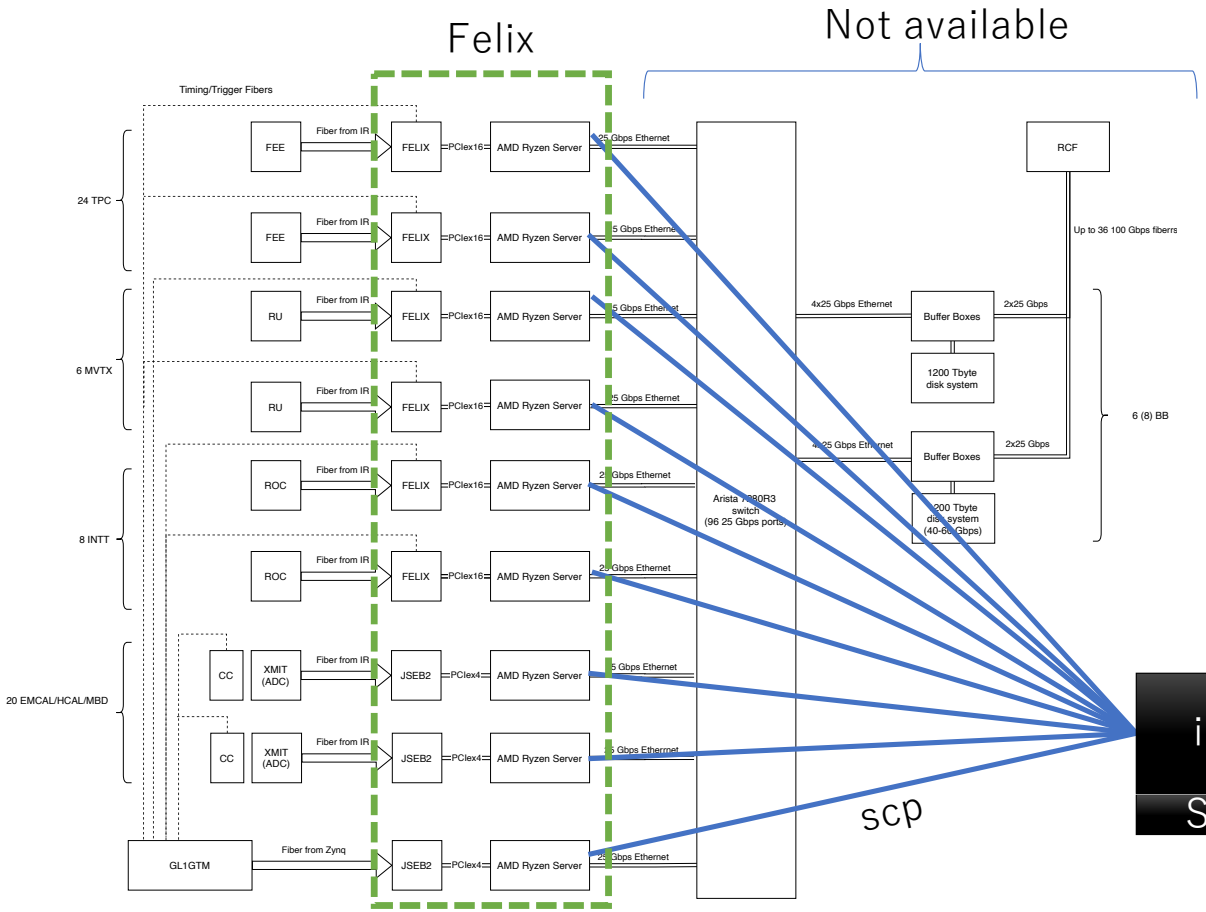


RCDAQ Final Configuration (Transition Period 4/26~?)



- This period, data are taken by each felix servers individually.
- How to analyze these data?
- It is not efficient to analyze data by installing our analysis packages to each individual servers.

RCDAQ Final Configuration (Transition Period 4/26~?)



inttdaq

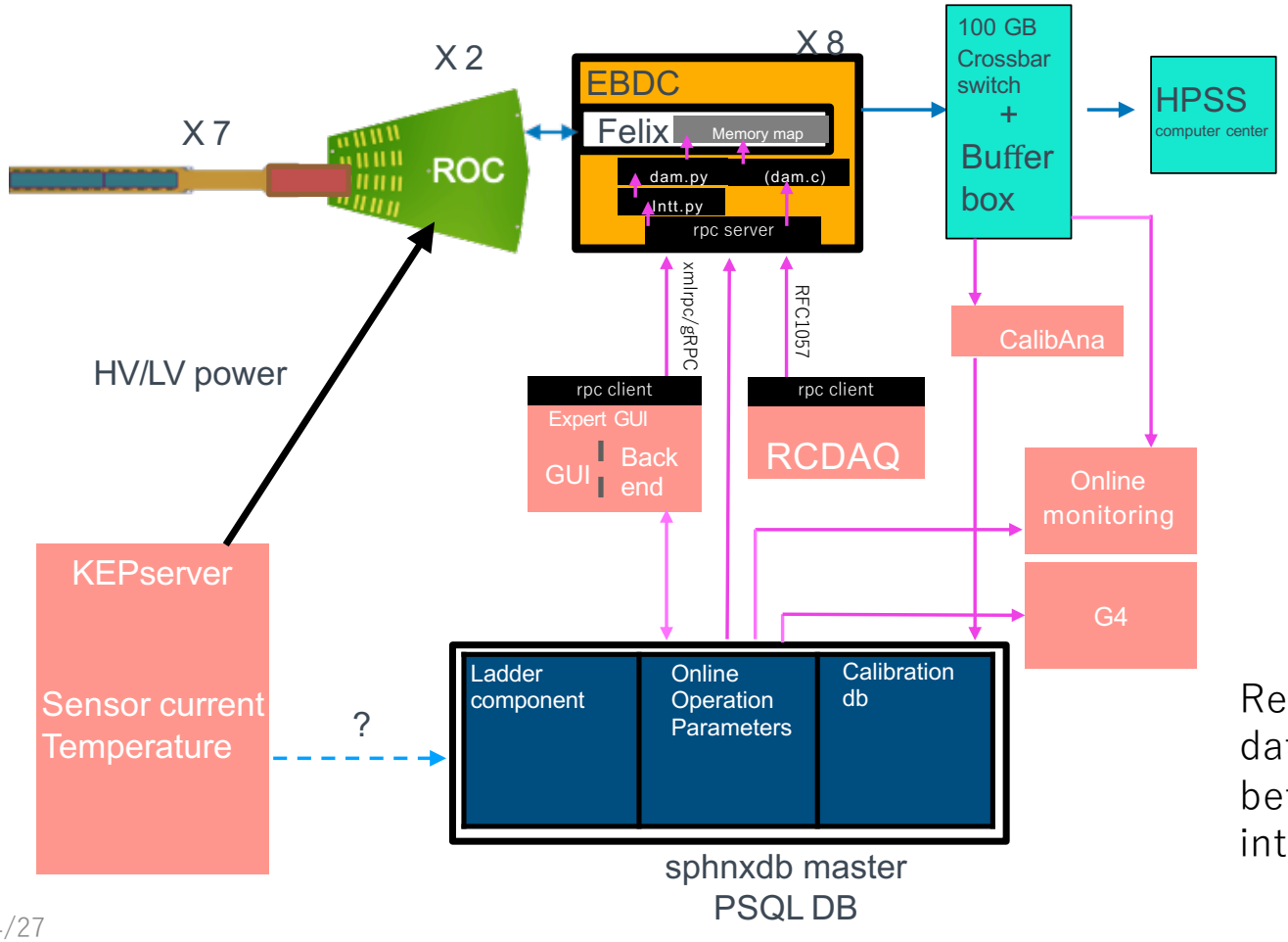
SQL DB

analysis

- Mounting inttX server discs to inttdaq was dismissed by Martin
- Scp data to inttdaq is quick and dirty solution

- 300MB/16 ROCs of data
- 1TB local disc space approaching full
- Back up in Genki's 2TB hard disk in progress.
- We may be able to survive like this until beam data taking.

INTT DAQ & SC Schematics



Requested to setup INTT database to Martin. We better patiently wait until intt-rcdaq is launched.

Slide from : 221012_DAQ_preparation.pptx

Bottom line

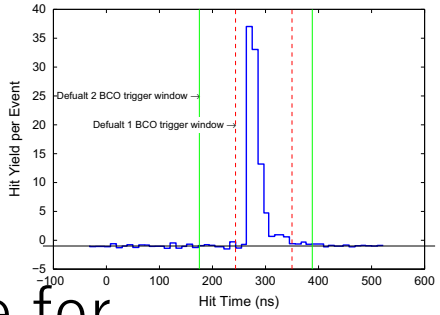


Fig. 22. Timing distribution of the FVTX hits relative to the RHIC beam clock.

- Raul is working on felix servers and rcdaq. No estimate for when prdf becomes available
- Started walk around temporary solution to keep developing software in Fun4All framework without waiting for prdf data becomes available.
- The first collision may occur in 2 to 3 weeks. We have to be ready to develop the software necessary to **time in and other health checks** by then**.**

If not time in, data is just junk…
If hot channels are not masked, even healthy data may be compromised…
We need to develop software in advance and train ourselves how to handle properly

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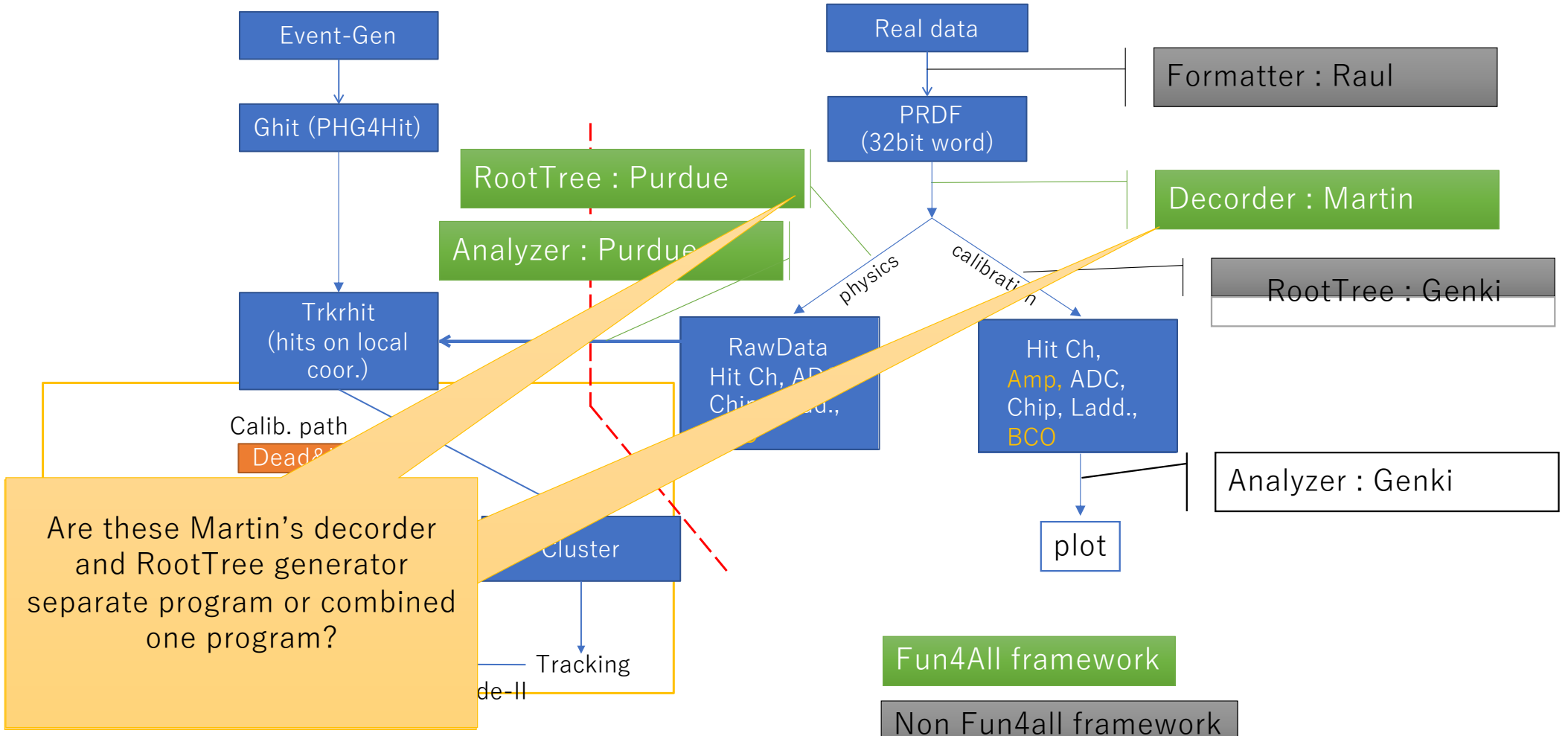
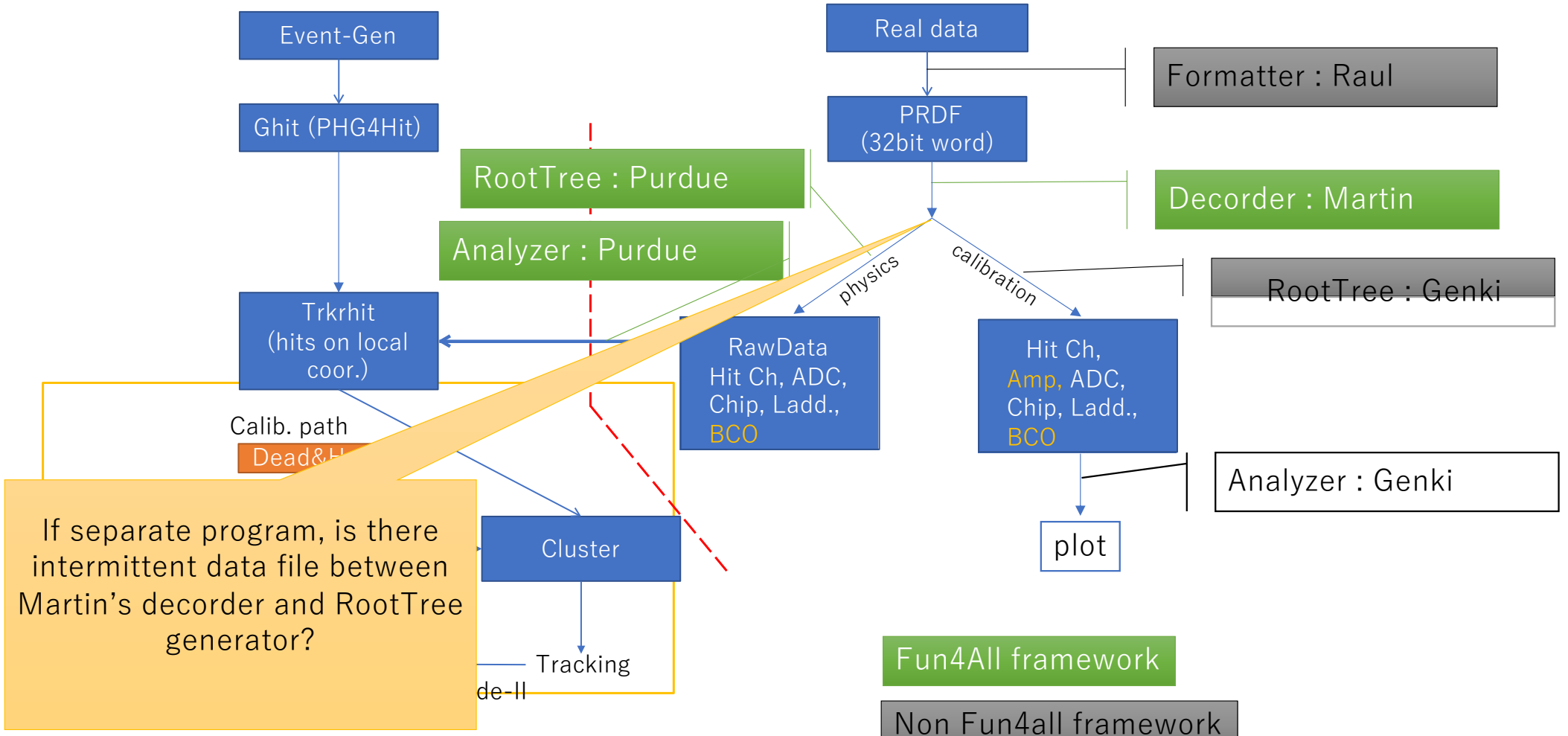


Data Flow for INTT clustering in real data



Root tree developer?

- For FVTX, the raw information are packet ID, chip ID and channel in chip, i.e. direct output from unpacker , which can be mapped to strip_z and ladder IDs (from Jing Huang).

- We can do things in the same way, i.e.
  - Raul pack , e.g. *chip ID and channel ID*, into the raw data.
  - Unpacker unpack the raw data into, e.g. *chip ID and channel ID*
  - Code to map, e.g. *chip ID and channel ID*, into the variables needed for offline reconstruction. according to the already established numbering convention in the reco software:
    - layer: layer index 0-3, i.e. 4 layers
    - ladder_phi: ladder index in each layer (0-11)@B0L0, (0-11)@B0L1, (0-15)@B1L0, (0-15)@B1L1
    - ladder_z: sensor index in each ladder 0-4, i.e. 4 sensors:
    - type-B(idx:1) == type-A(idx:0) == (origin) == type-A(idx:2) == type-B(idx:3)
    - strip_z: strip index along Z in each sensor, i.e. (0-7), (0-4), (0-7), (0-4)
    - strip_phi: strip index along phi in each sensor, i.e. (0-255)

- Joseph contacted Martin (on vacation till 07/04). He is now trying to figure out the spatial location of each channel to prepare for the mapping using Fun4all.

This is unique to physics data, and not necessarily applied to calibration data, right? I don't see the point to have z,y,z coordinate for calibration data. The calibration RootTree sticks with present Genki's RootTree like format, I guess.