ACTS

status update – experience at Belle II

5 June 2020
Area-D Meeting

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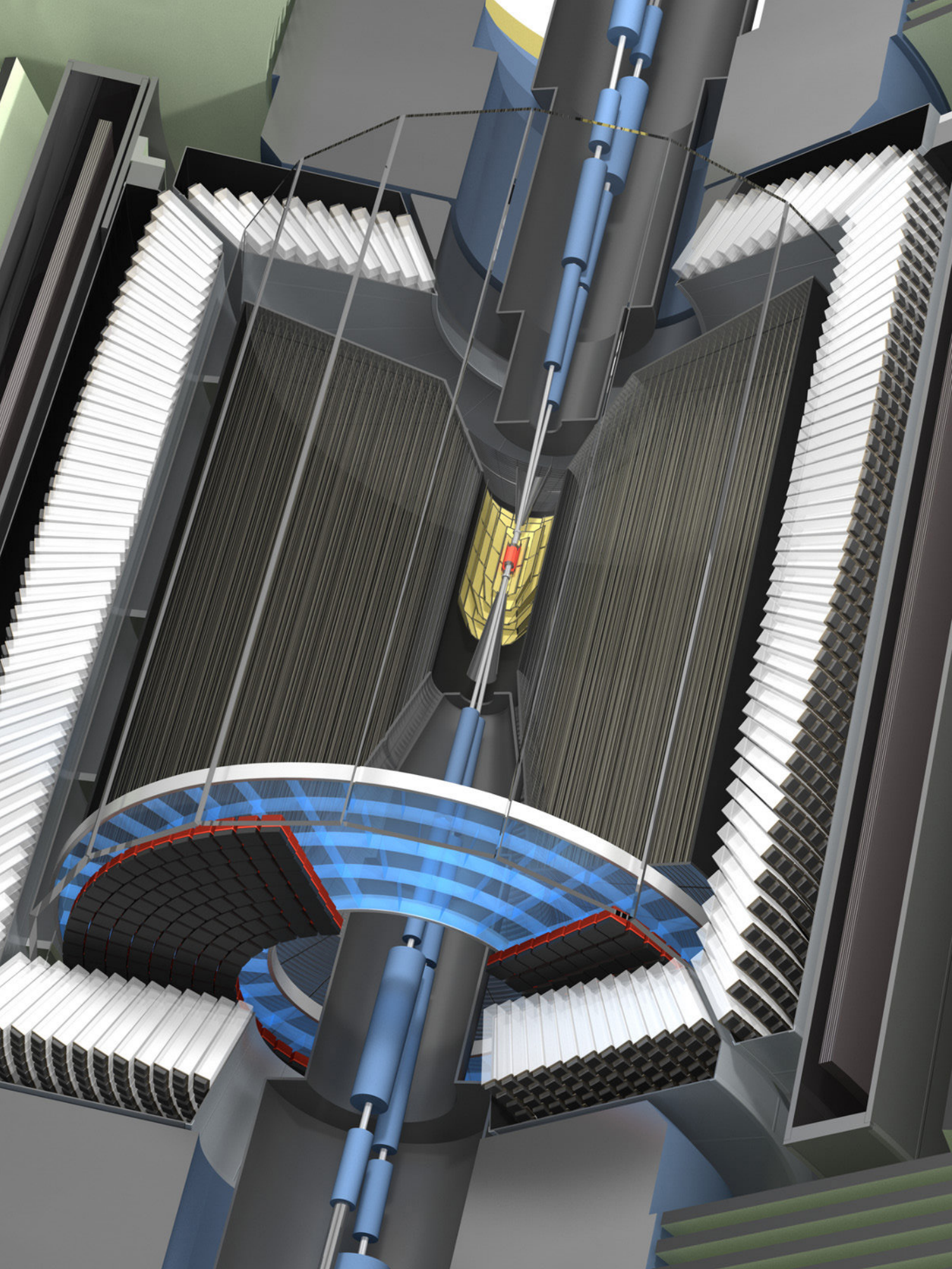
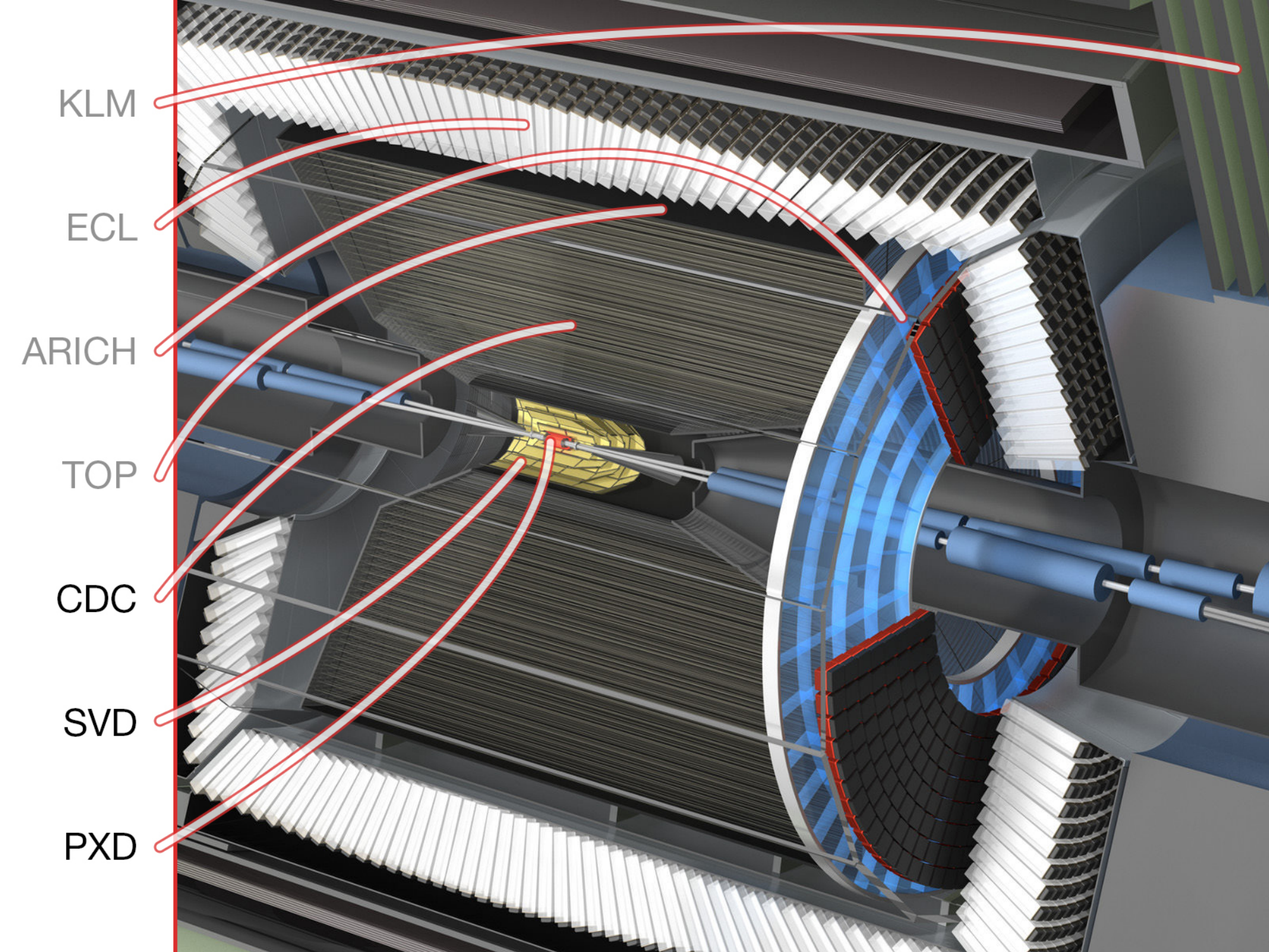
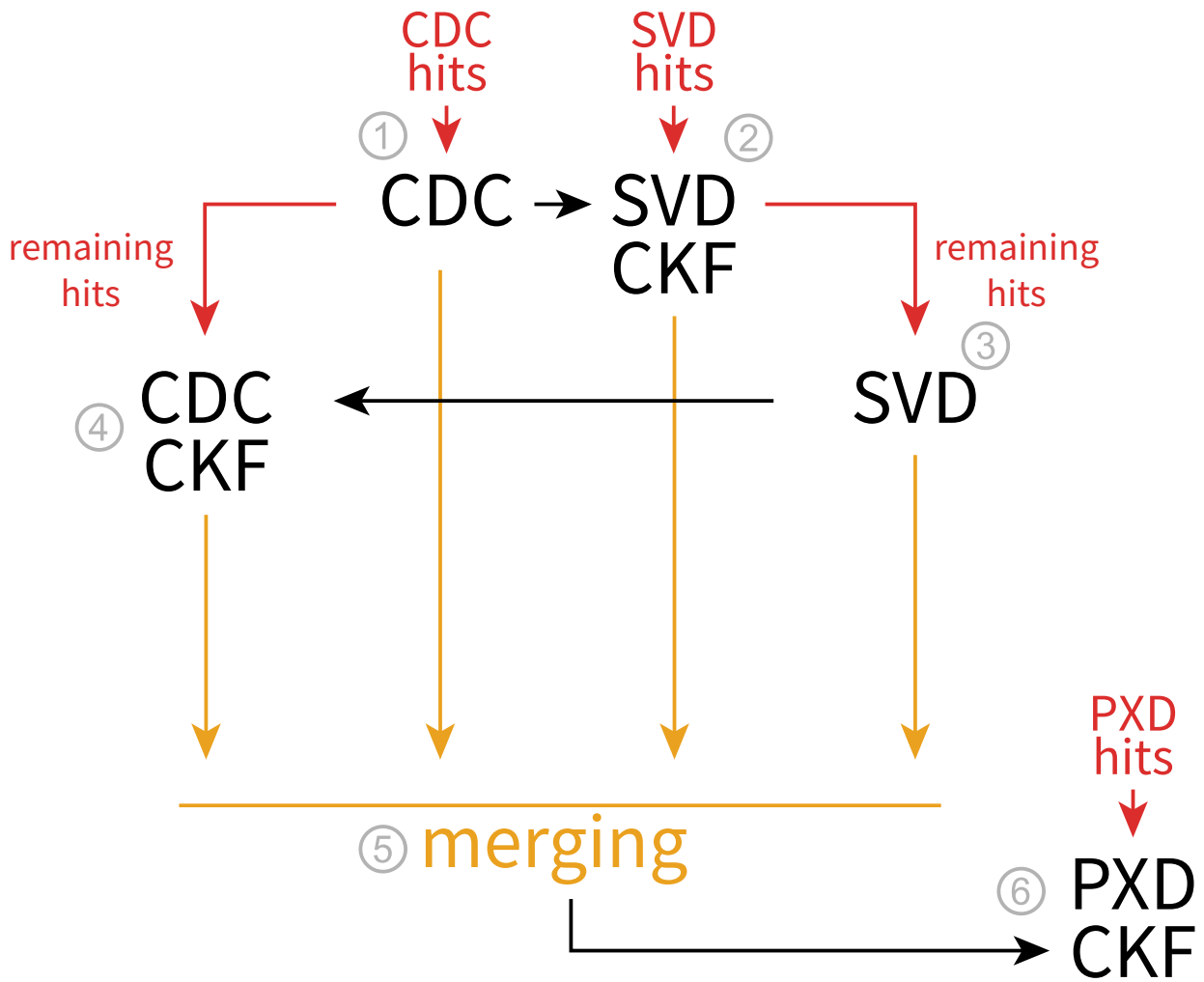
Part 1

Belle II




KLM
ECL
ARICH
TOP
CDC
SVD
PXD

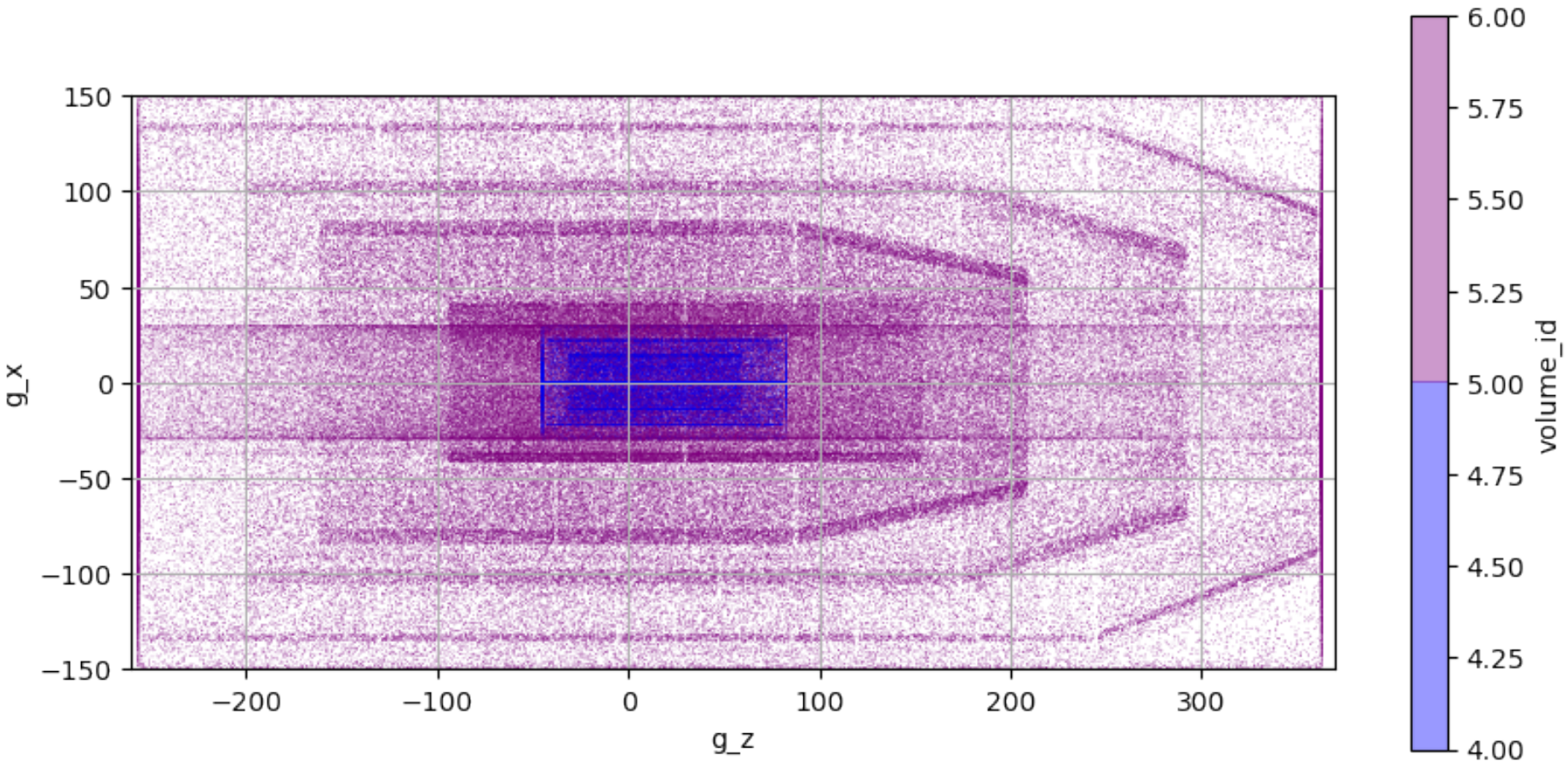
Belle II Tracking — modular approach



Part 2

Belle II Geometry in ACTS

PXD + SVD — propagation



PXD + SVD — track reconstruction

- slanted parts: merged into ACTS!
  - #200 ‘Introducing ConeVolumeBounds’ 🔗
- ✓ load PXD from Belle II TGeo geometry
- ✓ use `PhotonCollision:gmgm2bbbar=on` (don’t tell anyone)
- ✓ particles produced, but ...

problem: digitization

- digitization step *should* write out hit and truth info
- non-functional for TGeo-based detectors ☹
- → write out hits directly after simulation

Part 3

ACTS workshop

ACTS workshop — takeaways

- deeper insight into TGeo parsing (PANDA, slanted Belle II parts, ...)
- deprecate TrackingGeometry infrastructure (#13 🔗, #165 🔗, #185 🔗)
  - replace layers with volumes → volumes inside volumes, ...

  → TPC/CDC

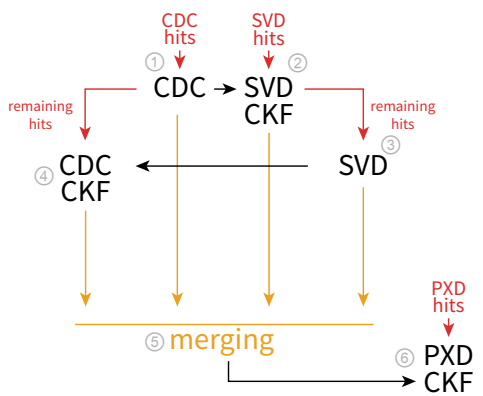
  → simplified navigator

Part 4

summary

summary

- ACTS workshop: loads of geometry...
- currently working on reco in Belle II silicon
- CDC: (future) major changes in ACTS

next steps

- Belle II tracking chain w/ ACTS
  - basf2 / ACTS?