pfRICH Software Update

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pfRICH General Meeting

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Geometry

- Bill Li (almost) has a working skeleton in dd4hep, with the vessel ported from CAD, and other components and codes dropped in from the standalone repo
- Need latest CAD model
- Need test beam prototype, making every attempt to do this in dd4hep

- Did not discuss IRT in the last meeting, looking forward to the discussion in the dRICH group

Other Test Beam needs

- Data Acquisition & Co → Alexander
- HGCROC3 calibration (Thresholds, latencies, delays, Interface to the DAQ, Interface to the offline codes
  - Need tools, people, some with hardware experience. Methodology is known, but we have little practical experience
- Computing. Ideally our own computer. Need to set up and test in advance
- Online monitoring and reconstruction → Can recycle some, hopefully recruit people
  - GEM tracker information, HRPPD hit and gain maps, timing plots, …
  - Some tasks suited for a good student
  - Interface to the beam line Cherenkov counter needs a dedicated person
  - Identify and suppress noisy pixels, ideally a pi/K picture, …

Offline Test Beam reconstruction

- Connection to IRT
- HRPPD PDE tuning based on real data, aerogel transmission data tuning, etc against simulation
- Component alignment? Probably easiest to do it by hand in a few days timescale, key is a reliable visualization tool
- Data analysis between June 2024 and FDR in Fall 2024.
  - Software task: multiplexing simulated and real data
- Paper?