Roman pots and OMD updates

Alex Jentsch

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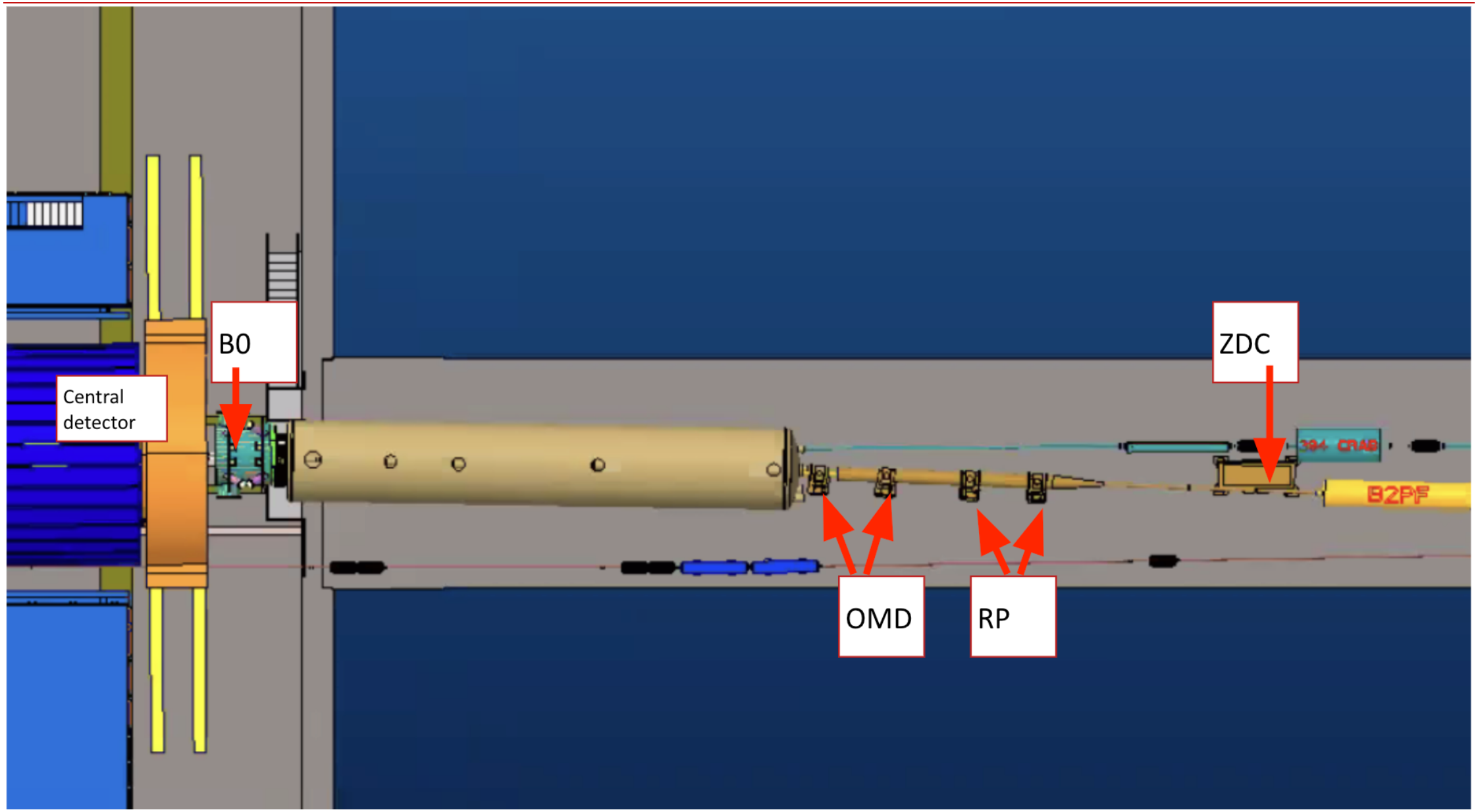
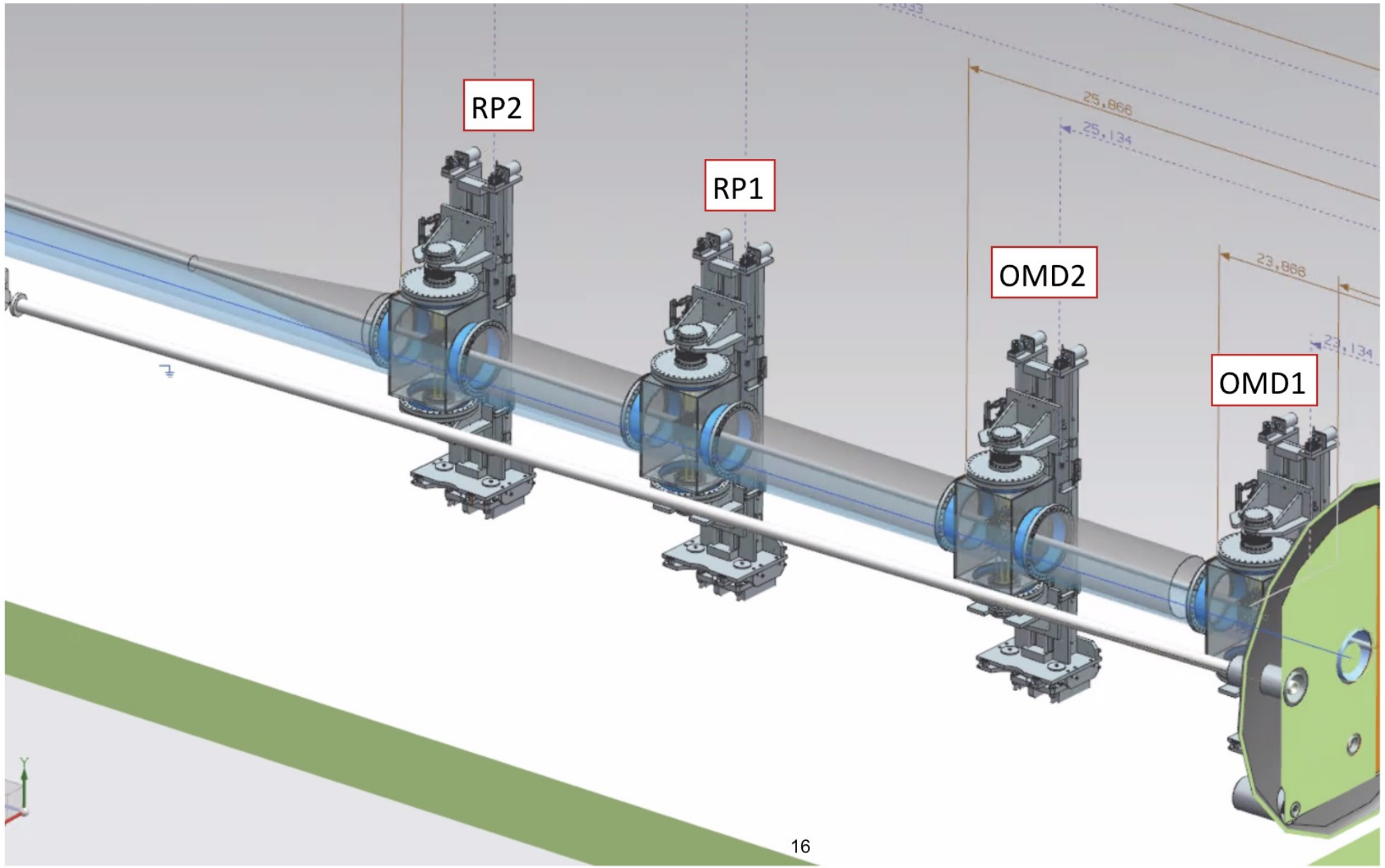
Detector placement – OMD

- Off-Momentum Detectors have to move from their nominal locations to make space for the cryostat housing the B0apf -> B1apf magnets.
- Work in-progress to assess impact (if any) to nominal acceptances (no major issues expected).
  - **Action item:** Will update geometry in DD4HEP.
- Plan to add a de-featured version of the support structure into the DD4HEP geometry so we can start looking at the impact on neutrals heading to ZDC.

Detector placement – OMD



Detector placement – OMD

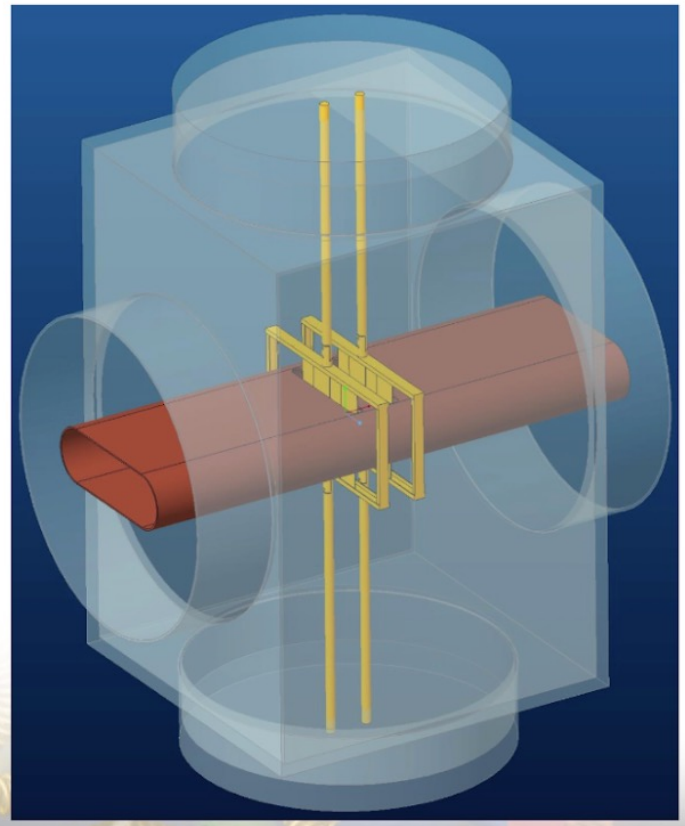


Detector placement – Roman pots

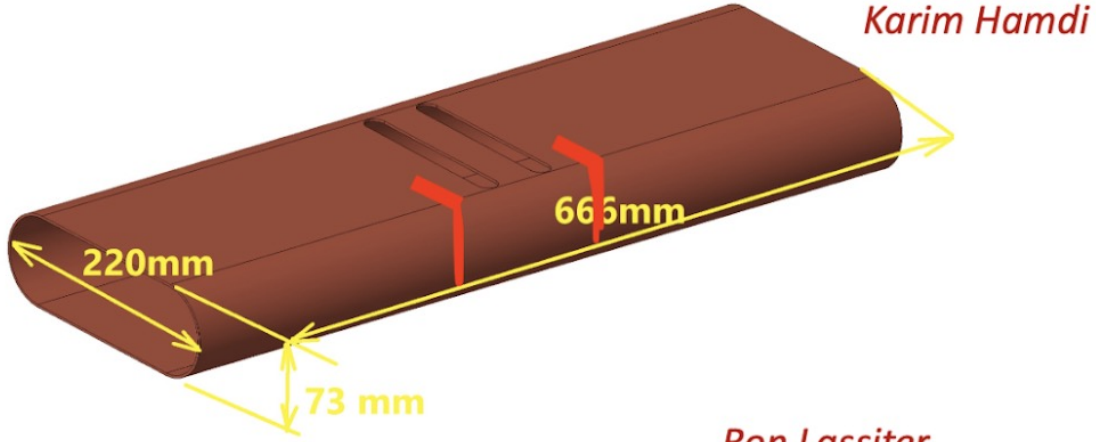
- We are still waiting for updated information on the impedance question.
- We suggested several possible solutions, including reducing the separation distance between the cavities to reduce the volume of the resonant cavity created between the stations.
  - **Action item:** Follow-up.

Detector placement – Roman pots

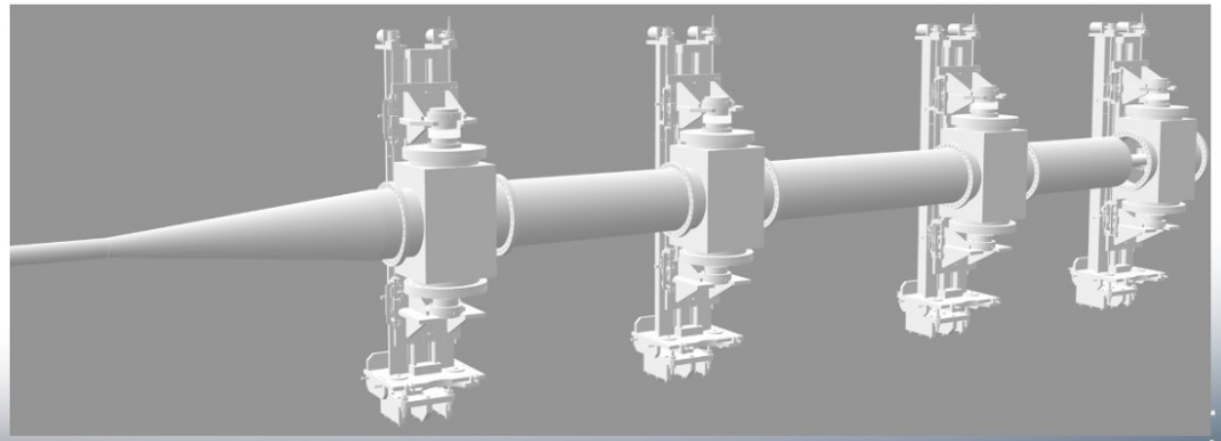
Roman Pot – RF Shielded



Karim Hamdi



Ron Lassiter



Reconstruction in DD4HEP

- Both Roman pots and OMD have functional reconstruction code.
  - There was a bug in the tracking (specifically the translation of the GEANT hits into the PODIO format) that broke RP reco as well (also true for central tracking).
  - ➢ **Action item**: follow-up and ensure things are working for the simulation campaign.
- David Ruth has been working hard on the ML implementation for the RP reconstruction.
  - Basic ML method works on toy samples.
  - ➢ **Action item:** Alex needs to provide training samples for David to use (today).
- Digitization is in-progress for both detectors → needed to include the timing information.
  - ➢ This will be important for having a proper hit clusterizer to reject background hits.
  - ➢ Also needed for pixel-related smearing (less-important right now – angular divergence is the main source of smearing).