Barrel EMC Installation

Lars Schmitt, FAIR

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- Background on EMC Installation
- Improved Scenario
- Impact on PANDA Mechanics
- Conclusions

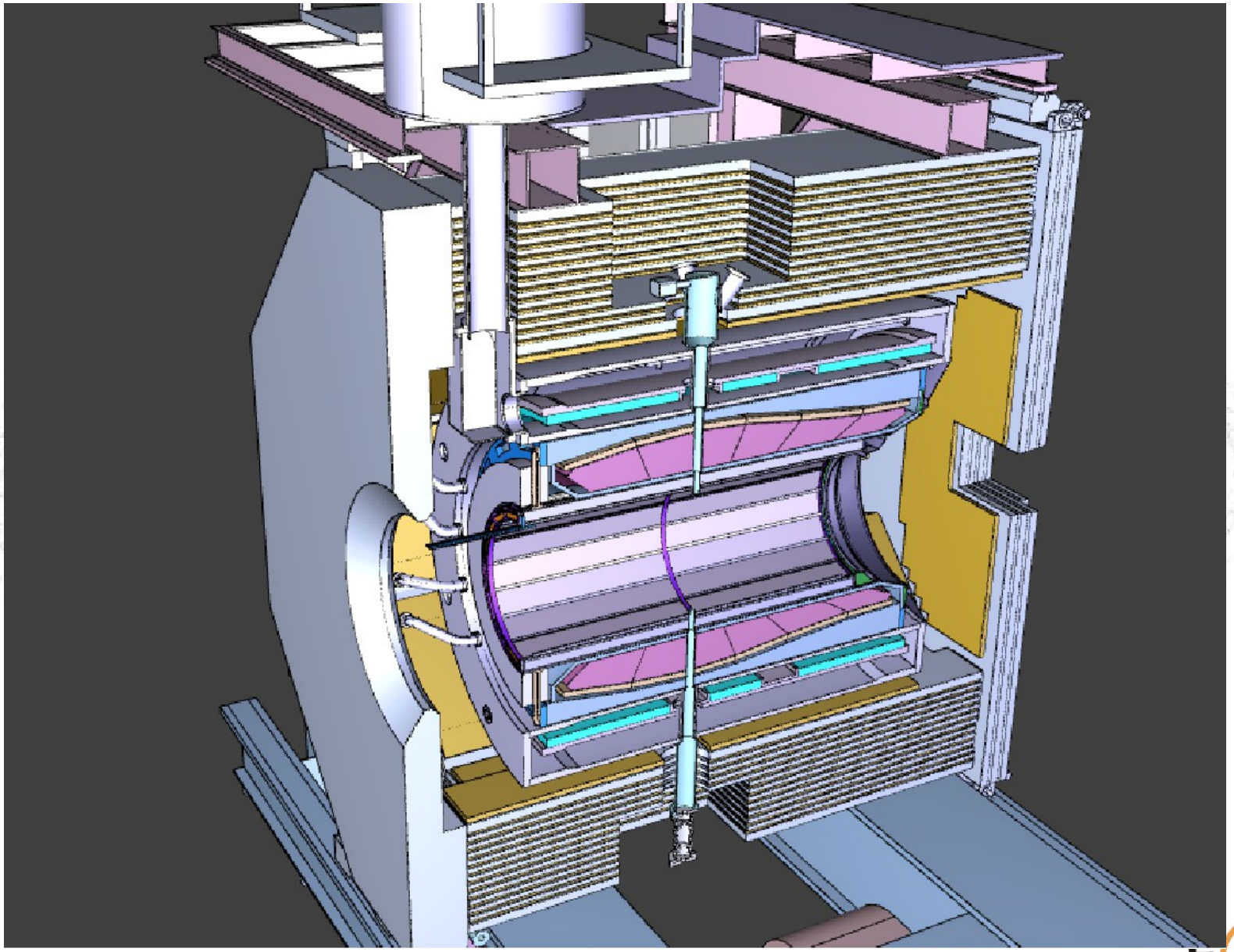
Background on EMC Installation

- Present assumptions:
  - All system are installed at once and completely
  - EMC slices are not accessible after installation
- New boundary conditions on barrel EMC:
  - Not all funding available, in particular for missing crystals
  - Crystal production delayed & slower
  - First physics aimed at in 2019
- Conclusion on installation:
  - Dismounting all to complete EMC takes very long (>1.5 y)
  - Alternative: wait with everything till EMC is complete

Improved Scenario

- Modified EMC mechanics:
  - Individual mounting of slice cases on rails or ball bearings
  - Slices slide from the back
  - The rest of the EMC stays in place
- Central tracking (MVD/STT) and DIRC readout move out, DIRC radiator stays
- Top and bottom slices with target pipe passing and DIRC support need to be installed
- CMS barrel: fixed on rails screwed on the hadron calorimeter.
- PANDA case:
  - Thicken cryostat vessel in order to put some rails on it
  - Changes of the shape of the EMC slice support beam
  - Adaptation of thermal insulation
  - No changes on crystal shape
- Additional benefit: EMC slices can be serviced later

EMC Setup



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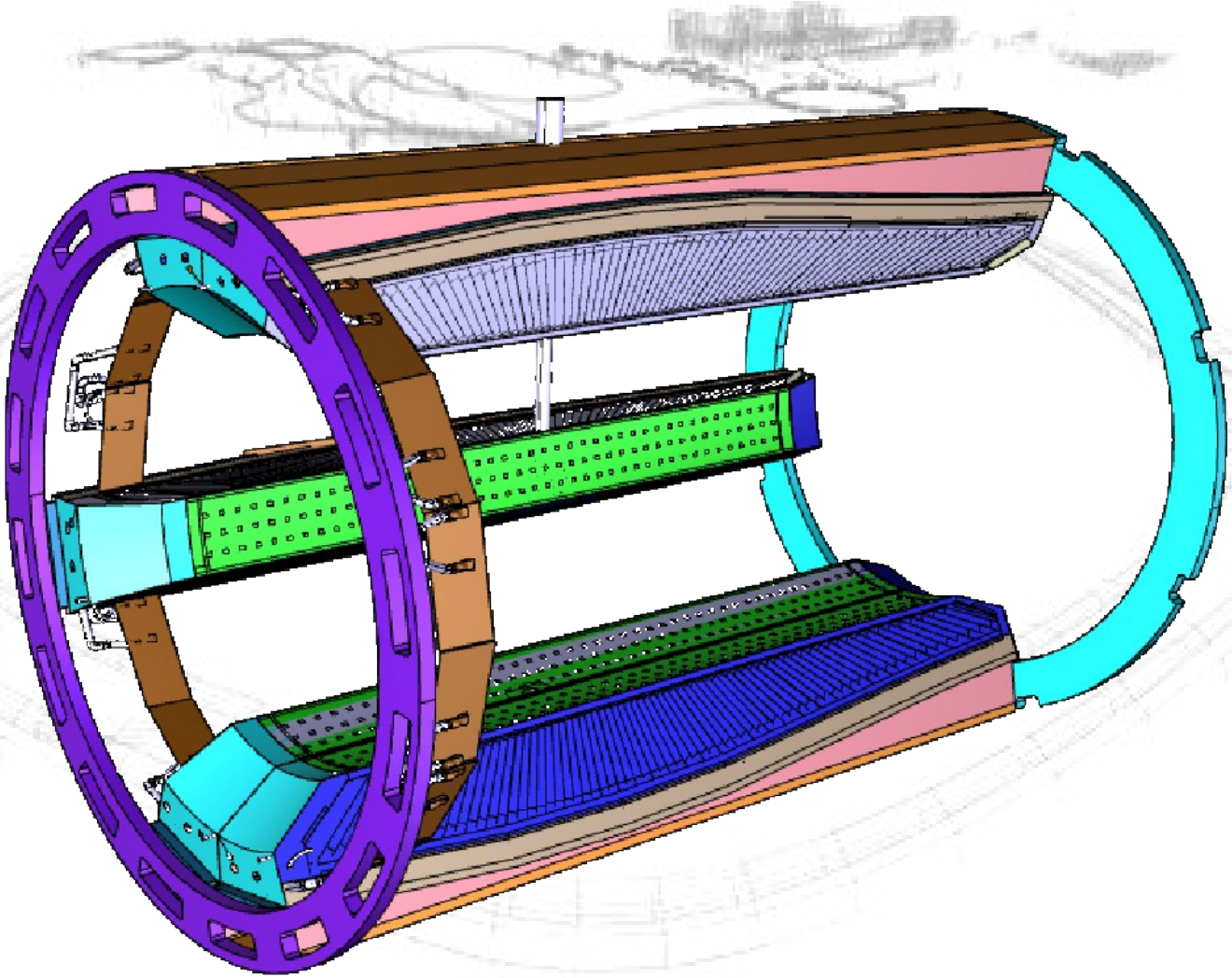

Impact on PANDA Mechanics

- Magnet and Cryostat
  - Cryostat design: mount rails on inside
    - Load only one slice rail at a time, weight on support ring
    - Alternative: full load on cryostat rails
  - Total load on cryostat/magnet remains
  - Auxiliary platform to detach to give space for EMC mounting
- EMC Mechanics
  - Modified slice support beams and cases
  - Detachable cooling infrastructure, maybe integrated in slice
  - Top and bottom slices need to be complete from the beginning
- Other Detectors
  - DIRC readout already planned to be removable,
    now: detach fully
  - Tracker mechanics does not change.

Conclusions

- EMC project planning risks:
  - Delayed funding
  - Delayed crystal production
- Readjust installation planning to react on risks
- New scenario allows installation of additional slices during downtime
- In addition servicing of EMC slices