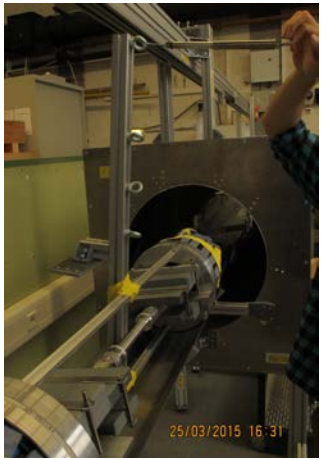
AIM

Status of Alternative Installation Method

19th International Workshop on DEPFET Detectors and Applications

VXD - torque test



Analysis:
lever arm: 0,70 m
force: 10 N
moment of torque M = 10 N x 0,70 m = **7 Nm**

Therefore the VXD was
simultaneously pushed and turned
for around 400mm and 15° !

Question: Will CFRP-covers be stable/stiff enough for
not “overtwisting” the VXD (including sensitive elements like
beampipe, PXD ladders, SVD ladders) ?

→ Therefore we will do another test with the original CFRP-covers!

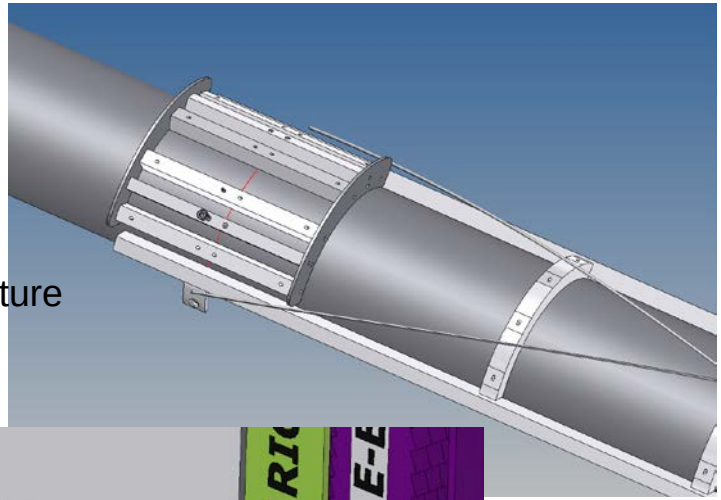
VXD - Installation-Rings

Design features:

- notches for sliding parts → MPI
- notches for EDI → DESY
- points for measurements → MPI
- ear-design (fwd-site) → DESY/KEK
- height adjustment bwd → KEK
- connection to Cable Trays → MPI
- connection to CDC → KEK
- connection to VXD-halves → KEK
- connection to cran → MPI

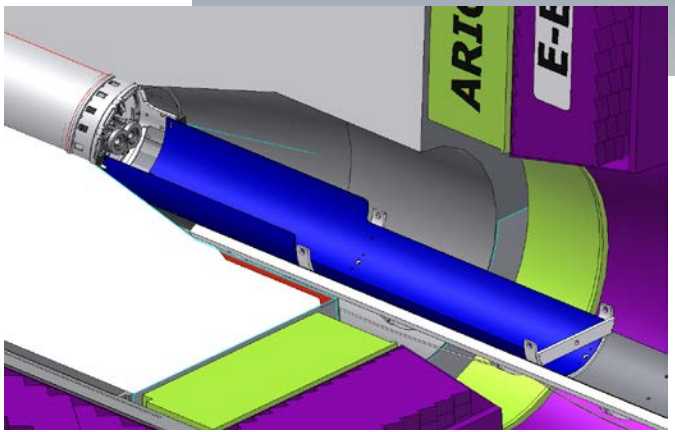
deadline for
final design is
B2GM in Oct. 2015

MT - Mounting tubes



Main points:

- shape accuracy of MT´s
  - same direction of sheet metal (1.5 mm) rolling-structure
  - same charge of sheet metal
  - modern CNC machine
- Stiffness of tubes
- Little steps between MT´s
- Guiding support for VXD/cable trays
- Connection to KEK machine



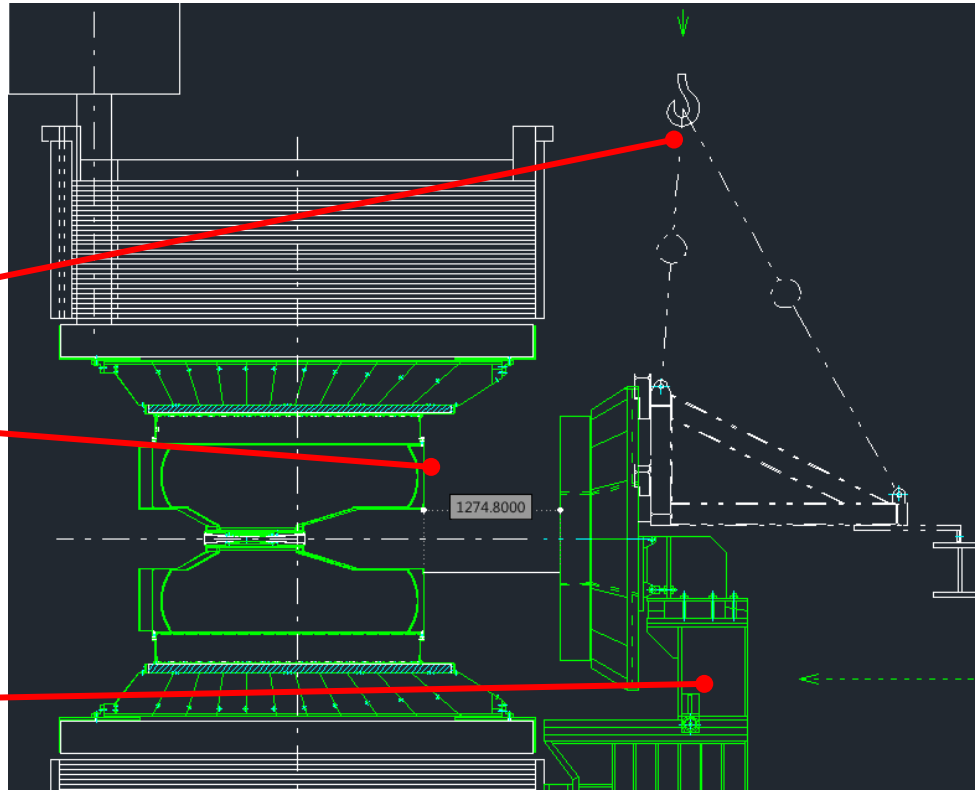
Installation devices

- assembly-devices:
  - device: Beampipe/heavy-metal mount!
  - device: SVD-ladder mount !
  - device: SVD halves grabbing tool !
  - device: PXD-ladder mount !
  - device: trolley transport device (B1 → balcony) !
  - **device: cran transport device (balcony → mounting tube) !**
  - **cran: Transport area / range of the cran?**
  - **3D-measurement-arm to check the centre**

Position of PID/ECL-Endcap

Position of PID/ECL-Endcap and

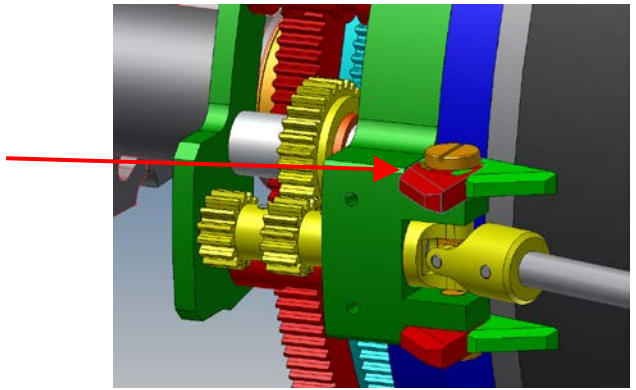
possibilty of movement during installation.



EDI

EDI - Emergency De-Installation Method:

- Last steps of deinstallation after VXD is extracted?
  → Support for extracted VXD-Unit!
- Integrated design of EDI-hooks in RVC
  → in progress by Karsten Gadow (DESY) !
- QCSR movement during extraction ?
  → tbd how exactly is reasonable



Part responsibilites

Part	responsible instiute	design person
VXD Installation Ring fwd	KEK	David Kittlinger
VXD Installation Ring bwd	KEK	Shuji Tanaka
Fixation VXD-CDC fwd	KEK	David Kittlinger
Fixation VXD-CDC bwd	KEK	Shuji Tanaka
Mounting Tube System	MPI	David Kittlinger
EDI Hooks	DESY	Carsten Gadow/David Kittlinger
Mounting Tube Extension Support System	KEK	Shuji Tanaka
Cable Trays	MPI	David Kittlinger
Crane System / Transport B1-Belle	KEK	Shuji Tanaka
Cable installation (Patch pannels to Dock Boxes)	MPI	Karlheinz Ackermann / David Kittlinger

Parts

- **spare parts** for final assembly in KEK !
- Integrate original-parts from **BIM-mock-up** for phase 2 !
- AIM-mock-up-parts were **redesigned** (new material & shape) for phase 2 !

AIM-mock-up

- AIM-mock-up is back in MPI Munich - fully built up !
- Who needs the mock-up in future for tests ? → contact me !

Outlook

- make mechanical tests with **CFRP-covers**
- find a final design for the **VXD-Installation-Ring (fwd)**
- develop an enhanced **mounting tube** and **cable tray** system
- integrate the new assembly groups in the **mock up** and test them for phase 2

Thank you for your attention !

Questions ?