

VXD activities @KEK (Mar. 2016)

- 3/ 8-10th CO2 transfer tube installation
- 11th AC 400V transformer delivery
- 16th Meeting@ MPI
- 17-18th VXD service meeting @MPI

Meetings on 16th @MPI (S. Tanaka with^{***})

- 1, 16th 9:00- VXD leader meeting (via Seevogh)
- 2, VXD installation (**David**)
 - Service work plan after VXD installation
 - Screw hole requests around CDC inner cone
 - Installation ring (x-y coordinate system)
 - Schedule until next B2GM
- 3, IBBelle (**Sven, Hans-Günther**)
 - Transportation, Certification, Service connection and so on
 - Schedule until Oct. B2GM
 - KEK visit plan in April (Just before GW)
 - (sub-meeting plan with Kimura, Kawai, Piping company, Nomura, Tsuboyama)
- 4, PXD mount block alignment (**Tscharlie**)
- 5, VXD issue and schedule (**Christian, Laci**)
 - B4 panel house?
 - VXD Service installation plan other than mechanics parts
 - MPI budget management (now we can use it!)

Update status of cooling

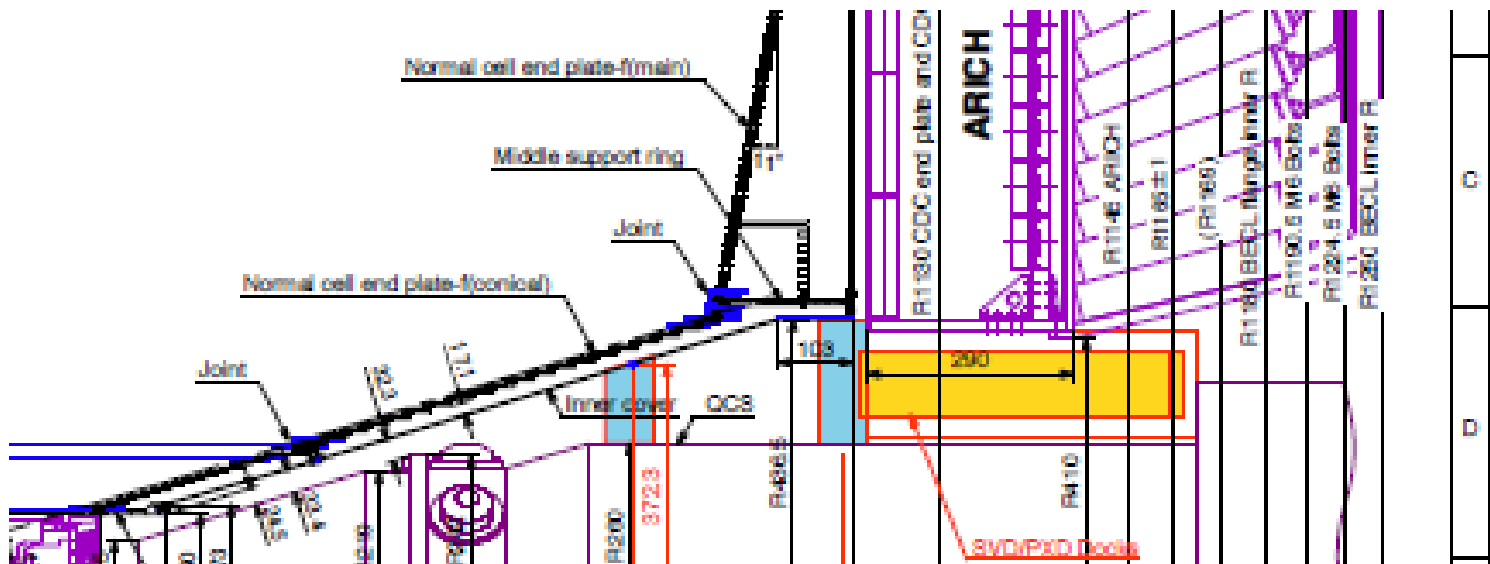
- Area for IBBelle has cleared.
- CO2 transfer tube has installed (Black pipe)



VXD service meeting (17-18th)

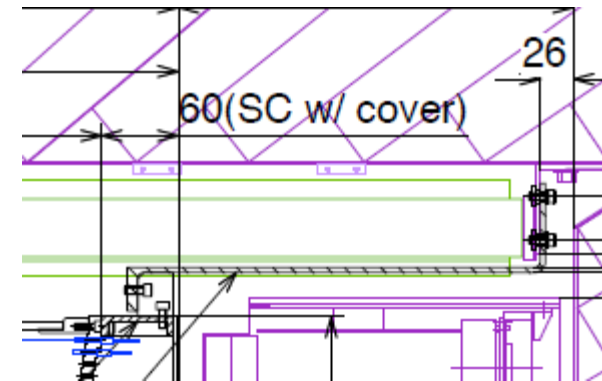
Service design around VXD Docks+ some installation tests

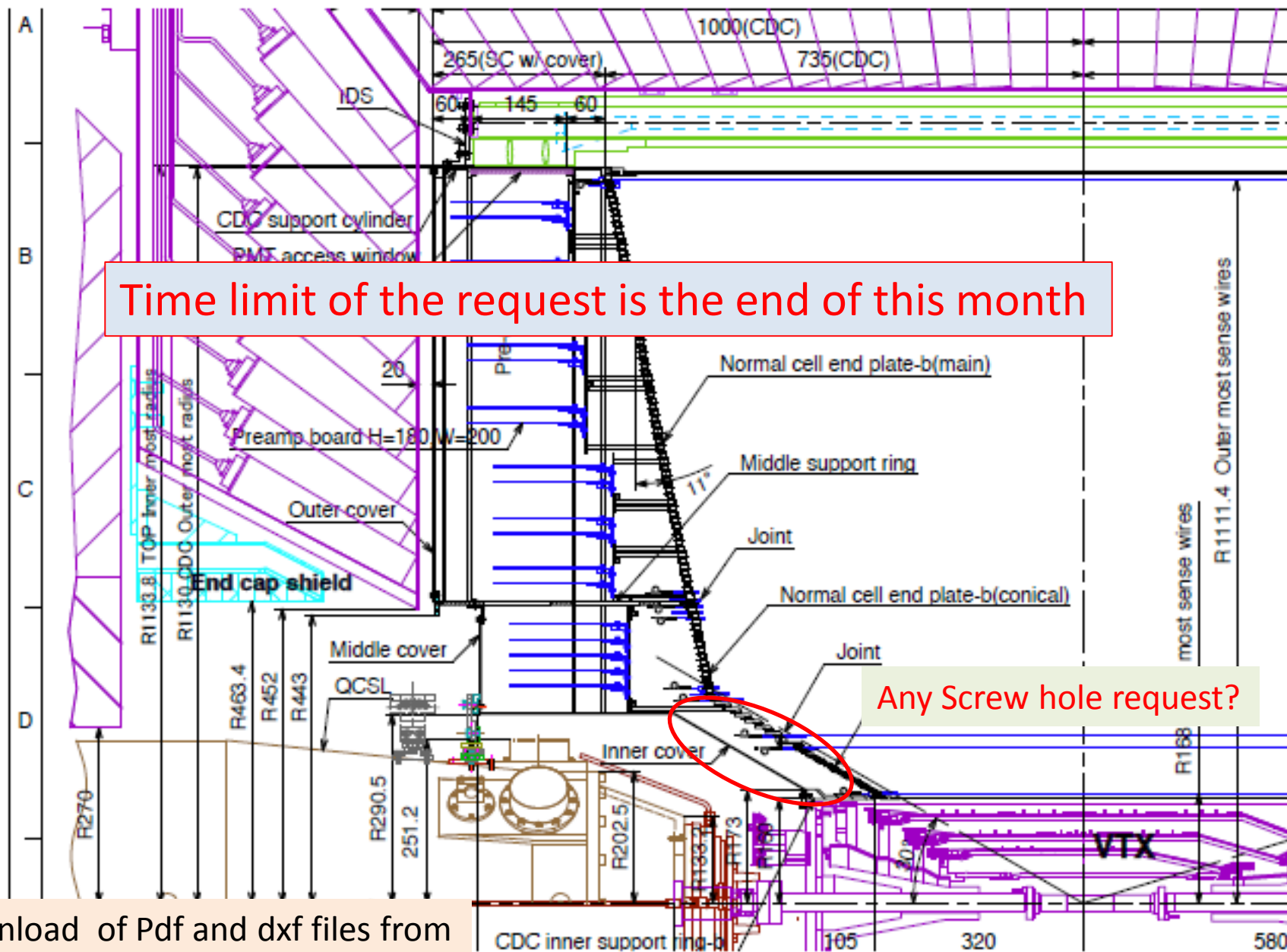
- VXD service support cage idea (from VXD table until installation)
- Service space control Between VXD and QCS by support cage
 - Service work scenario after VXD installation (David?)
 - Design of cage inside of CDC inner-support (David?)
 - Dock ring, VXD Dock installation timing (common discussion)
 - Wall for warm dry volume (by whom?)
- Brackets idea of CO2 piping (Dock area, Chicane area)



VXD service installation

- Bracket design
 - From ECL to KLM
 - There are screws for connecting brackets. Adachi-san and I will prepare some standard bracket design.
 - IDS
 - 3 points of M4 screws (64 splits in phi)
 - CDC side plate
 - See next slides



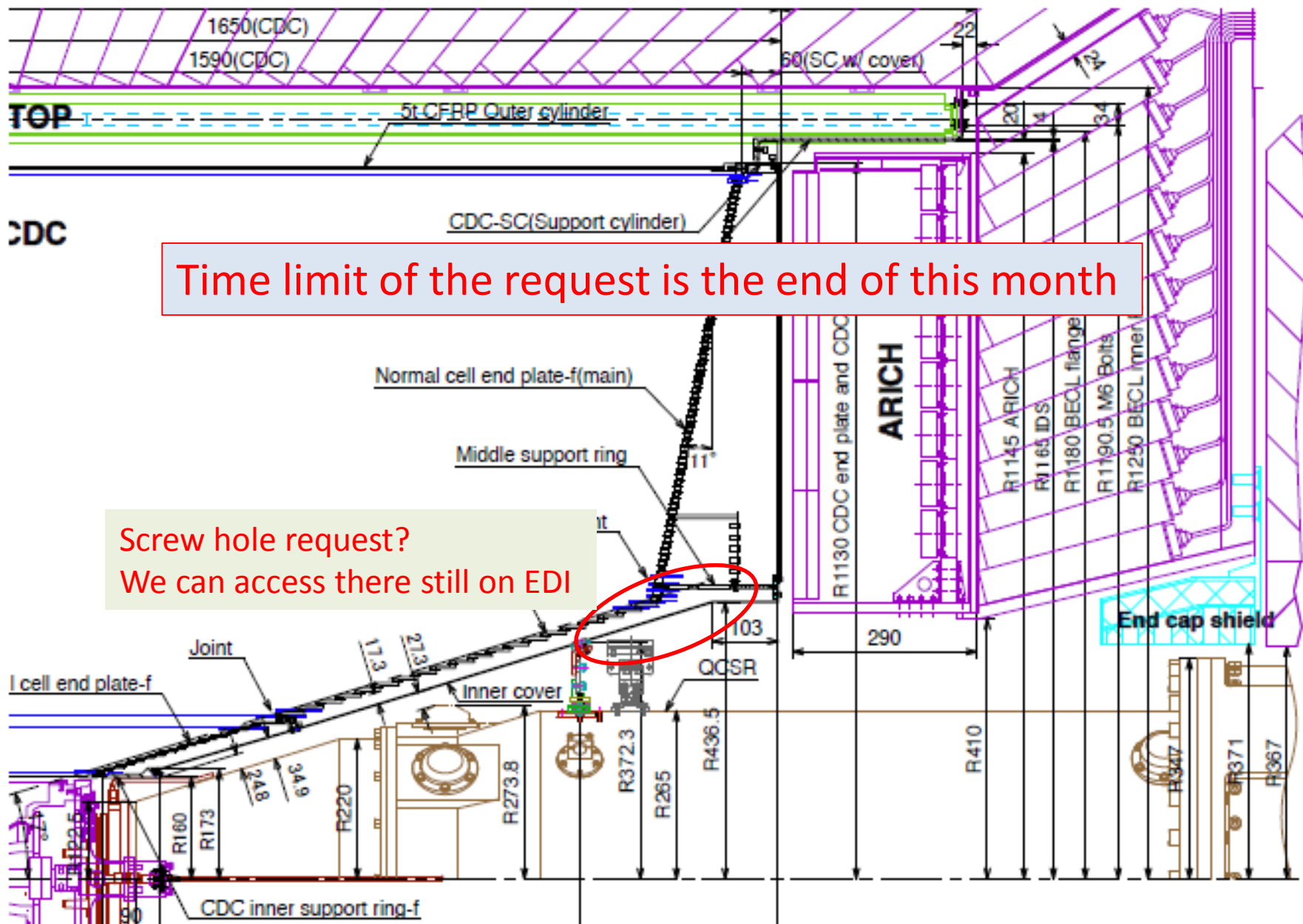


Time limit of the request is the end of this month

Any Screw hole request?

Download of Pdf and dxf files from

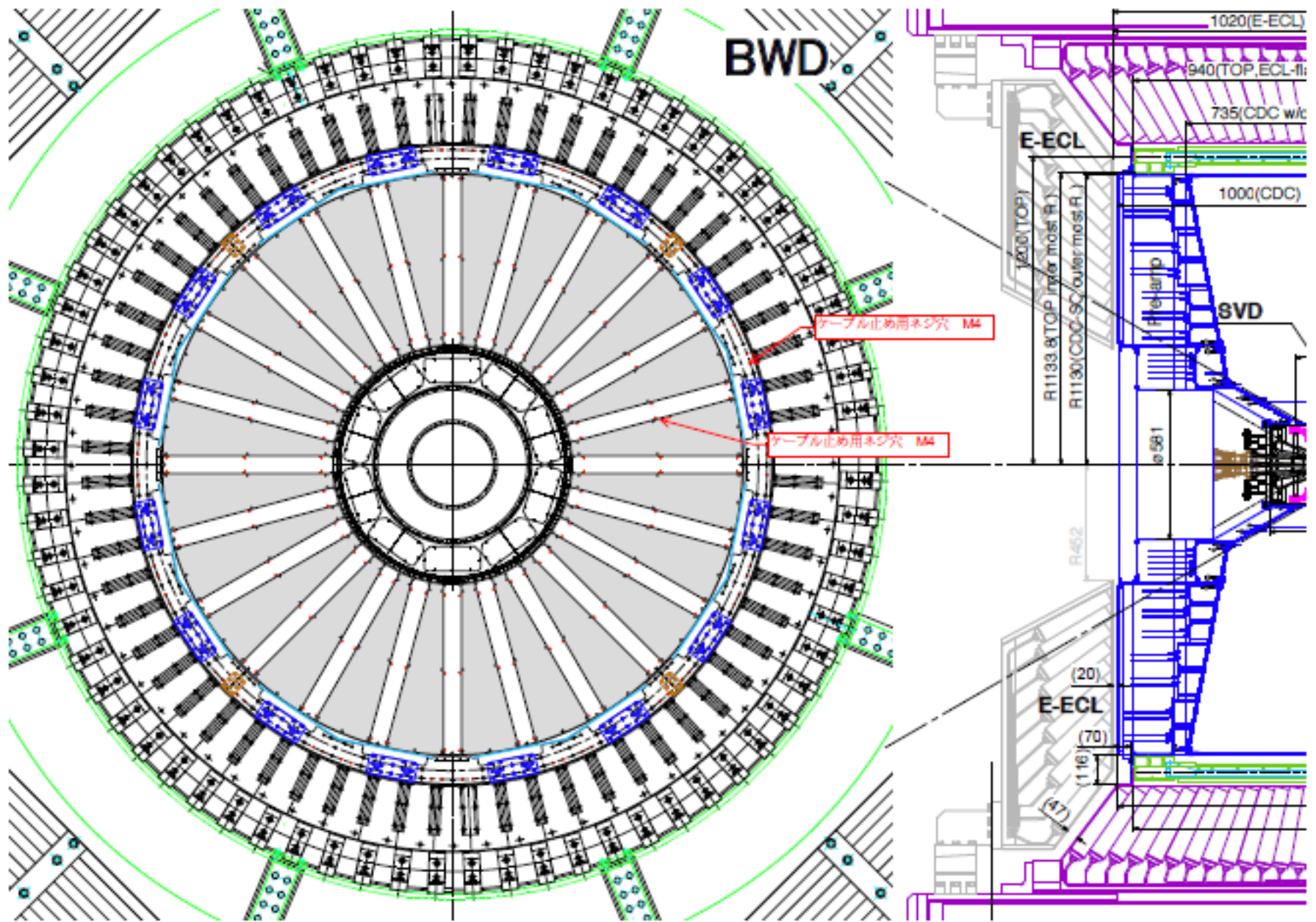
<https://kds.kek.jp/indico/event/21009/>



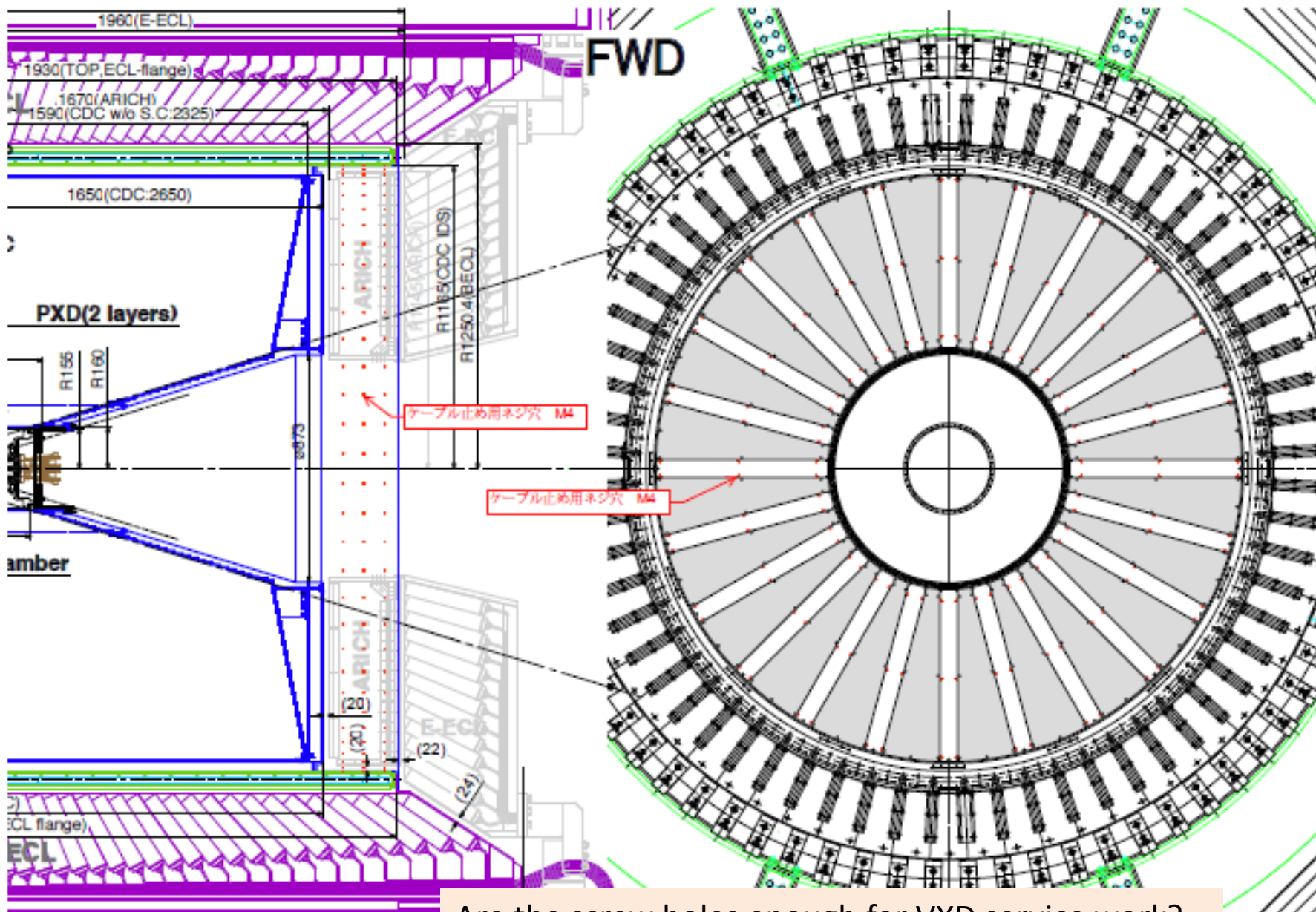
Time limit of the request is the end of this month

Screw hole request?
We can access there still on EDI





The screw holes are enough for VXD service work?



Information and issues

Machine tools at KEK

Use of tools in KEK machine center seems very difficult, BUT
I found a candidate room which equip

- 1, a lathe,
- 2, drilling machine,
- 3, shearing machine (hand - powered) and
- 4, band saws

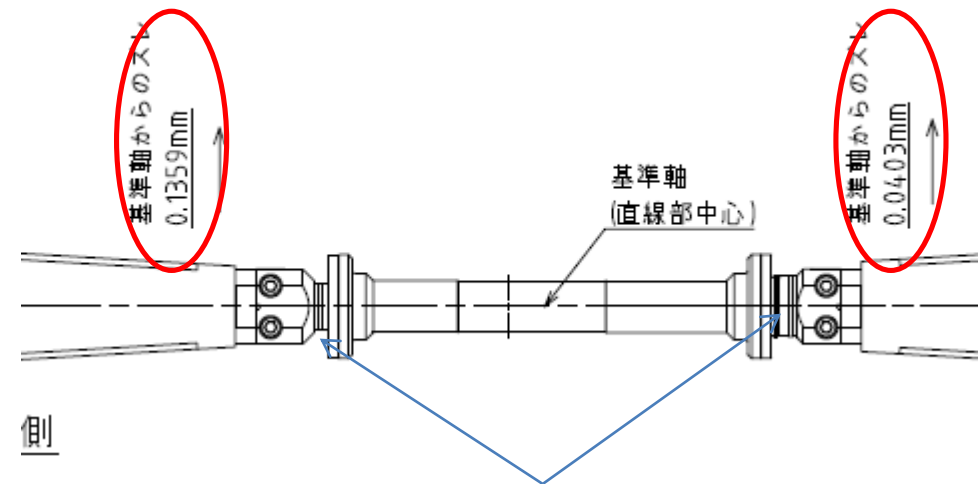
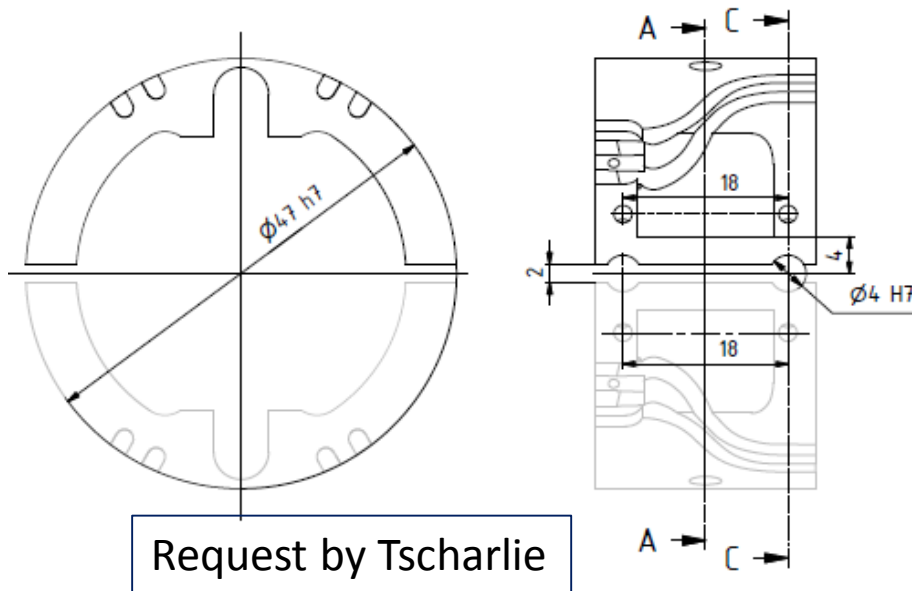
Those tool will be useful on
Installation work

The location is just in in front of KEKB machine
control building (3~4 minutes from 3 Go-kan by walk).



PXD mount block

- Quotation
 - ~700k Yen (3 months)
 - Production is next JFY
 - At first, SUS mock production
- h7 tolerance is quite hard request to us (not a material production itself)



The result on Ta-Ta EBW connection test
In last week

Please understand how challenge work to control mount block position
(~100um shift has observed on test connection)

Question from M.Ritzert

- **Is the routing of these cables already well defined?** We will obviously also have to run cables from the (top of the) detector and IBelle to E-Hut for SC purposes. Given above schedule and the arrival time of IBelle, it is quite possible that SC will be first to lay cables in the stretch from the IBelle junction box to the servers in the E-Hut.

If the cables from the dock areas pass near the junction box, it seems logical to me to run all cables together from there, and we should coordinate.

During the last B2GM, I inspected the E-Hut 1F location for our racks, and **I couldn't see any connections for power or network. Has this already been discussed?**

Who is responsible person?

Mechanics projects are well defined, but VXD service installation is not....

Space around Dock and QCS

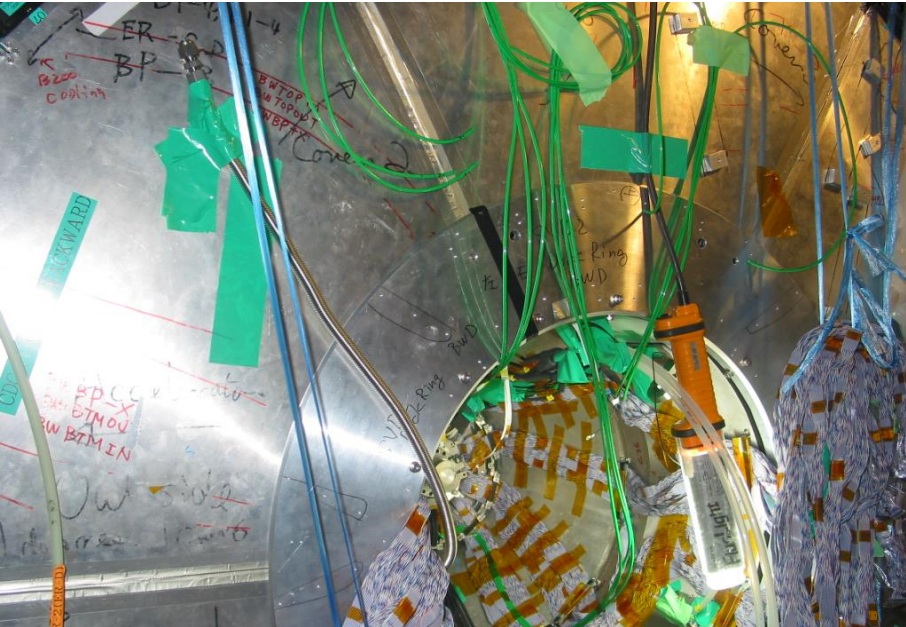
S. Tanaka for the VXD mechanics group

(Reference slides from last B2GM)

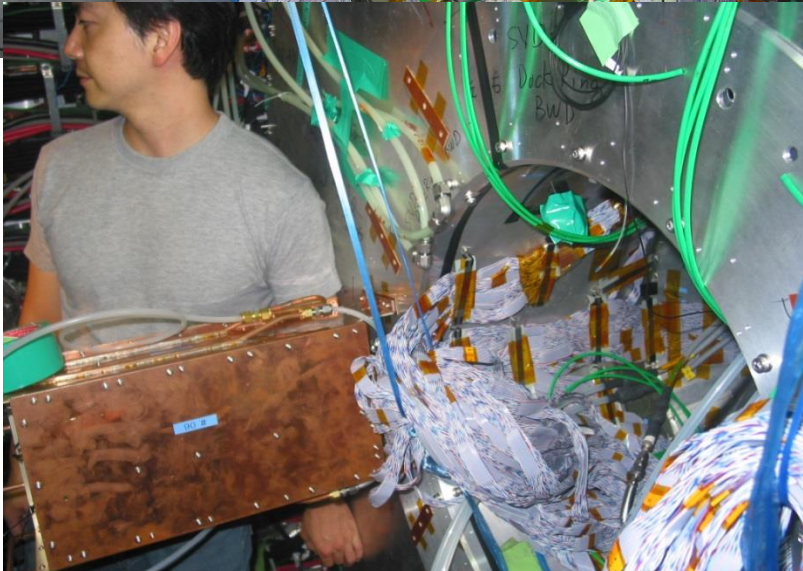
Situation

- Service design around VXD dock area is not finished yet
- Input for this design
 - Mechanical design (finalized)
 - Service space at ECL cable slot is almost defined
 - VXD service full list has prepared
 - CO2 pipe length should be the same and with shorter path to manifold
 - 18m dia. of CO2 pipe don't allow overlapping with any other services
- The Key component
 - PXD docks(by MPI)
 - SVD docks(by HEPHY)
 - CO2 dock(by MPI)
 - Dock half rings (Connecting Docks with CDC) (MPI)
 - Cables
 - Pipes
 - Material to make warm dry volume (EPDM: tentatively)
- The validation by service installation test is not done.

Cabling around dock area: reference



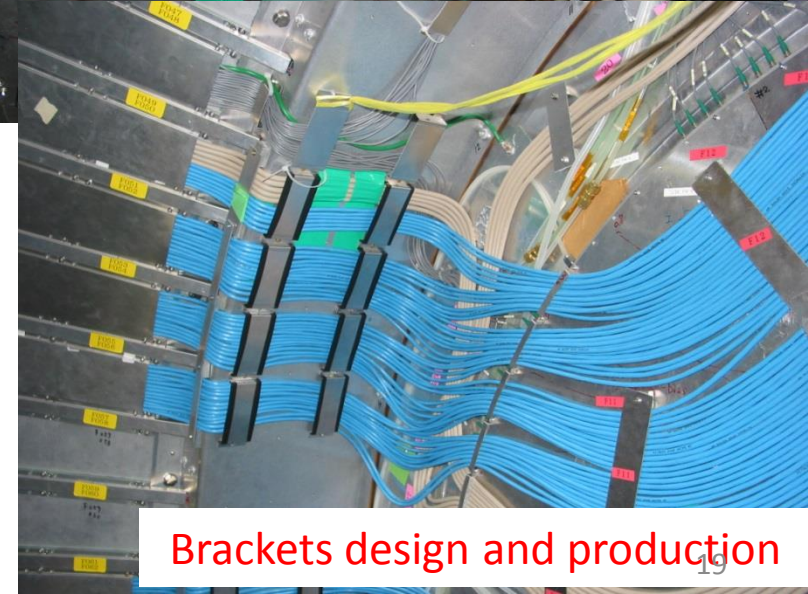
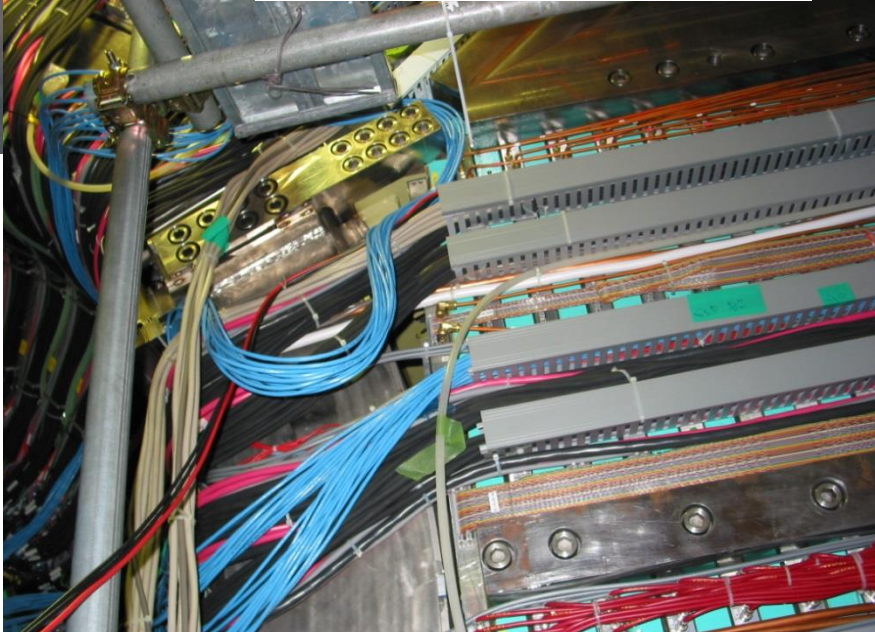
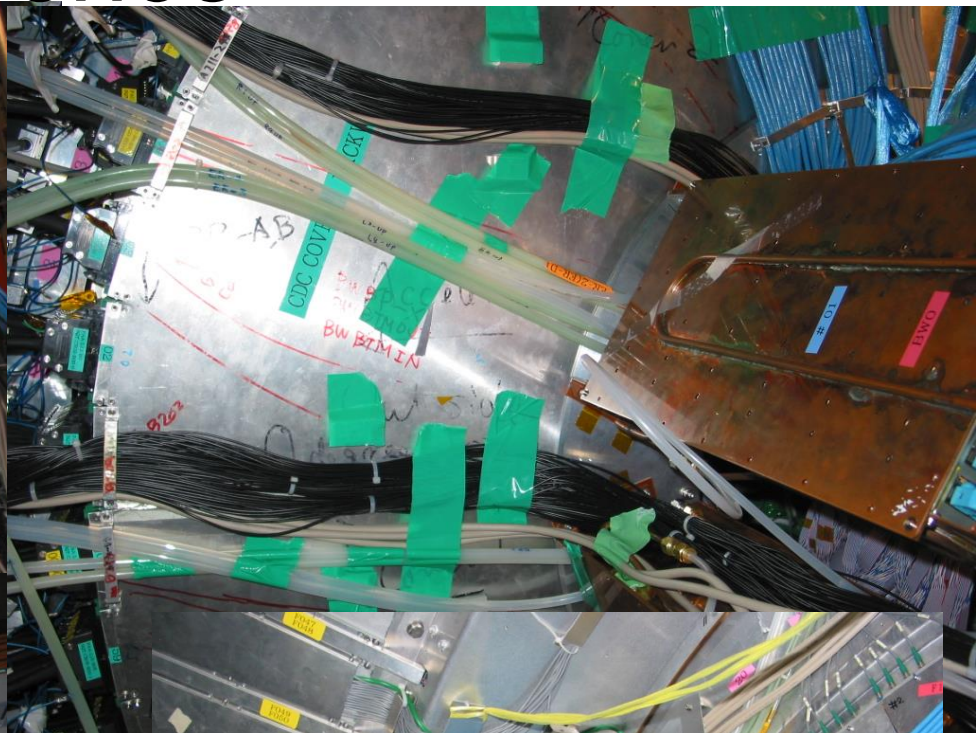
Dock support plate



Cabling around dock area: reference



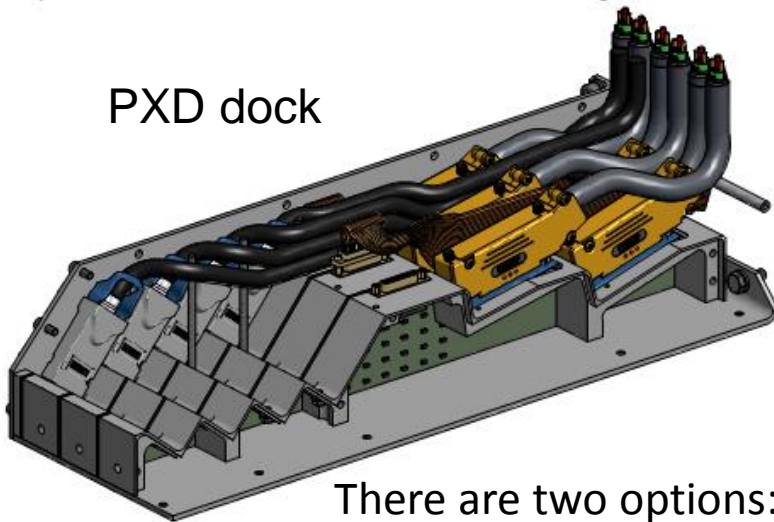
Need to verify cable space



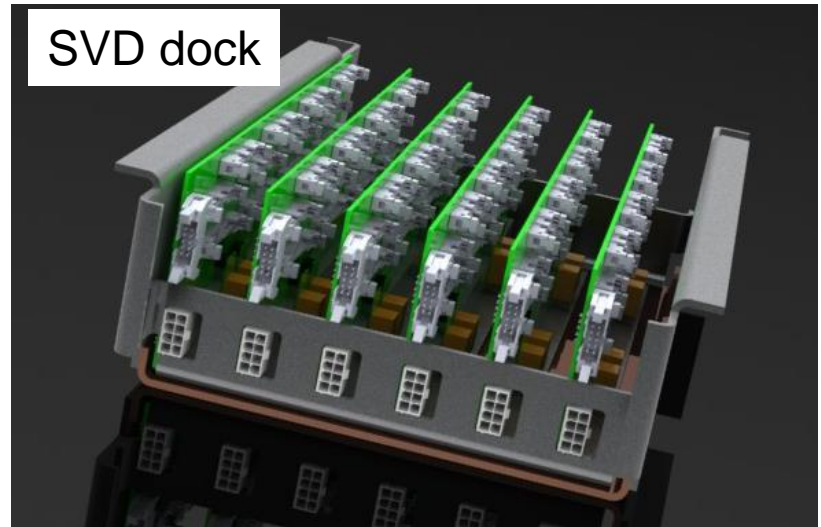
Brackets design and production

PXD and SVD docks

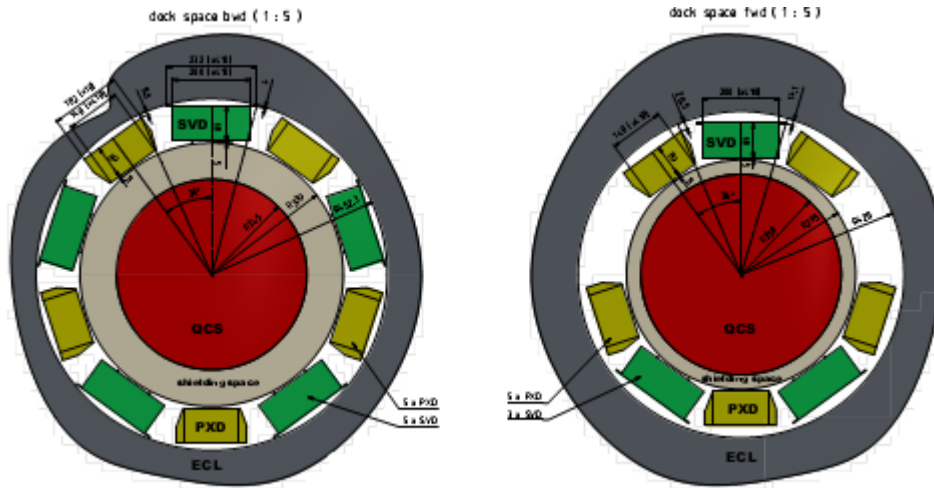
PXD dock



SVD dock



There are two options:
Metal cable or optical fiber



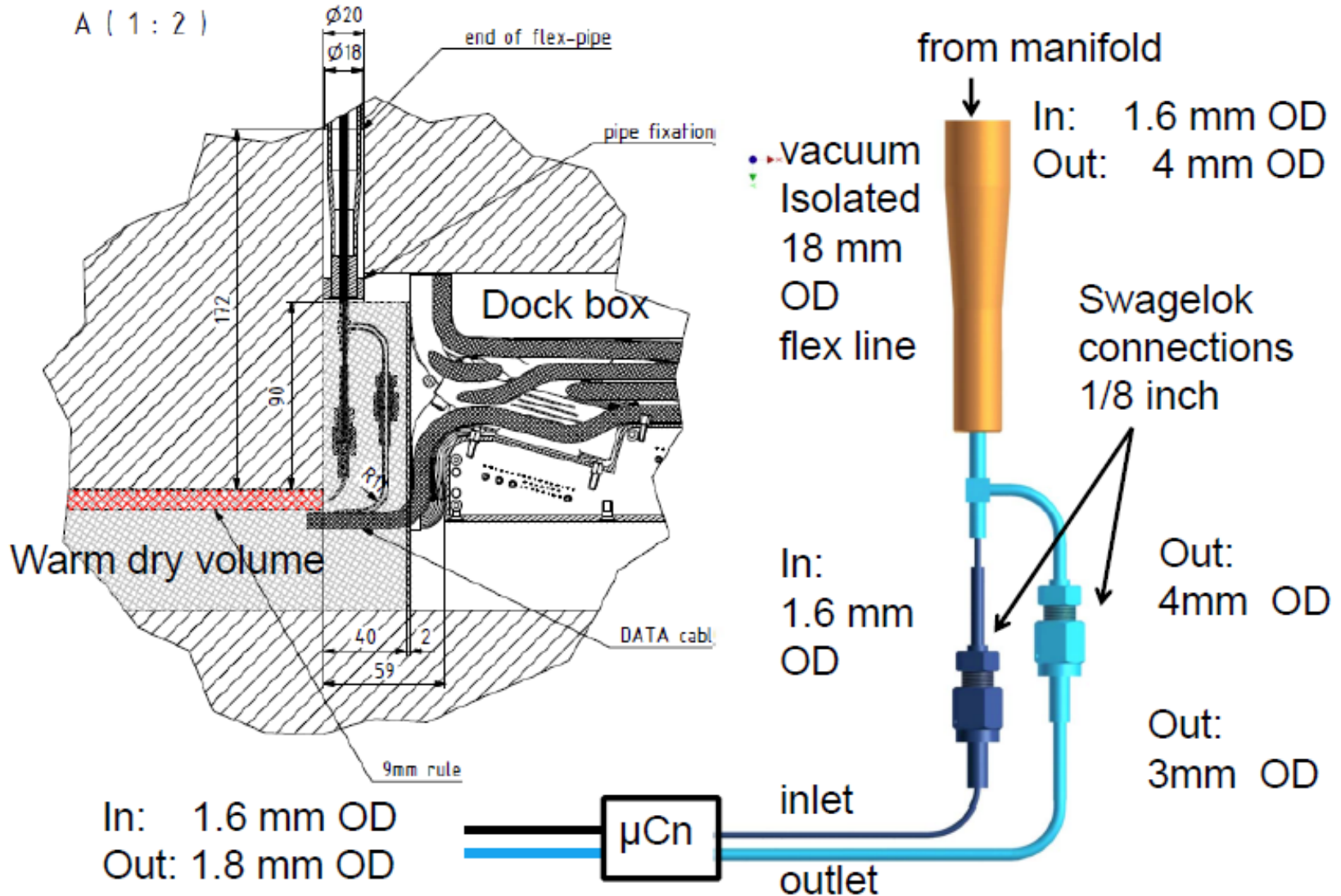
Design in Two years ago



Dock ring: Belle case

the design is not final

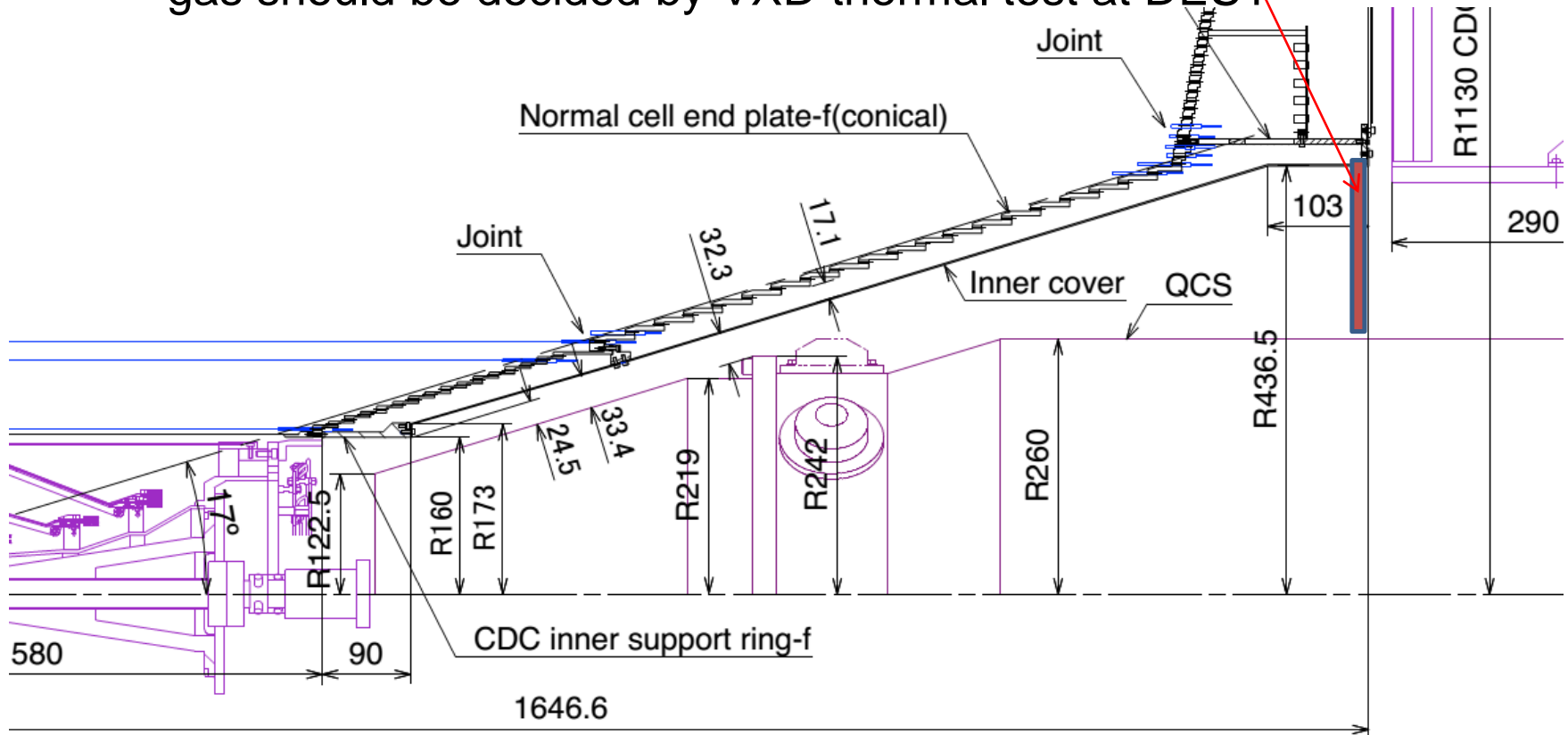
CO2 pipe connection at Dock area



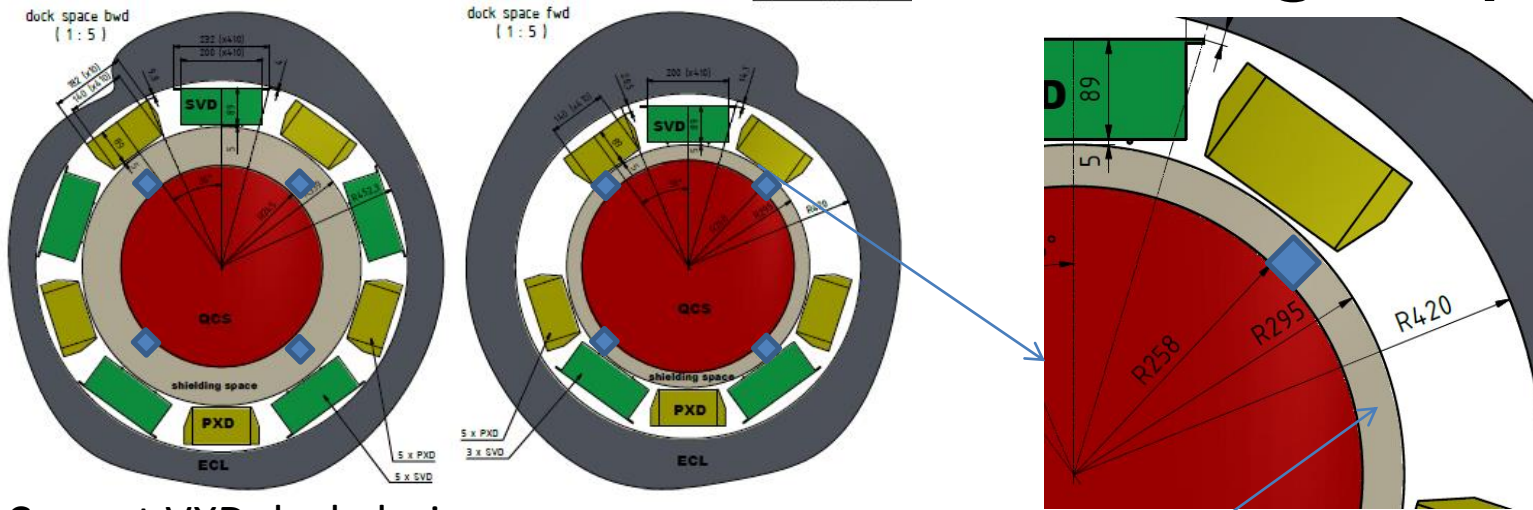
Dry volume in the box is necessary

VXD environmental control

- In order to make warm dry volume, EPDM foam is adopted between QCS and CDC
- In this volume, Nitrogen gas (0.6MPa from cryogenics group) is filled to avoid condensation by cold CO₂ line. The flow rate of Nitrogen gas should be decided by VXD thermal test at DESY



Discussion with machine group



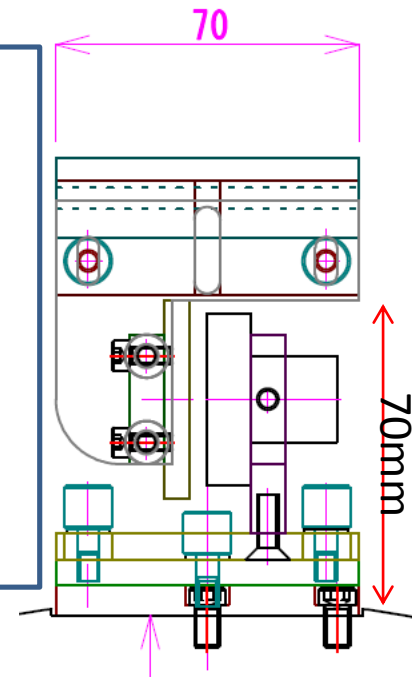
Current VXD dock design
 (4 PXD -> 3 PXD, 1 CO2)

Current agreement between machine group and Belle group

1, Machine group should try to reduce height of gap sensor from 70mm to 35mm.

2, VXD group have to keep 35mm (50mm width) of open space between QCS and VXD services

Radius of QCS has increased from 258 to 265mm



Partial cabling test on CDC wall

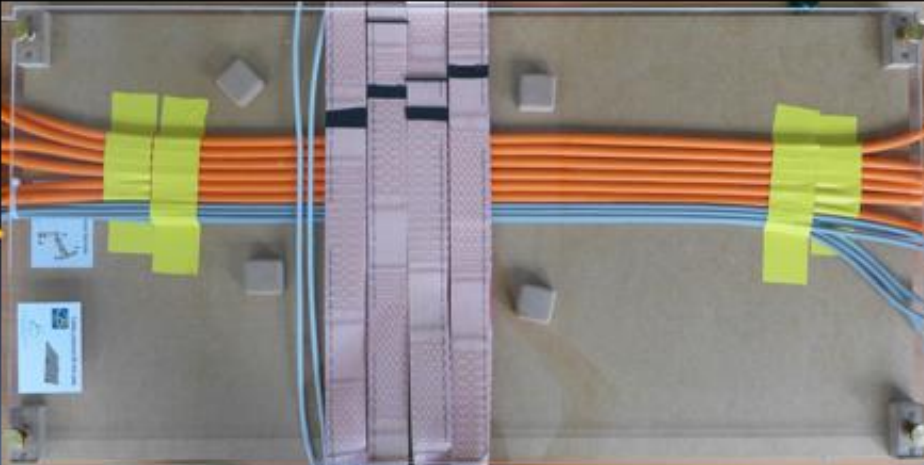
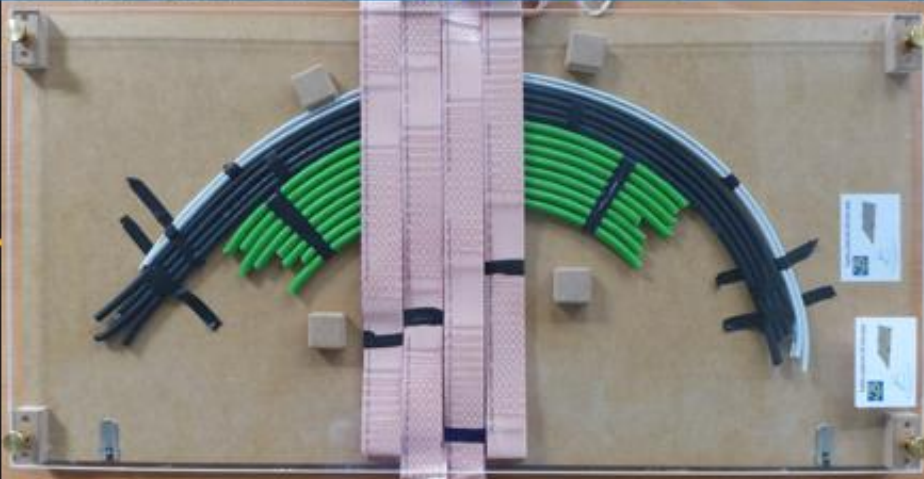
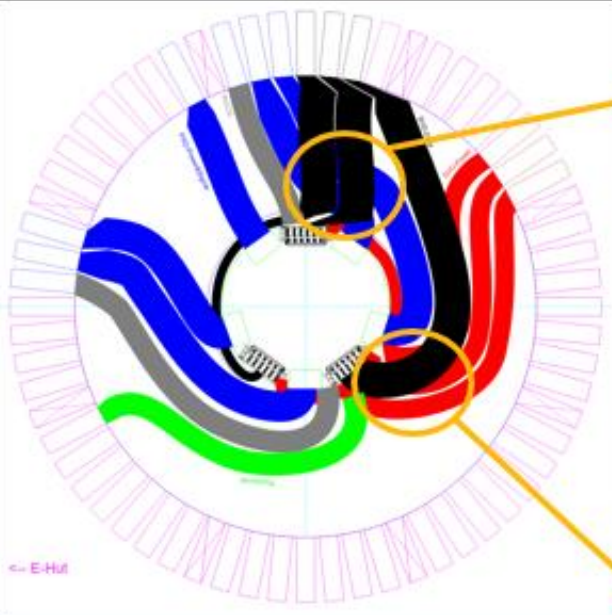
HEPHY Institute of High Energy Physics

OAW Austrian Academy of Sciences

Belle II

SVD

Mockup Crossings



- Fits in the 19.2 mm gap of the mockup

M.Friedl: SVD Cables

8 September 2015

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Status and plan

- Some parts design are exist, however those are not covered as a whole service design (i.e. how to achieve warm dry volume).
 - Only the validation of partial cabling is done
- In the point of view on schedule, this issue is still not critical situation, but we have to check the feasibility of our service work in advanced
- Main issue is that the key players are quite busy by other subjects
 - Tscharlie (MPI): PXD ladder , PXD assembly(still conceptual)
 - Florian, Markus(HEPHY): CO2 open system for ladder mount table
 - Kohriki(KEK): CDC(also installation), TOP, VXD
 - About this service issue, SVD, PXD service is dominated
- Plan
 - We recognized that parallel work is not efficient to prepare integrated VXD service design (VXD common issue)
 - Dedicated meeting (2-3 days) only discussing(also partial test by mockup) about this issue on early this March.