

Discussion items

SVD mechanics session

Discussion (Tanaka)

There are two important milestones:

1, VXD mechanics mock-up production(end of this year)

2, SVD ladder mounting (starting the end of next year)

Then I asked Tsuboyama-san to set more detail schedule
(also time of no return).

i.e (including my questions, but some items may already be solved)

A, when the design and production of mounting table should be finalized?

B, Ladder mount test for each layer (+ thermal stress test?) should be finished before mock-up production

C, Cooling test of hybrid with endring(+CO2 system?)

How to manage to thermal connection between hybrid and endring?

D, Until when, we should solve the interference between SVD(3rd) and PXD, or SVD(3) and SVD(4)

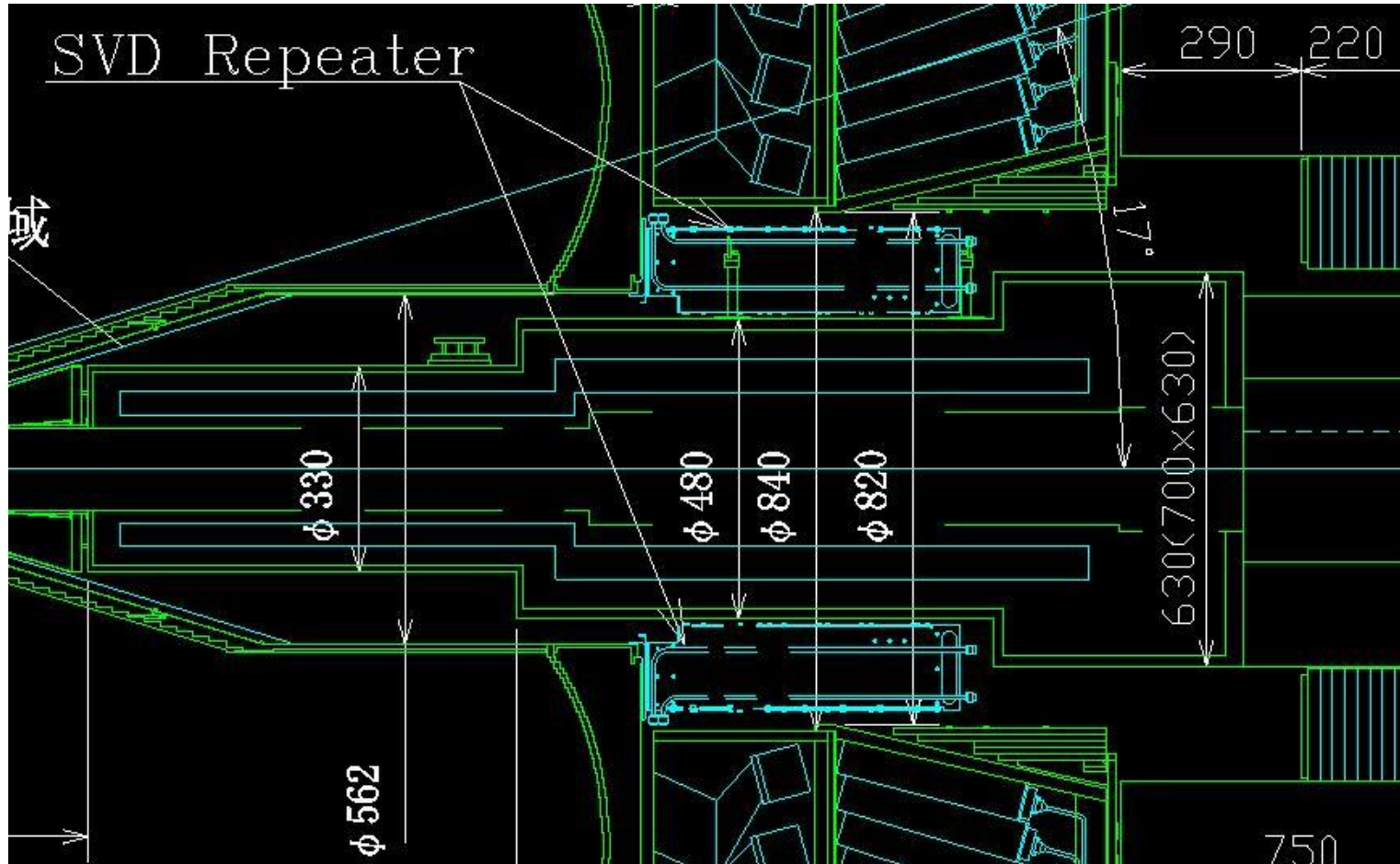
etc.

SVD Milestone(Tsuboyama)

A	B	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Item	Calendar Year (I:Jan-Mar, II:Apr-Jun, III:Jul-Sept. IV:Oct-Dec.)	09	2010				2011				2012					
	Critical paths are shown in red	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Last Update: 26 Jan. 2012																
Milestones (as of 6 Feb. 2012)																
Mechanics	Test of 2nd prototype trapezoidal sensor (April-July 2012)	Vienna														
	L3 DSSD: design (-April 2012) Production (July 2012-) Delivery (March 2013)															
	Full ladder assembly jig (design:Jan-March, Test: April-July 2012)	Tokyo														
	Test of ladder structure and support scheme (April-July 2012)	KEK/Tokyo/Vienna														
	Test of CFRP cone using Aluminumn (April-August 2012)	KEK/Vienna														
	Cooling test of ladder, support, cover temp monitor (April-July 2012)	Vienna/Krakow/IFCA														
	R&D of Cooling pipe and thermal contact (June 2012-)	Vienna/Krakow/IFCA														
	Design of ladder structure and support (July-Sept. 2012)	Vienna														
	Ladder mount bench (Design: July-Sept., Assemble: Sept-Dec. 2012)	KEK														
	Verification of IR structure against beam pipe weight. (April-Sept. 2012)	KEK														
	SVD mockup parts production (Sept.-Dec. 2012)	KEK														
	Building IR mockup includeing SVD (-March 2013)	KEK/Vienna														

- Many subjects seem to be jammed on second quarter of 2012
- To encourage those study effectively, man power should be concentrated in one or two places to discuss in detail.

SVD/PXD dock position

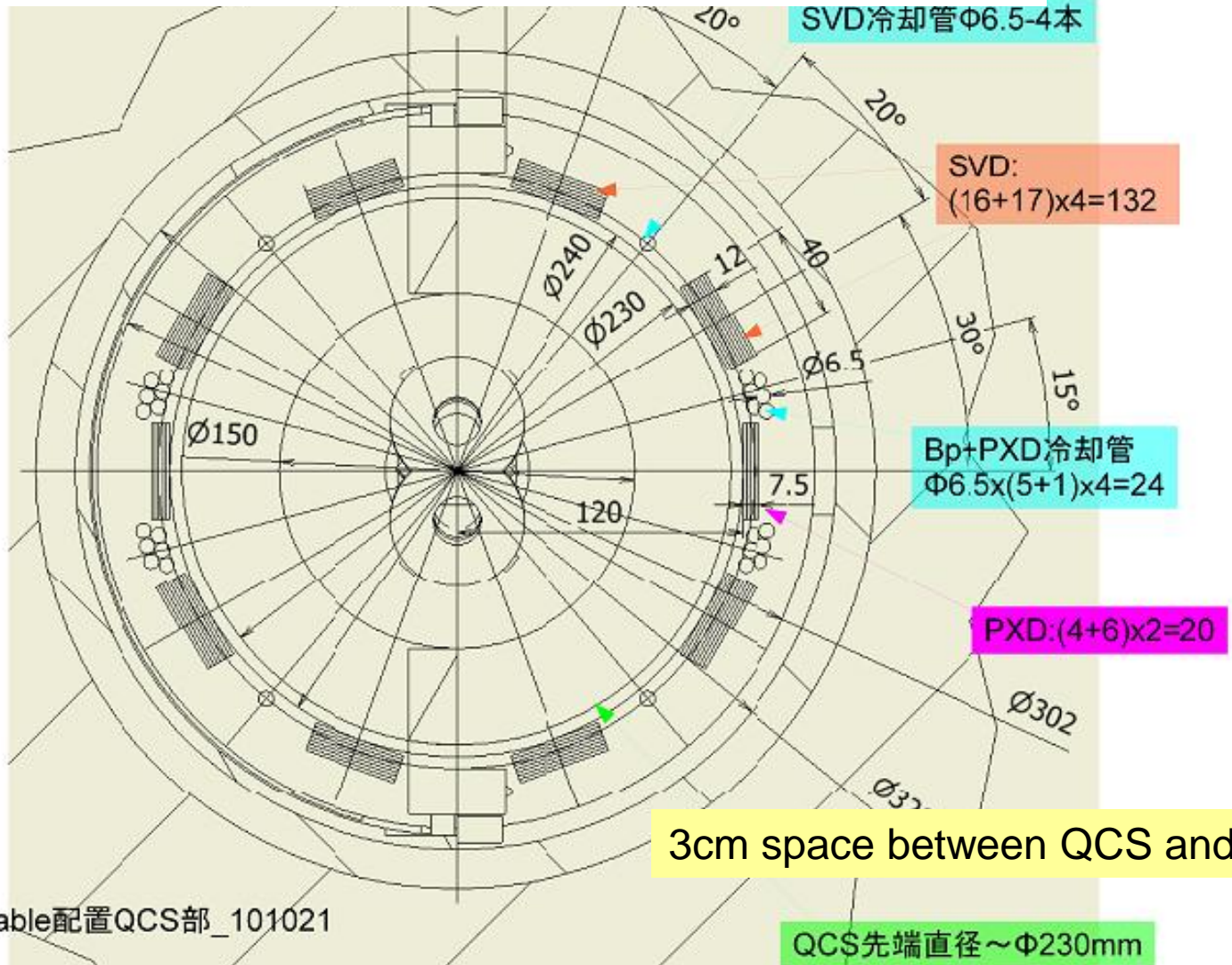


- Please prepare the space request for Dock (SVD and PXD for each).
 - Also list of cables connectors with dimension for inlet and outlet
- On next B2GM well discuss about space allocation.

Service space allocation on QC cryostat

Please prepare the list of cables and piping until next B2GM

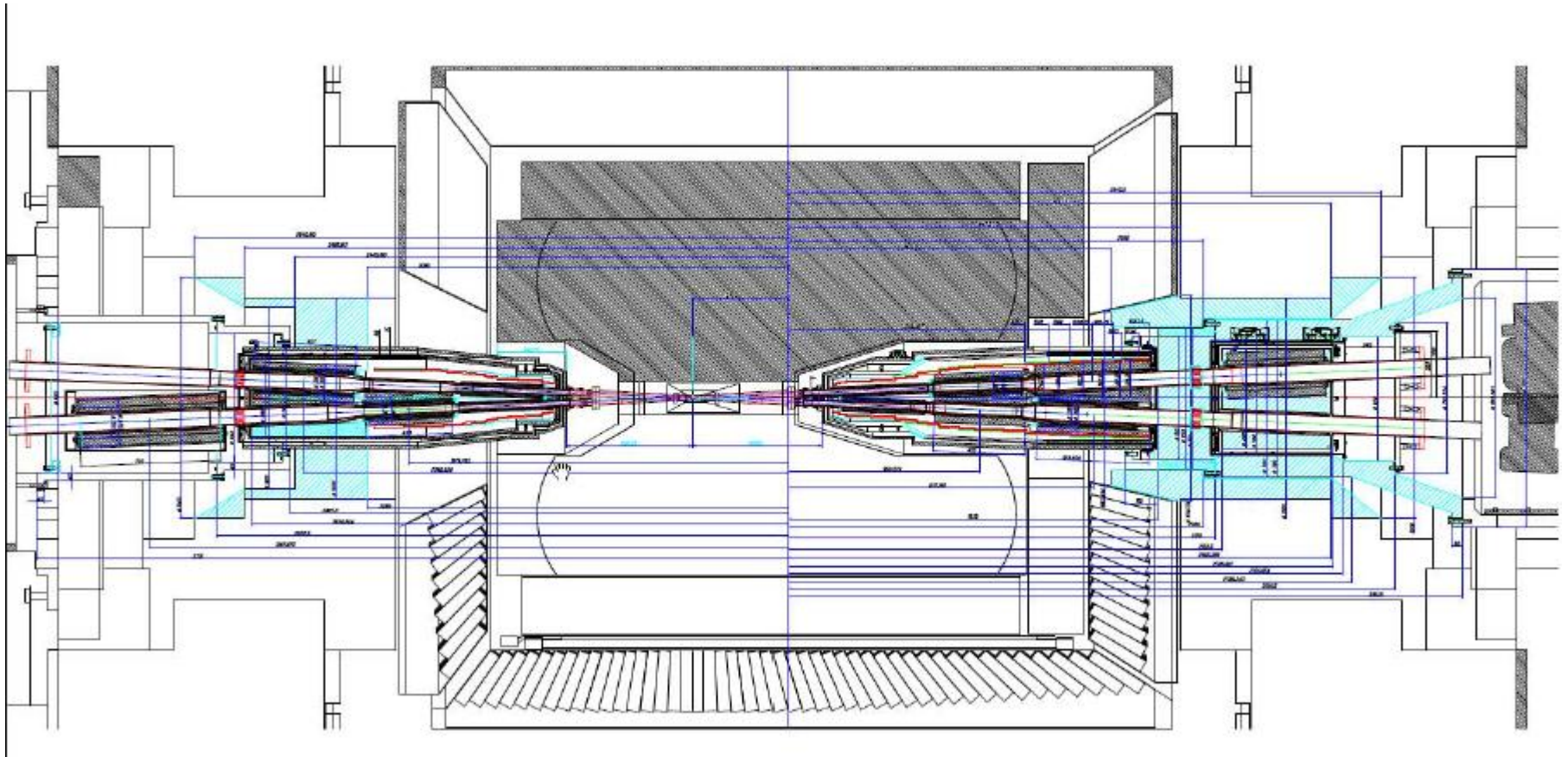
Please bring some candidate material if you have



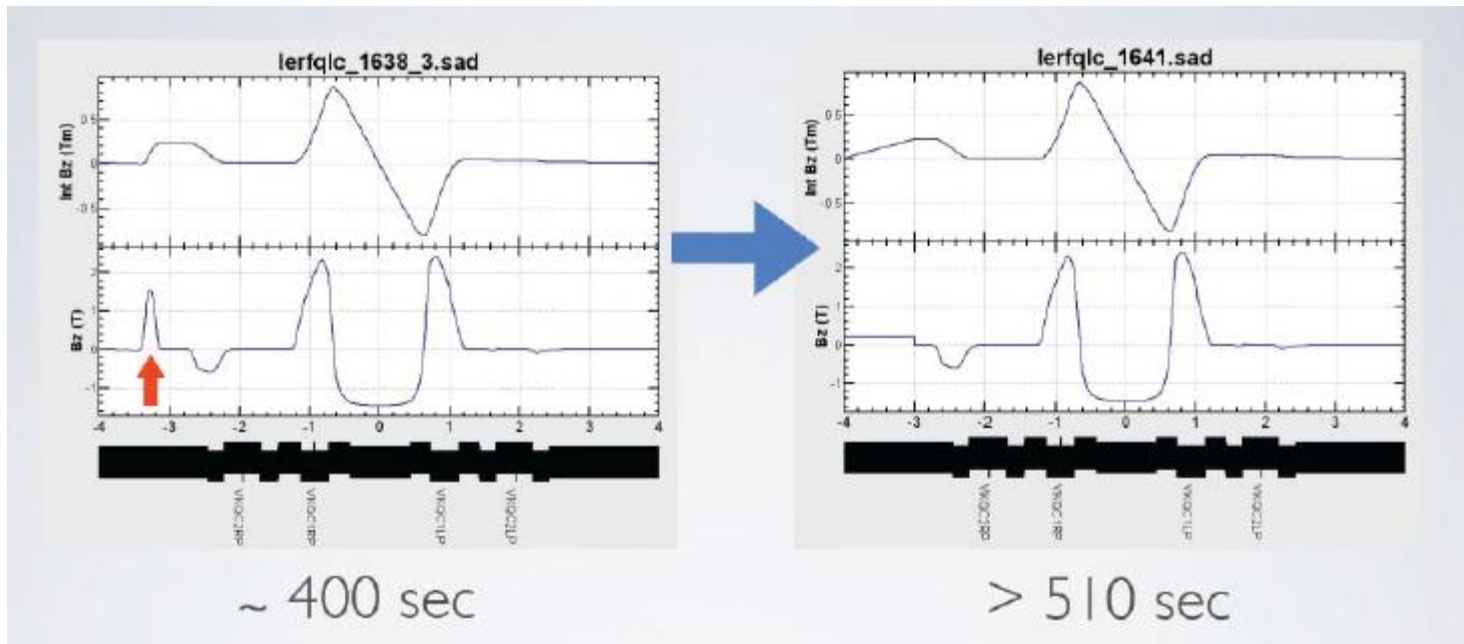
Space requirement from QCS

- Ouchi-san (QCS group leader) propose to put iron shield between QCS and Belle structure (Blue region)

PXD/SVD dock space seems to be still free for this requirement



The impact on beam lifetime



- With 3D magnetic field calculation, we realized the bump (red arrow) of Bz causes shorter Touscheck lifetime.
- In order to reduce this effect, the space between QCS cryostat and Belle structure should be fulfilled by iron structure.

- We have to summarize the space requirement of cables and piping which placed along QCS structure(blue region) **before this end of March**, because QCS design have to freeze before starting production.
 - I want to discuss on next SVD/PXD meeting about this subject ,after then we will make a report of space requirement at next B2GM.
- Of course, we require that Endcap structure can move to maintenance position easily.
- **Now KEKB group changed their policy not to fill iron because of huge electromagnetic power on QCS quench(60tons). (Optics group can manage to control without iron**
- **Whatever we should update our list for services.**

Conflict region(koike+tsuboyama)

- The structure is cut at the center and a projection is made.
 - Hatched region is the cut surface.

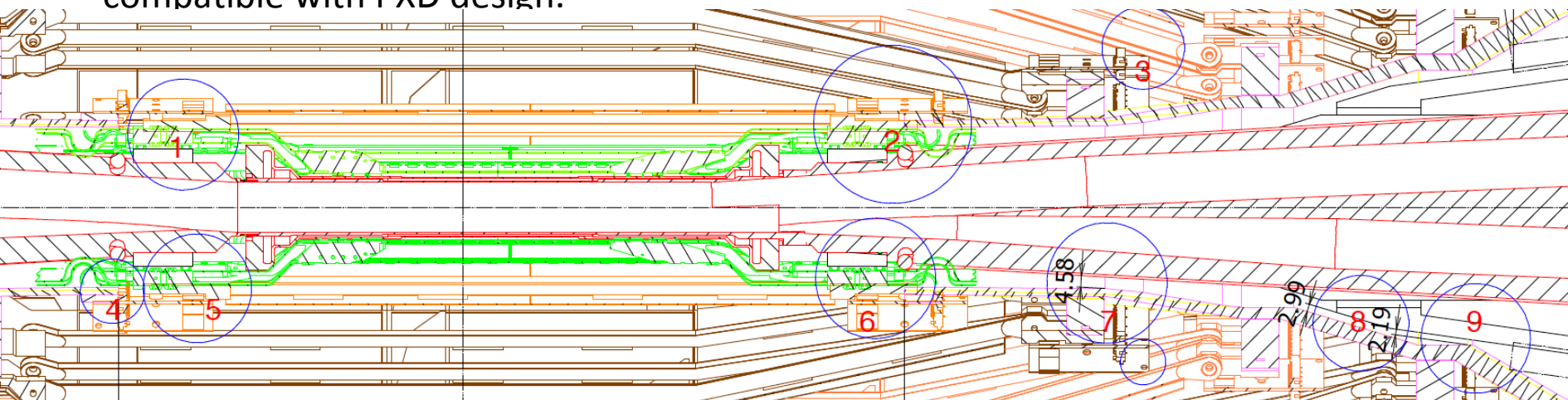
How to optimize design?

- Rib shape, connectors and Hybrid size, cooling and their contact
- (need more discussion or more test or only design problem !?)
- Why don't to create task force?
-

I'm worry that there is no chance to discuss with SVD group about those problem without B2GM.

snape is optimized or not.)

- 7-9: The CFRP shape has been changed. The previous shape (shown in yellow) was compatible with PXD design.



Discussion (Tsuboyama)

- The border between SVD and PXD should be defined immediately. Otherwise the shapes of CFRP cone, support rings can not be designed.
 - Done in next week, when PXD and SVD designers meet face to face in Vienna.
 - More discussion with PXD and SVD will be very helpful to remove interference.
- The STEP file shows 8 ladders in L3 and there are interferences. It is not clear “8 ladders in L3” is proposed or not.
- It looks the Z position is defined in the backward support ring and mount block. However, it is not clear where/how the origin of ladders are defined.
- Before we proceed the detail design, the mock-up of the ladder, the mount block, the support ring should be made quickly. The installation procedure should be also prepared and verified with mock-up.
 - If the ladder can be hold by the support ring.
 - If the heat from APV25 can be removed as expected.
 - If the ladder mount can be done with reasonable efforts and time.
 - If the sliding mechanism absorbs the effect of thermal expansion.
 - If the 6-story connector block can be handled in ladder assembly and ladder mount.
- Milestones of the these test should be determined in Vienna. c