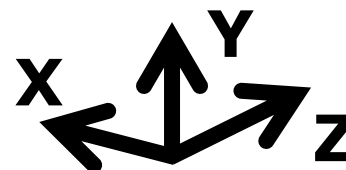
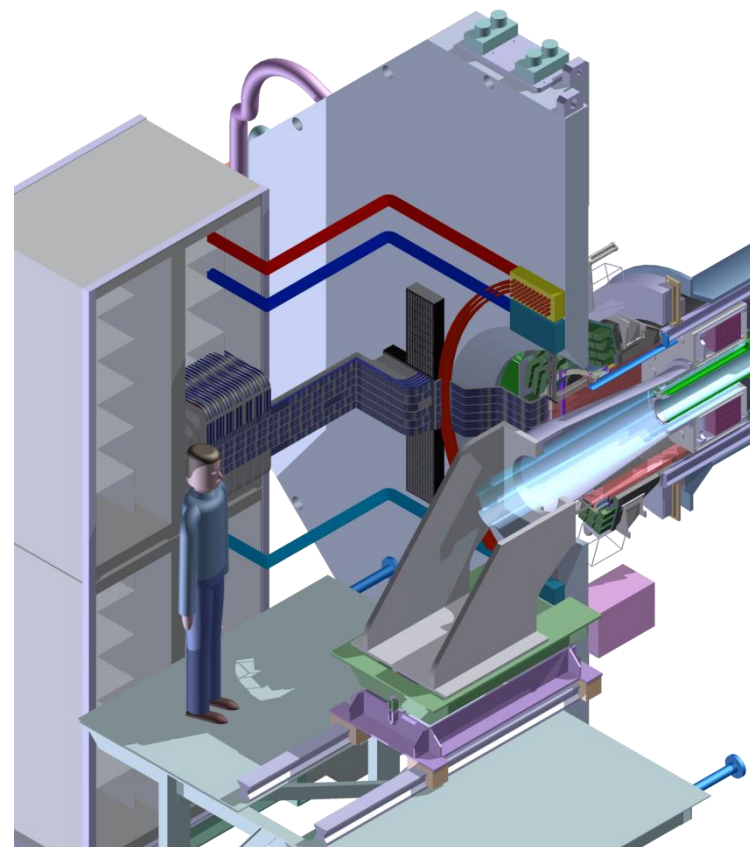
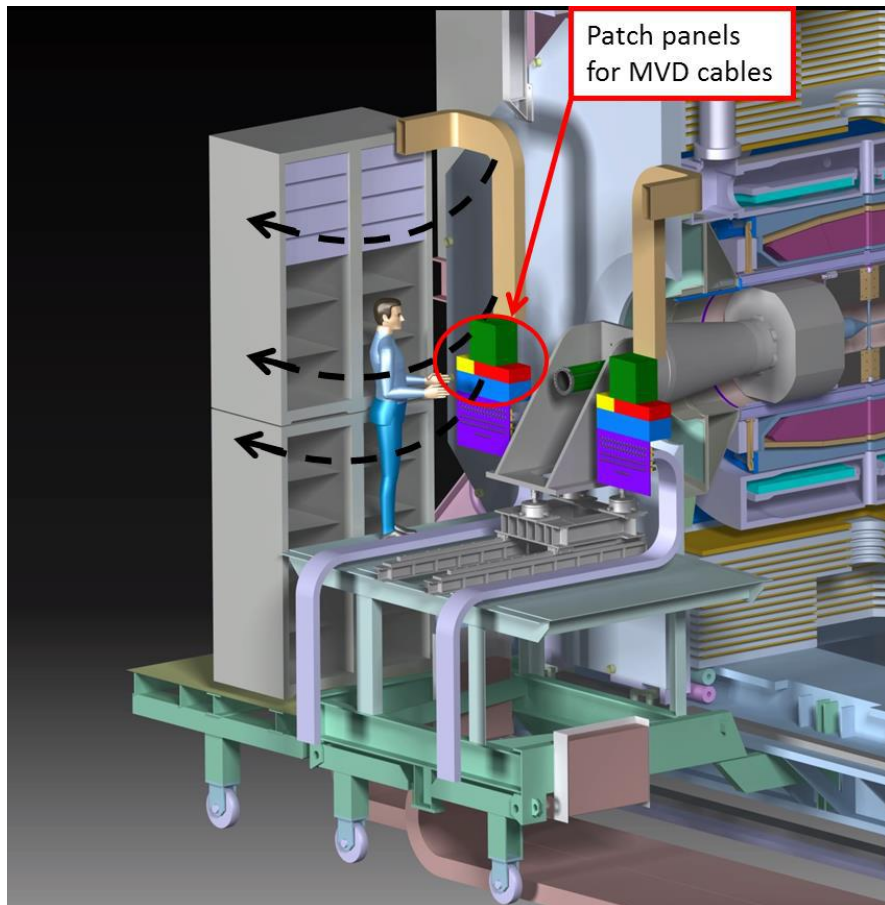


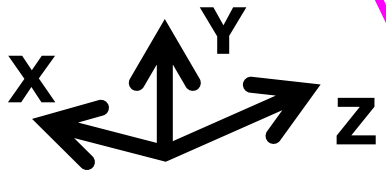
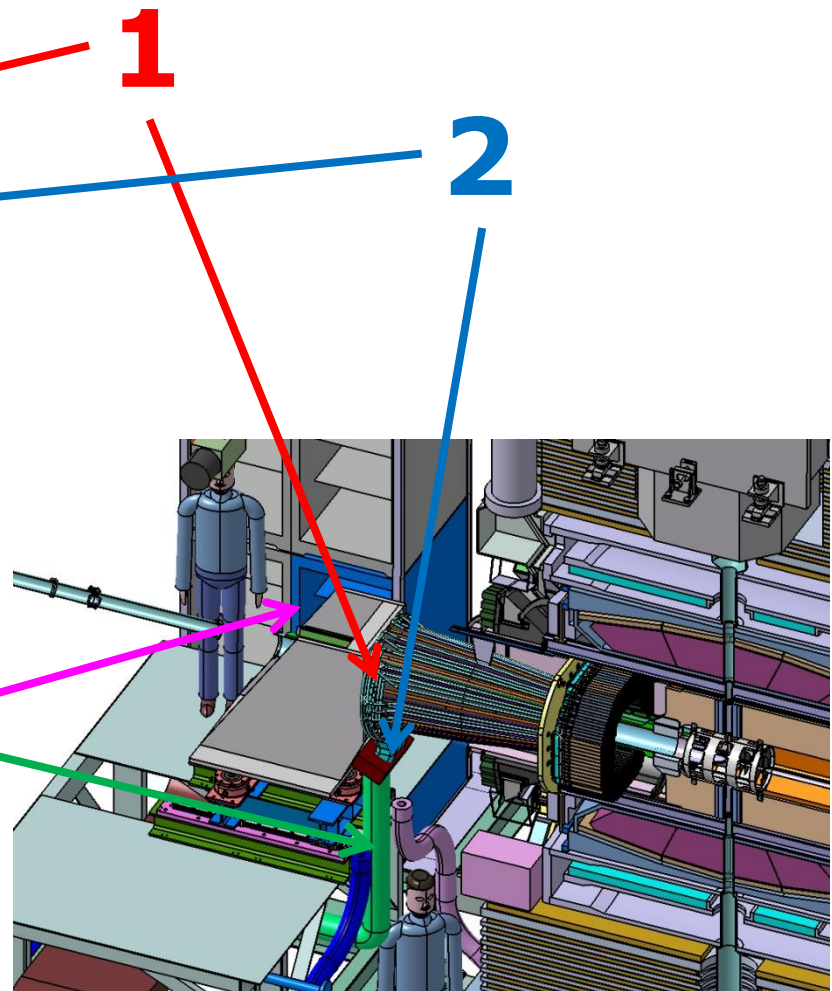
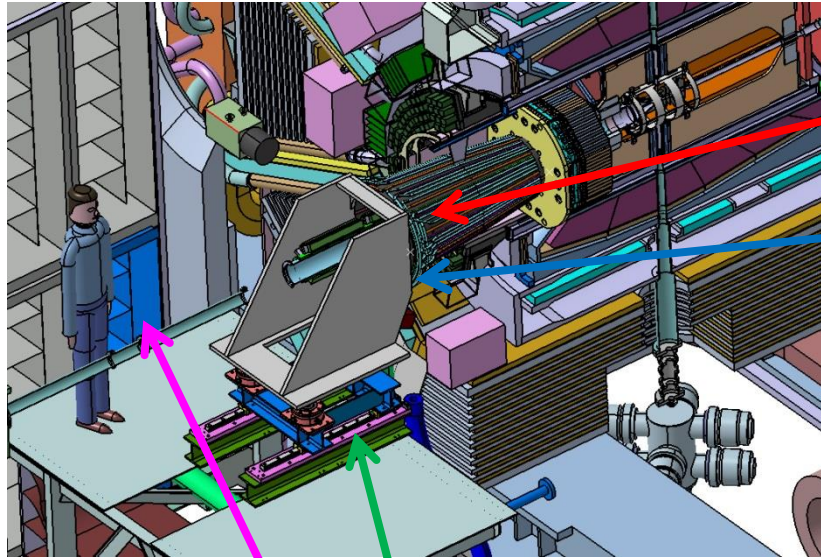
Table of Cables

PANDA 17/1 Collaboration Meeting
Mechanical Session
07-Mar-2017

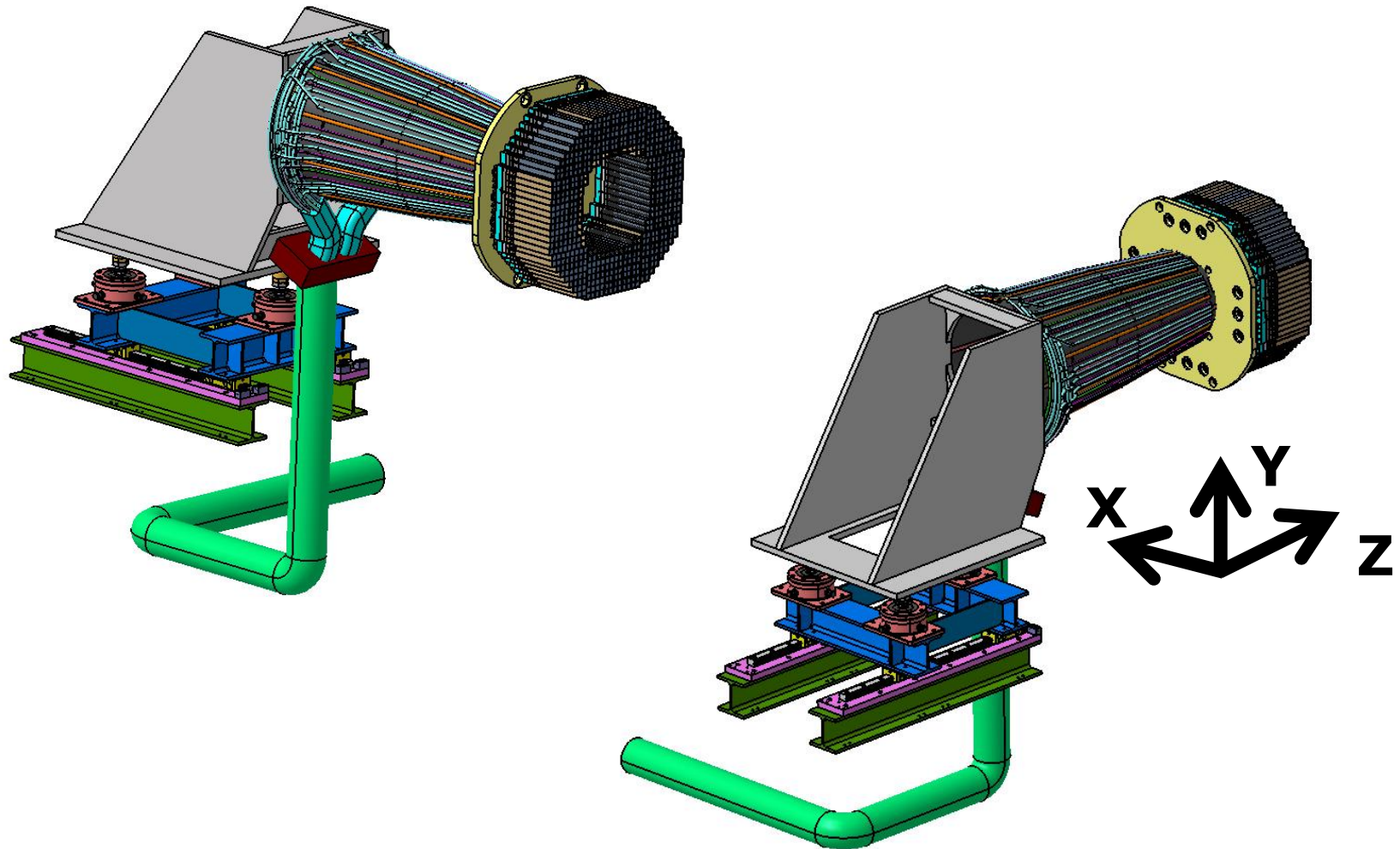


Sections in the Upstream (MVD-STT-BWEC)

1. End of Services (from detector)
2. Patch Panels
3. Services from PP to Racks
4. Racks



3
4

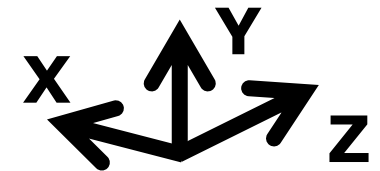


1. End of Services (from detector)

1.1	Positions (Coordinates, add comments)	x	y	z	Type (model, series)	Comments
1.1.1	HV connector				Lemo FGG.4B.324.CYCD13	
1.1.2	LV connector				TBD	
1.1.3	Signal connector				TBD	Directly to rack
1.1.4	Cooling channel connector				TBD	
1.1.5	Optical fiber connector				Customized (bundle)	Directly to rack
1.1.6	THMP				TBD	Change flat cables (noise), check THMP box position. To rack
1.1.7	Programming Lines				CAT7/USB Connector	(probably)
1.1.8	Nitrogen				Swagelok	

1.2	Cross sections	Cable/Pipe Diameter (mm)	Section of unit (mm2)	Units	Total net (mm2)	Total square (mm2)	Type (model, series)	Comments
1.2.1	HV cable	13	132,7	10	1327	1690	Lemo	From PP to E10
1.2.2	LV cable	13	132,7	10	1327	1690	TBD for now, same as HV)	
1.2.3	Signal cable	3,3	8,6	524	4482	5706	HFS 100 Cu (Leg.) (PiMF) 4x2x0, 16/0,5 FRNC	
1.2.4	Cooling channel	80	5026,5	8	40212	51200	TBD	
1.2.5	Optical fibers	1,3	1,3	524	696	886	TBD	
1.2.6	THMP	4,3	14,5	1	15	18		Change flat cables (noise), check THMP box position
1.2.7	Programming Lines	8,8	60,8	5	304	387	CAT7/USB	
1.2.8	Nitrogen	10	78,5	4	314	400	Swagelok	
Total cables					48677	61978		

2. Patch Panels				
2.1	Positions (Describe the preferred position)	0, -600,-2240		
2.1.1	HV			
2.1.2	LV			
2.1.3	Signal	Directly to rack		
2.1.4	Cooling			
2.1.5	Optical fibers	Directly to rack		
2.1.6	THMP	Directly to rack		
2.1.7	Programming Lines			
2.1.8	Nitrogen			
2.2	Size (in mm)	Δx	Δy	Δz
2.2.1	HV	100	50	50
2.2.2	LV	TBD		
2.2.3	Signal	Directly to rack		
2.2.4	Cooling	200	400	200
2.2.5	Optical fibers	Directly to rack		
2.2.6	THMP	TBD		
2.2.7	Programming Lines	TBD		
2.2.8	Nitrogen	150	150	100
2.3	Weight (in kg)			
2.3.1	HV	NVAL		
2.3.2	LV	NVAL		
2.3.3	Signal	NVAL		
2.3.4	Cooling	NVAL		
2.3.5	Optical fibers	NVAL		
2.3.6	THMP	NVAL		
2.3.7	Programming Lines	NVAL		
2.3.8	Nitrogen	NVAL		
2.4	To be attached (Where it will be supported)			
2.4.1	HV	Attached to the base support		
2.4.2	LV	Attached to the base support		
2.4.3	Signal	Directly to rack		
2.4.4	Cooling	Attached to the base support		
2.4.5	Optical fibers	Directly to rack		
2.4.6	THMP	Change flat cables (noise), check THMP box position		
2.4.7	Programming Lines	Attached to the base support		
2.4.8	Nitrogen	Attached to the base support		



3.Services from PP to Racks

3.1 Connectors (at patch panel)	Type (model, series)	Comments
3.1.1 HV connector	Lemo (Same - Male/Female)	
3.1.2 LV connector	TBD (Same)	
3.1.3 Signal connector	(Directly to rack)	
3.1.4 Cooling channel connector	TBD	
3.1.5 Optical fiber connector	(Directly to rack)	
3.1.6 THMP	TBD	Change flat cables (noise), check THMP box position. To rack
3.1.7 Programming Lines	CAT7/USB Connector	(probably)
3.1.8 Nitrogen	Swagelok (Same)	

3.2 Cross sections	Cable/Pipe Diameter (mm)	Section of unit (mm2)	Units	Total net (mm2)	Total square (mm2)	Type (model, series)	Comments
3.2.1 HV cable	13	132,7	10	1327	1690	Lemo	From PP to E10
3.2.2 LV cable	13	132,7	10	1327	1690	TBD	
3.2.3 Signal cable						HFS 100 Cu (Leg.) (PiMF) 4x2x0, 16/0,5 FRNC	
3.2.4 Cooling channel	80	5026,5	8	40212	51200	TBD	
3.2.5 Optical fibers						TBD	
3.2.6 THMP	TBD (Box position to be checked)						Change flat cables (noise), check THMP box position
3.2.7 Programming Lines	8,8	60,8	5	304	387	CAT7/USB	
3.2.8 Nitrogen	10	78,5	4	314	400	Swagelok	
Total cables				43485	55367		

3.3 Connectors (at the rack)	Type (model, series)	Comments
3.3.1 HV connector	Redel (to E10 room)	
3.3.2 LV connector	TBD	
3.3.3 Signal connector	Direct	
3.3.4 Cooling channel connector	TBD (to the cooling plant)	
3.3.5 Optical fiber connector	Direct	
3.3.6 THMP	TBD	
3.3.7 Programming Lines	CAT7/USB	Box position to be checked
3.3.8 Nitrogen	Swagelok (To the building supply)	

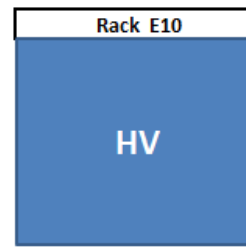
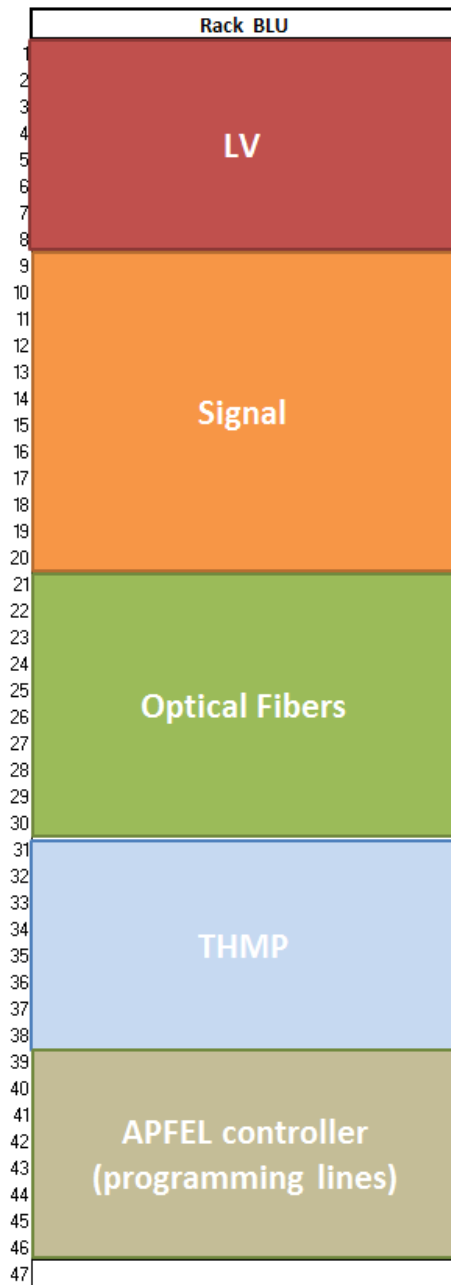
4. Racks

4.1 Selection (Which rack is preferred, e.g. B-L-U)	
T - Top, B - Bottom	B-L-U
L - Left (west), R - Right (east)	
U - Upstream, D - downstream (closer to the IP)	

4.2 "U" - Rack units	Units	Comments
4.2.1 HV		8 To E10
4.2.2 LV		8 (TBD)
4.2.3 Signal		12
4.2.4 Cooling		To EMC cooling plant
4.2.5 Optical fibers	8+2 (TBD)	(modules -LV/HV- + boxes)
4.2.6 THMP		8 (boxes + RaspPi)
4.2.7 Programming Lines		TBD
4.2.8 Nitrogen		To building supply

4.3.a Crates/Boxes	Number	Comments
4.3.a.1 HV		1
4.3.a.2 LV		1
4.3.a.3 Signal		2
4.3.a.4		
4.3.a.5 Optical fibers	1 crate + 5 boxes (TBD)	
4.3.a.6 THMP	1 crate + 4 boxes (TBD)	
4.3.a.7 Programming Lines		8 Maybe to ADCs
4.3.a.8		

4.3.b Pipes path	Comments
4.3.b.1	
4.3.b.2	
4.3.b.3	
4.3.b.4 Cooling	To EMC cooling plant
4.3.b.5	
4.3.b.6	
4.3.b.7	
4.3.b.8 Nitrogen	To building supply



Thank you

S. Ahmed
L. Capozza
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J. Jorge Rico
J. Köhler
F. Maas
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D. Rodríguez Piñeiro
S. Wolff