Status of cabling YB+2 and YB+1, extension to minus wheels and YB0, cables between UXC55 and USC55

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Status of MB and RB cables installation

	YB+2 (IHEP team)											
	1	2	3	4	5	6	7	8	9	10	11	12
MB.LV.mc	P	P	P	P	P	P	√	√	√	√	√	√
MB.LV.fe	w	w	w	w	w	w	√	√	√	√	√	√
MB.HV							√	√	√	√	√	√
MB.OF.ttc-mc	da	da	da	da	da	da	√	√	√	√	√	√
MB.OF.sc	da	da	da	da	da	da	√	√	√	√	√	√
MB.CA.sc (daisy)	P						P	√	√	√	√	√
MB.CA.sc (to rack)							√	√	√	√	√	√
MB.MCA.veto							√	√	√	√	√	√
MB.CA.tr							√	√	√	√	√	√
MB.CA.ro							√	√	√	√	√	√
RB.LV.fe-8	d	d	d	d	d	d	P	P			P	P
RB.LV.fe-12	d	d	d	d	d	d	P	P			P	P
RB.HV	d	d	d	d	d	d	P	P			P	P
RB.CA.sgn	da	da	da	da	da	da	P	P			P	P
RB.CA.dcs-6	d	d	d	d	d	d	P	P			P	P
RB.CA.dcs-9	d	d	d	d	d	d	P	P			P	P
RB.MCA.t-sens	d	d	d	d	d	d	P	P			P	P

	YB+1 (Russian team)											
	1	2	3	4	5	6	7	8	9	10	11	12
MB.LV.mc												
MB.LV.fe												
MB.HV												
MB.OF.ttc-mc	da	da	da	da	da	da	P	P	P			P
MB.OF.sc	da	da	da	da	da	da	P	P	P			P
MB.CA.sc (daisy)	P						P					
MB.CA.sc (to rack)	w	w	w	w	w	w						
MB.MCA.veto	w	w	w	w	w	w						
MB.CA.tr	P	P	P	P	P	P						
MB.CA.ro	P	P	P	P	P	P						
RB.LV.fe-8												
RB.LV.fe-12												
RB.HV												
RB.CA.sgn	d	d	d	d	d	d	d	d	d	d	d	d
RB.CA.dcs-6												
RB.CA.dcs-9												
RB.MCA.t-sens												

YB+1:
almost 90% MB dwg delivered!

Fibres Installed by INFN PD

Fibres Installed by INFN PD

LEGENDA

- Full blank means **CABLES NOT AVAILABLE AT CERN**
- Cables **AVAILABLE at CERN**
- **Cables installed -** ready to be commissioned or commissioned
- w Installation **DWG** and application tables **UNDER WORKING** now
- d Installation **DWG DELIVERED**
- da Installation **DWG** and application tables **DELIVERED**
- P ***Sector Partially INSTALLED (DWG all released)***
- √ ***DT Cables & minicrates work well together*** _ ***RPC can be installed***

Note:

* Racks in levels X3 and X4 of near tower on YB+1 will be finalized ufter MTCC, due to the big YB0 pipe
* Spares cables will be installed after the main installation
* Not shoewd here, there will be a check on the installated cables

Status of MB and RB cables installation

Production of installation dwg and application tables is an heavy task. I'm putting those on EDMS.
Actual organization

MB:

I'm working on application tables and installation dwg for all MB cables families.

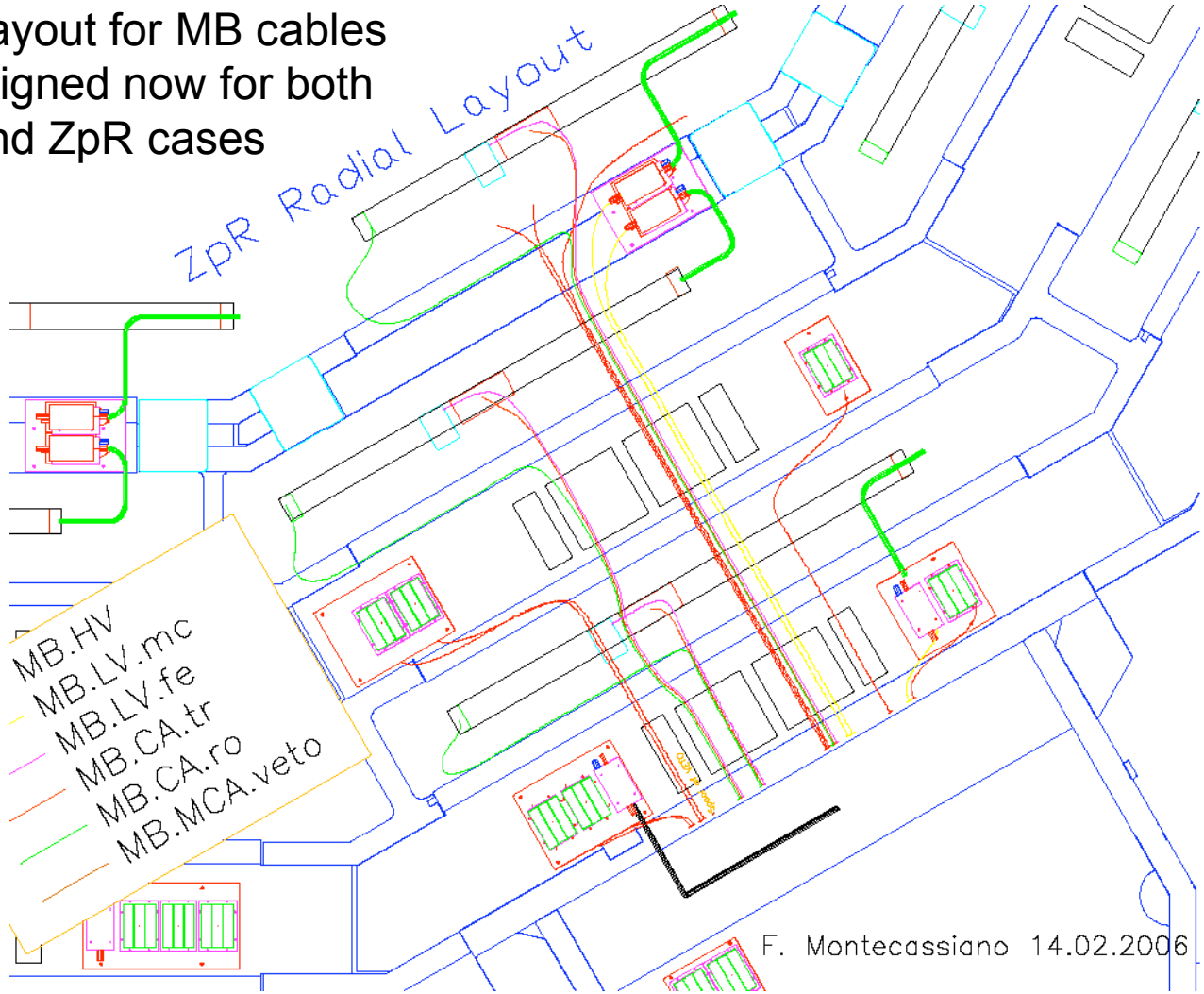
RB:

I released both application tables and installation dwg for the **RB.CA.sgn** @YB2 (75% of RPC cables, Dec 05).
For the others families I gave to RPC group the 3D design and full explication. Those 3D models are on EDMS. RPC group is preparing the application list and will follow the installation at P5 of its cables.

Example of installation dwg

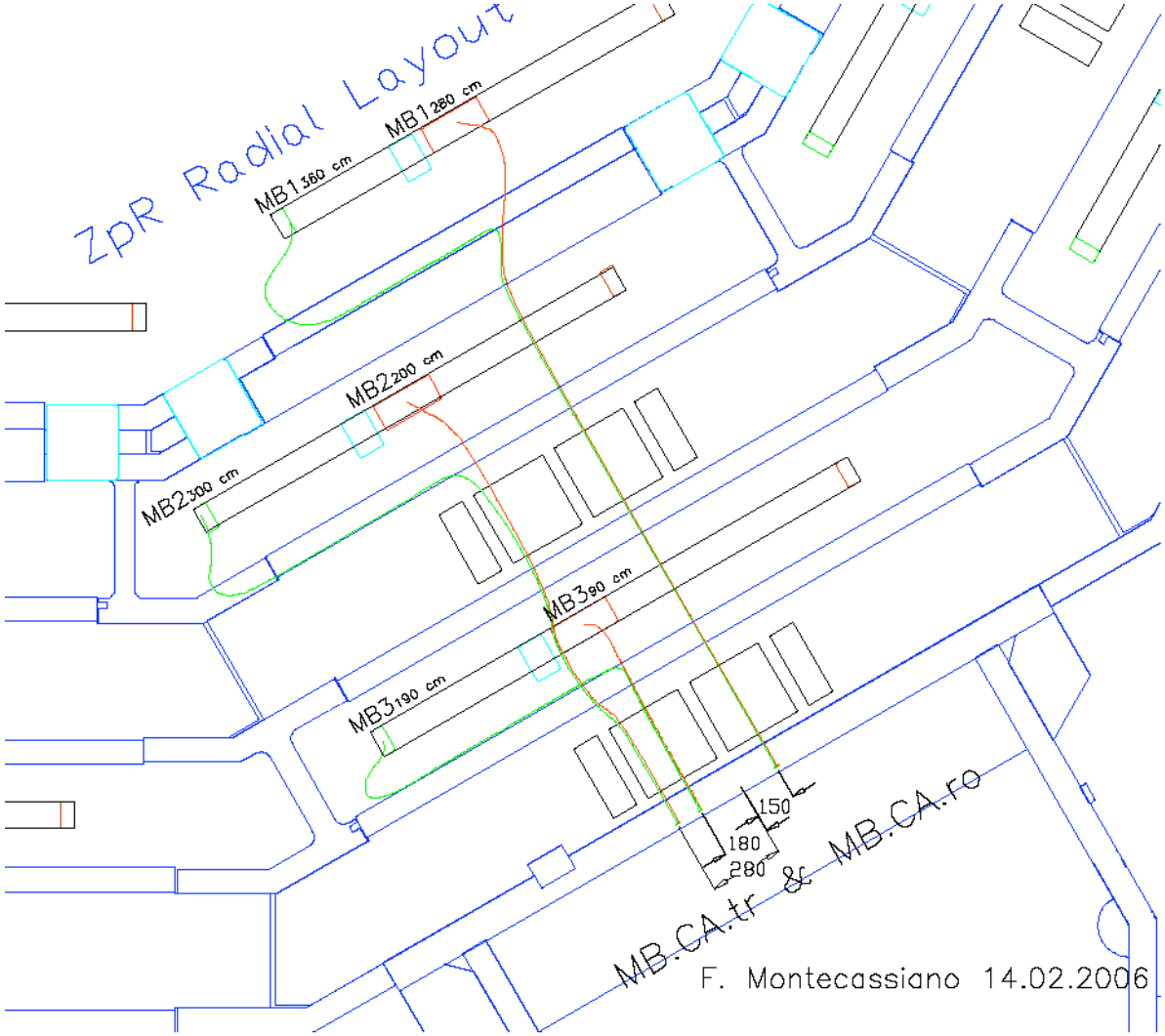
– New 3D cad design of MB radial cables

New radial layout for MB cables are cad designed now for both ZpL and ZpR cases



Example of installation dwg

– New 3D cad design MB.CA.tr and ro

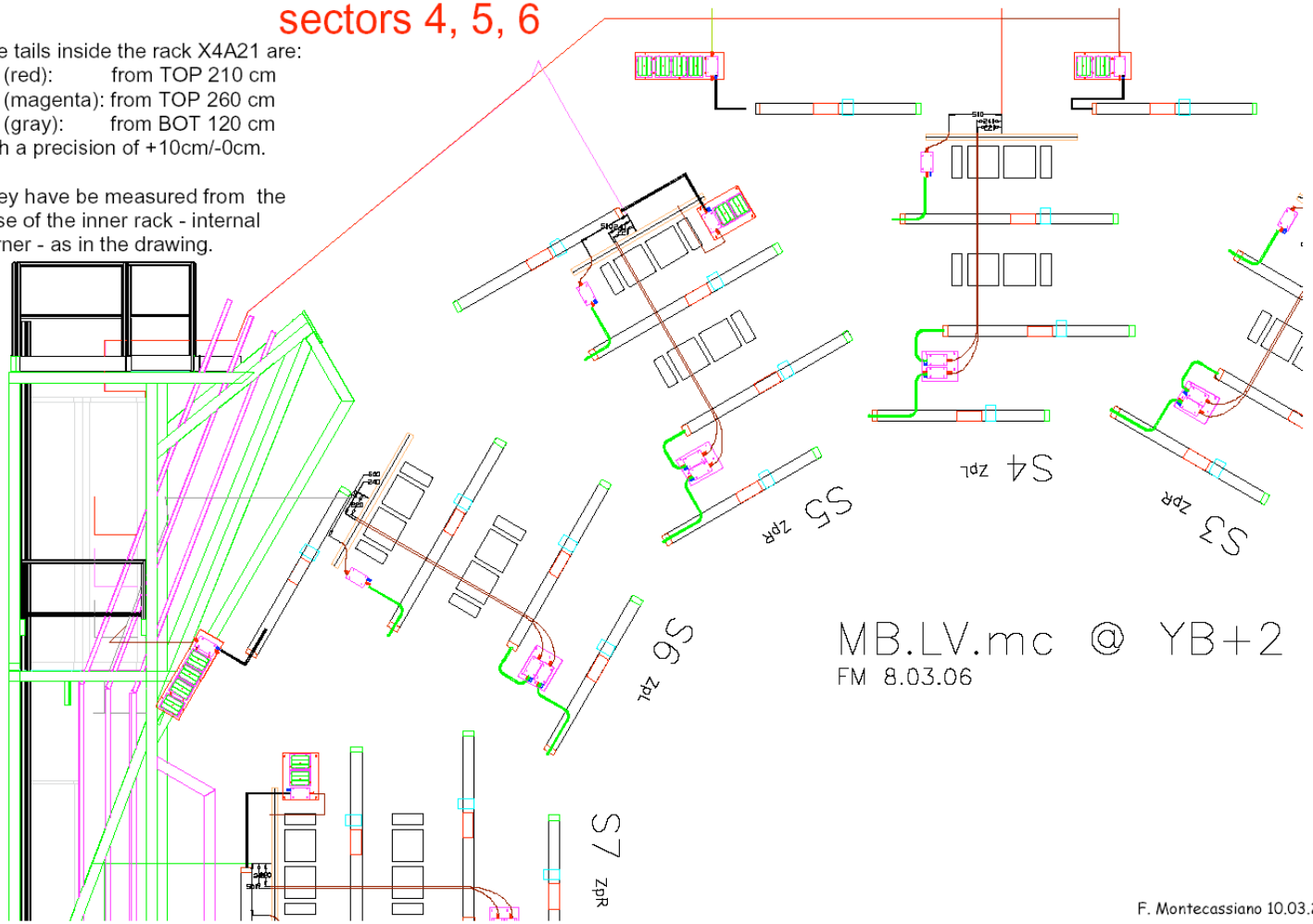


Example of installation dwg - MB.LV.mc @YB+2

MB.LV.mc ***YB+2***
sectors 4, 5, 6

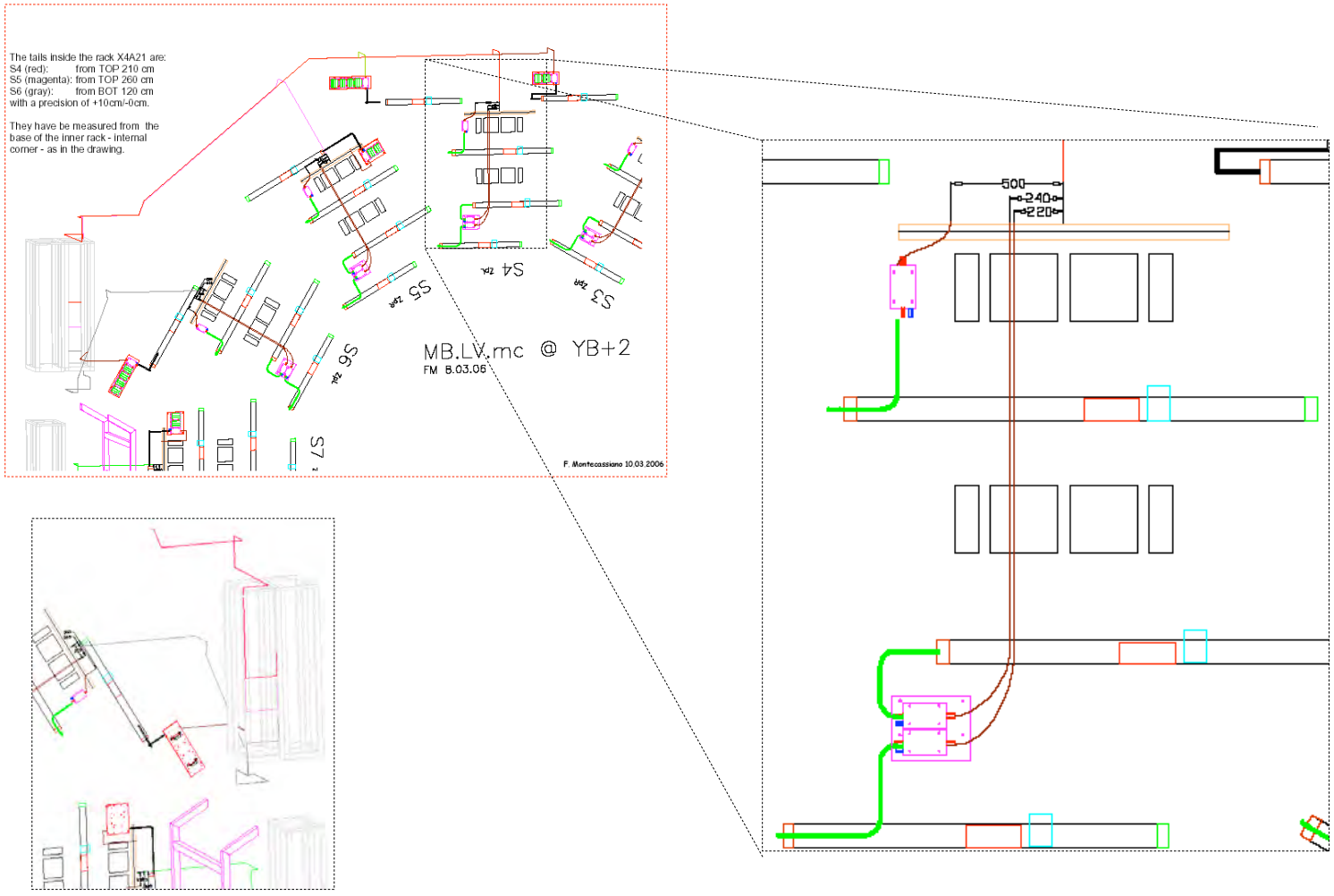
The tails inside the rack X4A21 are:
S4 (red): from TOP 210 cm
S5 (magenta): from TOP 260 cm
S6 (gray): from BOT 120 cm
with a precision of +10cm/-0cm.

They have be measured from the base of the inner rack - internal corner - as in the drawing.

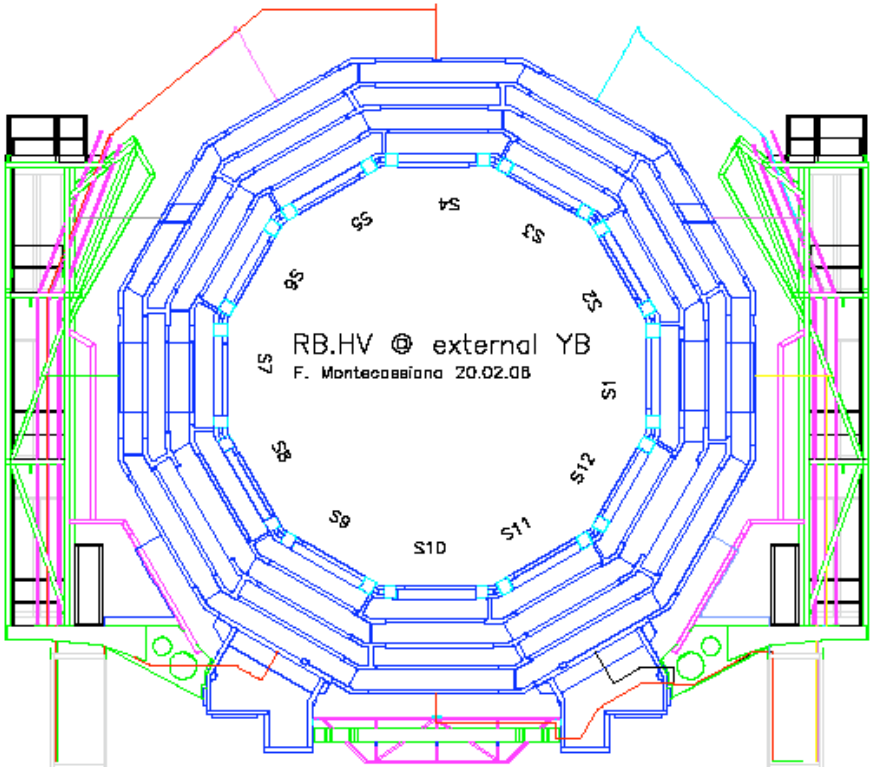


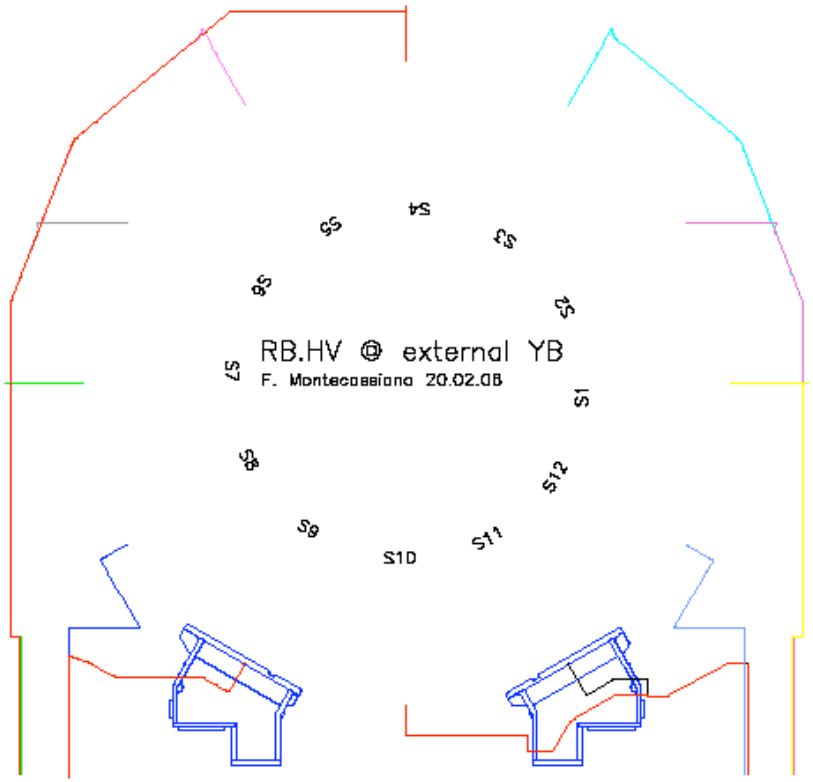
EDMS Id 593990

Example of installation dwg - MB.LV.mc @YB+2



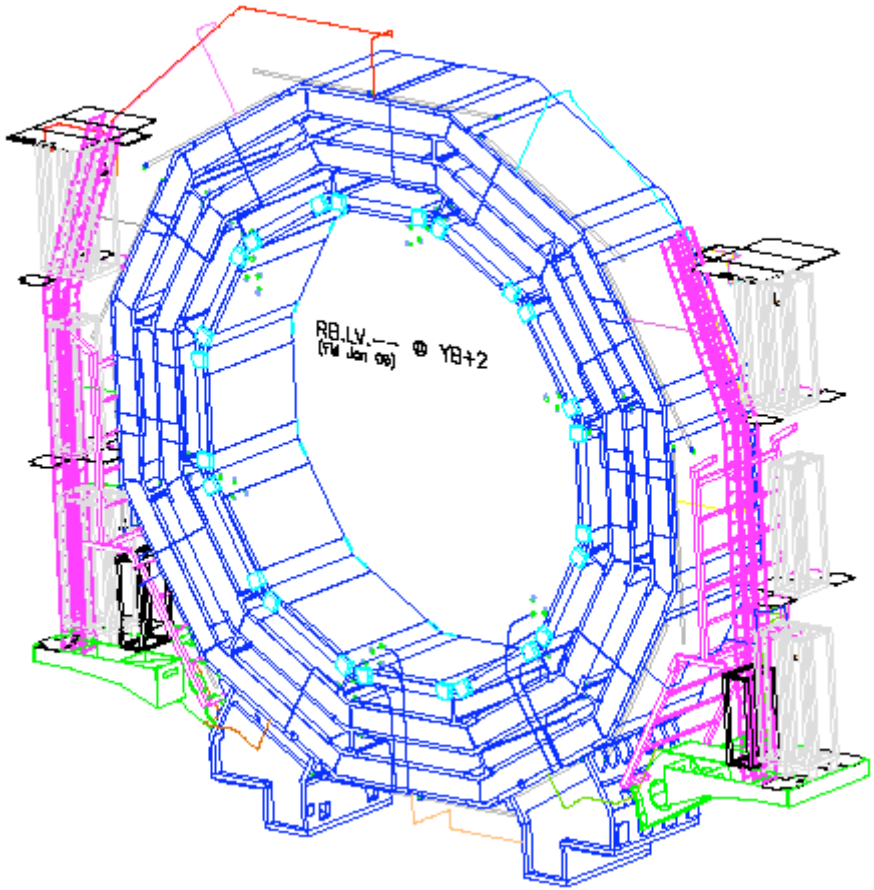
Example of installation dwg - RB.HV @YB+2

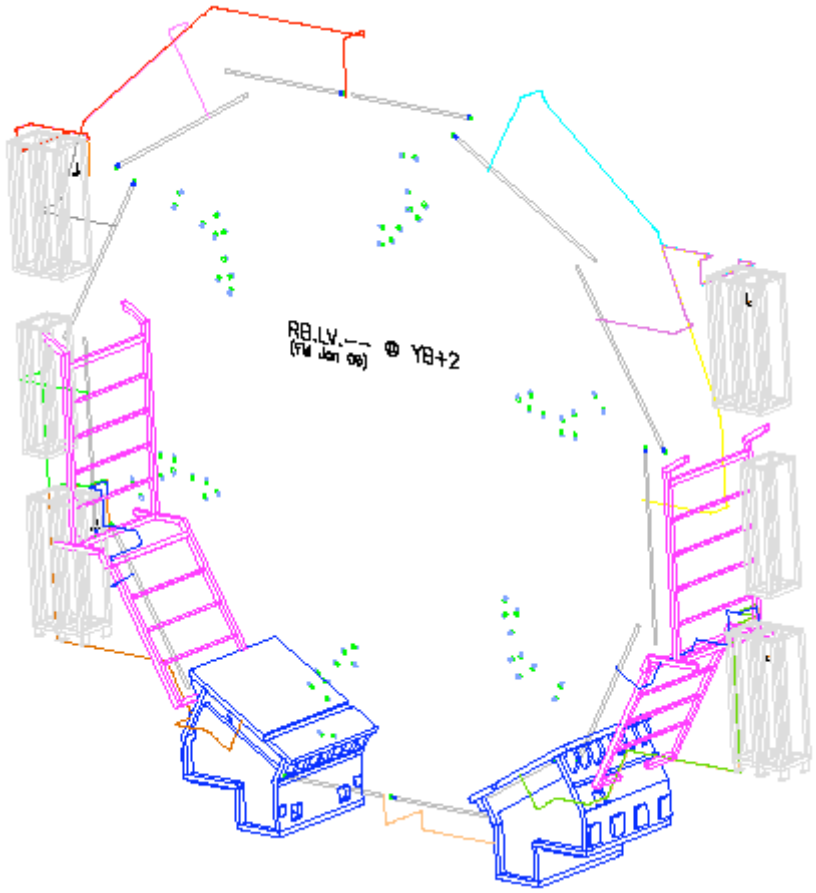




EDMS Id 594007

Example of installation dwg - RB.LV.-- @YB+2

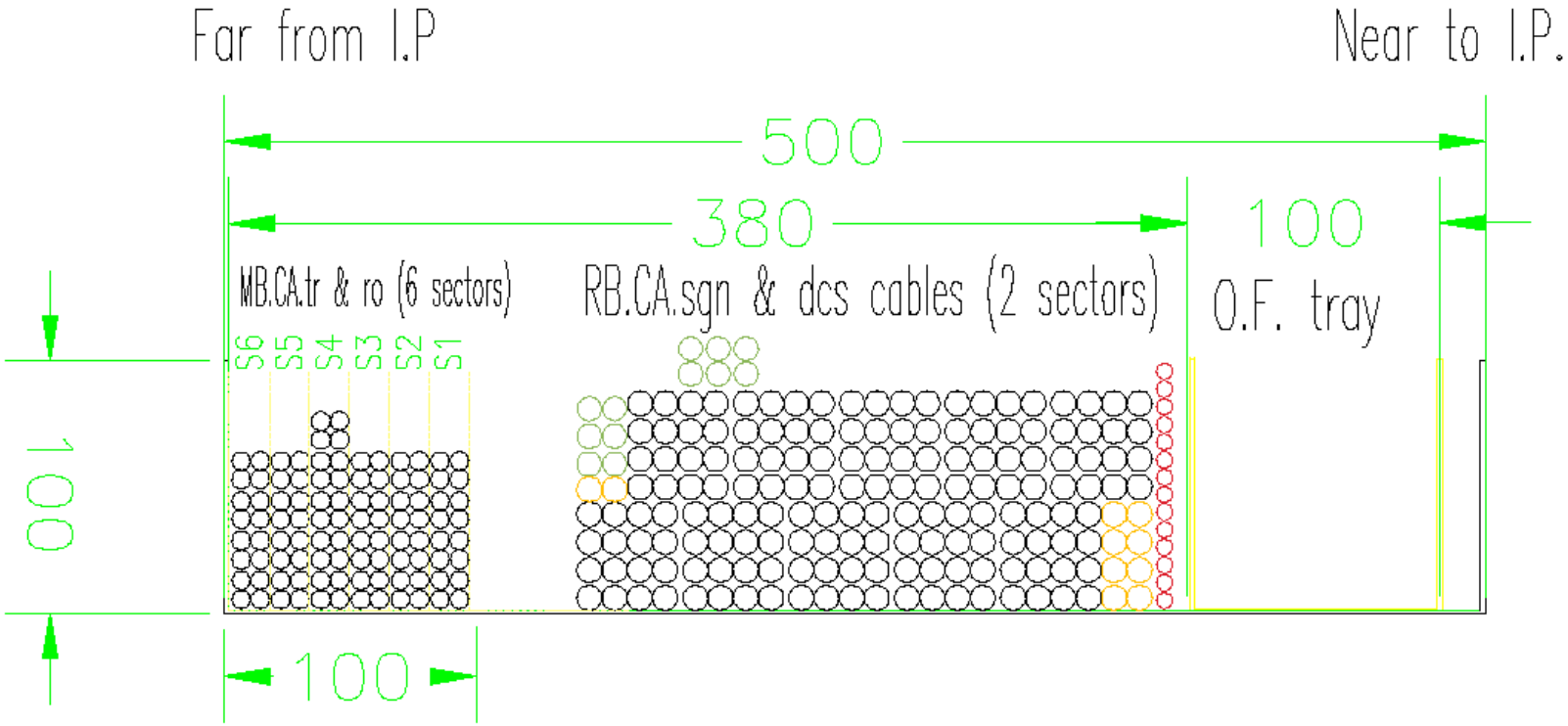




EDMS Id 594005, 594006

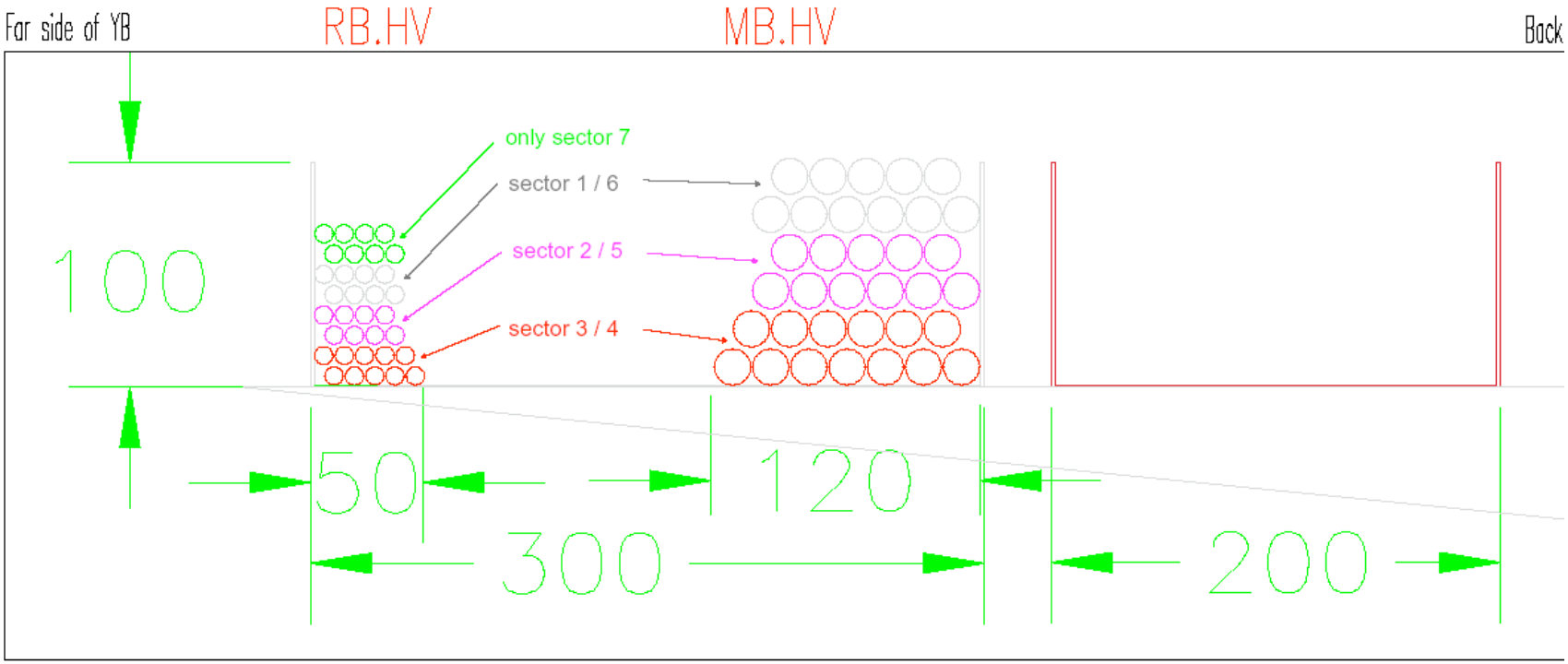
Signal cables tray

Worst cases are
- 6 sectors MB + 1 sector RPC
- 2 sectors MB + 2 sector RPC



HV cables tray

Situation in the HV tray close to level X4, far side



Summary of items on YB+2/+1-

red colored are missing

Please send me correction if you know some other missing items!

MB cables	Cables to be done by	DETECTOR / RADIAL		PERIPHERAL		RACK	
		Items missing / to be installed	Cabling/ Plug conn.	Items missing / to be installed	Cabling by	Items missing / to be installed	Cabling by
HV		Y ground connector	CERN/ CERN		CERN	•Rack PP Kerpen→SHV (EB) •Cable chain PP (EB)	HOME
LV.mc	CIEMAT		CERN/ CERN		CERN	•"rastrelliere" for cables (CW) •EASY crates or moke-up •Cable chain PP (CW, MP)	HOME
LV.fe	IHEP		CERN/ HOME		CERN		HOME
CA.tr & Ca.ro	DAETWYLER		CERN/ CERN		CERN	•"rastrelliere" for cables (CW) •Cables on SC crates-moke-up	HOME
CA.veto & CA.sc	IHEP		CERN/ HOME		CERN		HOME
OF.ttc-mc & OF.sc	UNIFIBRE	Corrugated tubes have to be optimized/shorted	CERN/ HOME	Parts for fibres' top tray to be installed	HOME & CERN		HOME

Racks - Cooling

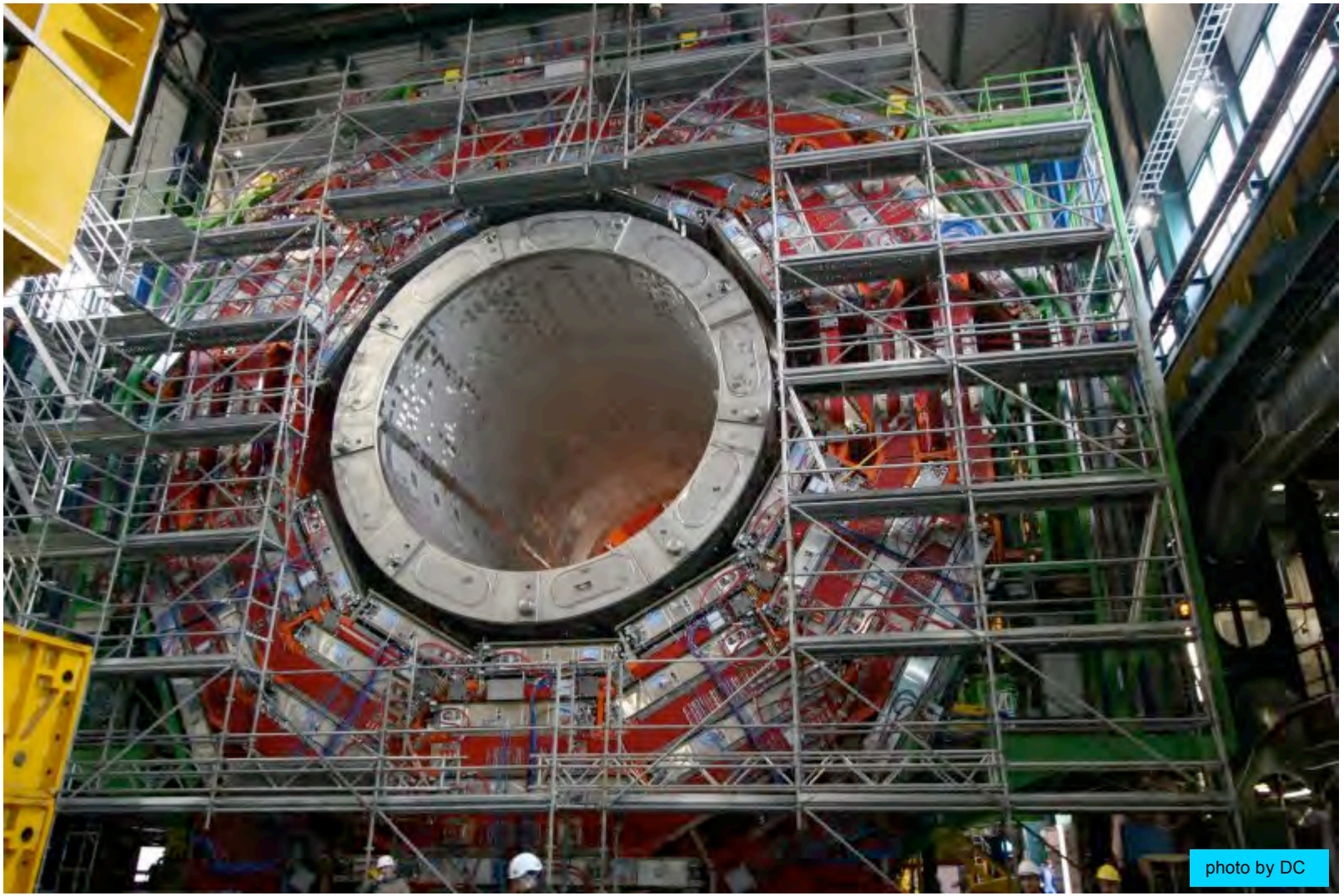
- It is now very urgent to solve the open question about the racks' cooling.
  In order to progress quickly this requires different expertises. Proposal (to be verified):
  - M. Giunta/P. Giacomelli as rack experts
  - An mech. engineer from RPC to study the problem
  - A support institute to manufacture the pieces

We have different types of racks (HV,LV, trigger) and many variants.

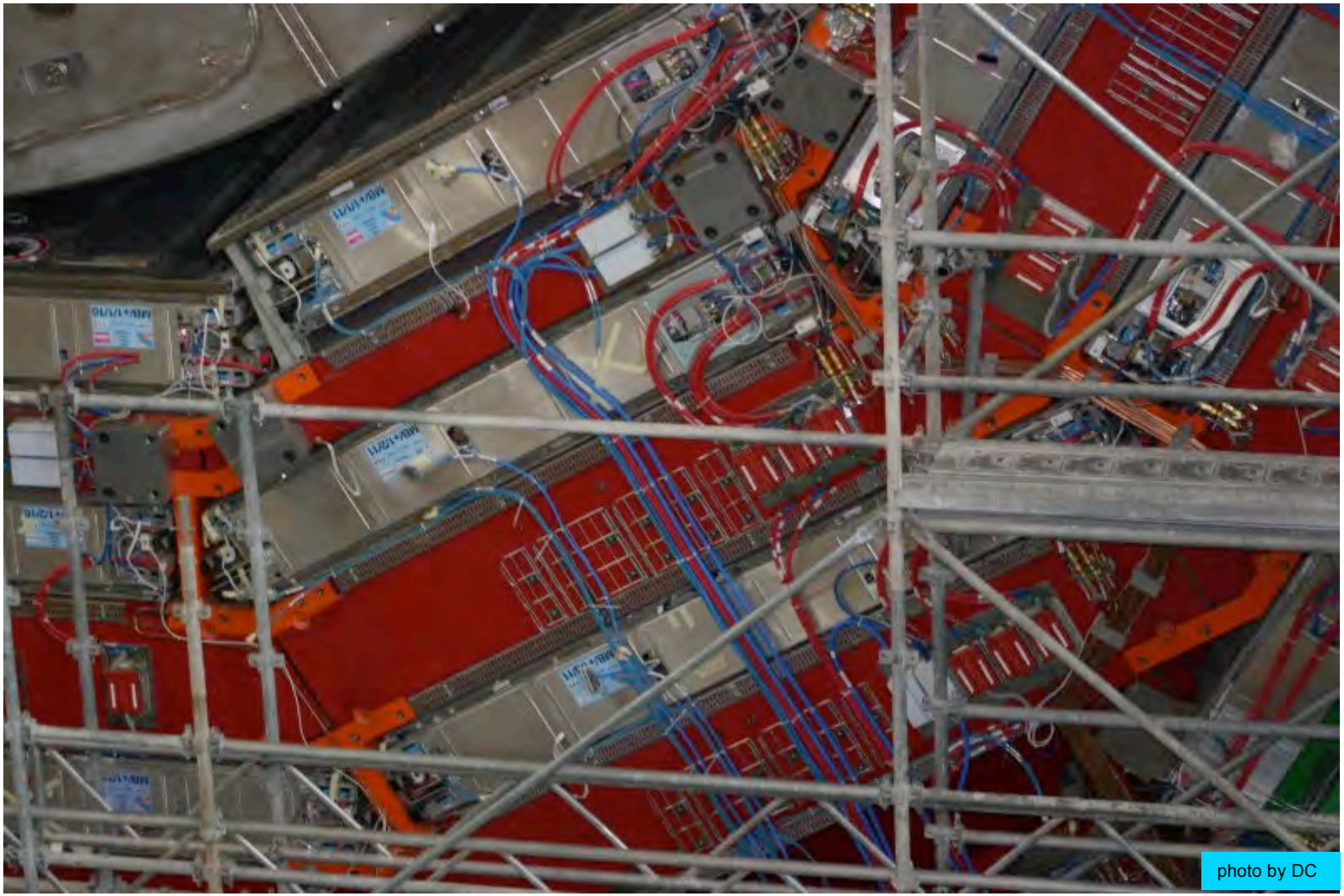
Racks - Cabling

- DT HV racks cabling is going on well
- LV racks still lto be done. There are cables longer then needed to be finalized by CIEMAT.
- TRIGGER rack is under preparation now.
  A moke-up for Sector Collector CRATE was made by INFN PD. P. Checchia and some CIEMAT tecnician will begin soon this activity

Some Picture - YB+1 8.03.06

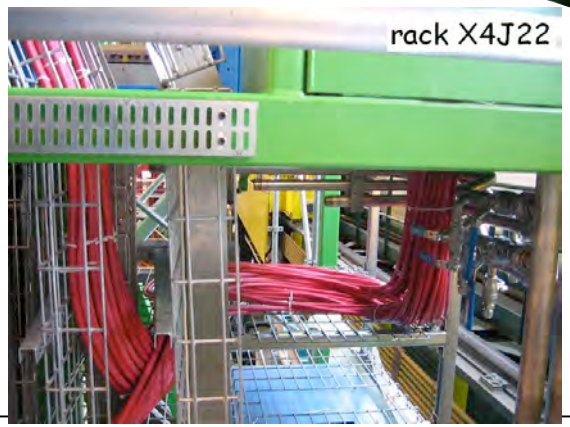


Some Picture - S11@ YB+1 8.03.06



Some Picture - MB.HV @ YB+2 8.03.06

pictures by IHEP



YB0, YB-1 and YB-2

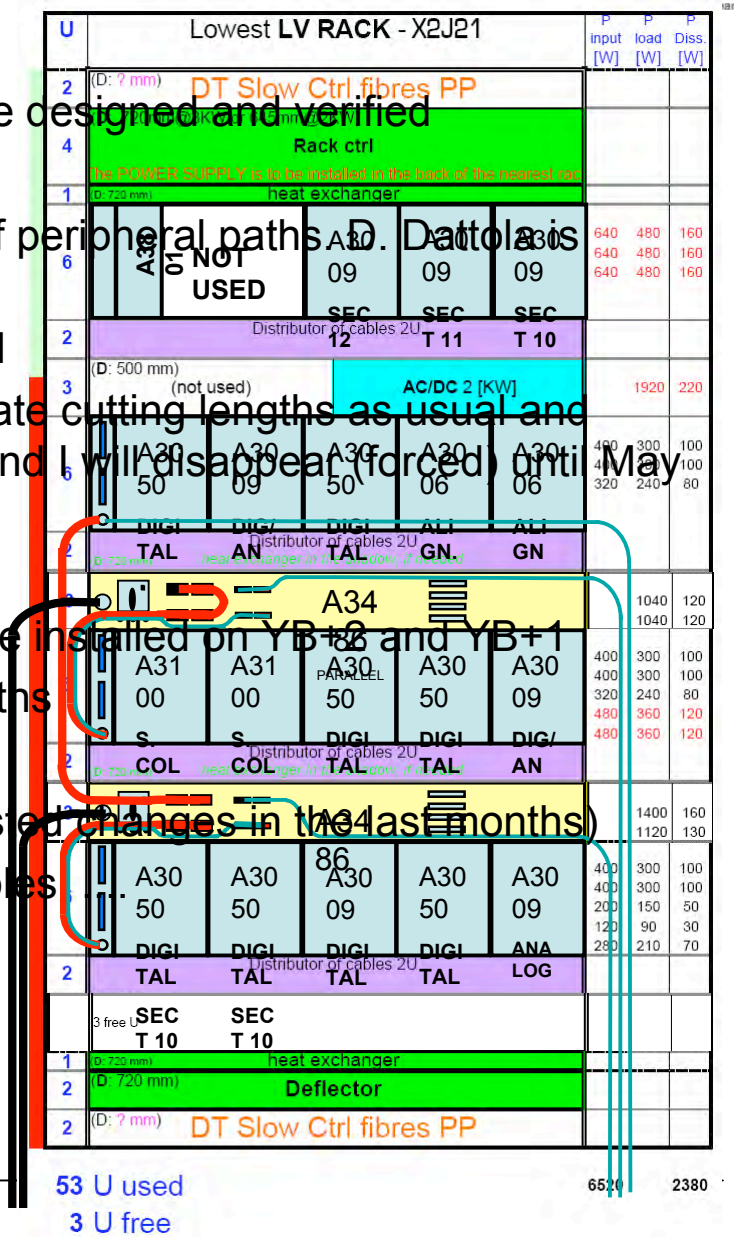
A lot of missing items needed to finalize cutting lengths

- YB-1 and YB-2
  - Peripheral paths are almost the same as in the positive wheels. No major work is required there. I can adapt what I already done for positive wheels.

RACKS

EASY LV crate and AC-DC conv.

- Matteo is in touch with CAEN to solve the questions about connectors. They have to be in the front of the crates for inner racks because as stated since 2002 at Padova becase inner racks have the back not accessible by the cables-tray.
- After those things will be finalized, I could calculate cutting lengths as usual and release installation dwg but it take a lot of time and I will disappear (forced) until May 06, since end of next week.
- Anyway some exception exists. This could help the absent-minded persons.
- Also there are many other urgent work pending
- Work to update the layout is requested
  - Application list and dwg for last racks to be installed on YB+2 and YB+1
  - PRR long cables, procurament, cutting lengths
  - cable chain patch panels
  - racks layout update (LV/RPC/ALIGN requested changes in the last months)
  - Detailed design of each single rack with cables ...
- YB0
  - Radial layouts (ZmL and ZmR) has still to be designed and verified
  - it is not yet defined from the point of view of peripheral paths. D. Dattola is working on this subject.
  - also radial layout ZmL and ZmR are needed



Cables between UXC55 and USC55
LV cables inside UX and UX-US

- LV cables are now fully defined. There is just a verification under progress by M. Pegoraro about the need of furthers cables for LV *interlocks.*
- All the LV MB and RB cables are from CERN store

MB.CA.lv-ctrl_ux
MB.LV.48vs_ux

MB.CA.lv-ctrl_uxus
MB.LV.48vs_uxus

RB.CA.fe-lv-ctrl_ux
RB.LV.fe-48vs_ux
RB.CA.lb-lv-ctrl_ux
RB.LV.lb-48vs_ux

RB.CA.fe-lv-ctrl_uxus
RB.CA.lb-lv-ctrl_uxus
RB.LV.48vs_uxus

- VERY URGENT: availability is to be checked by the responsible of those cables! Purchasing can be done!

Cables between UXC55 and USC55
MB Fibres between UX-US

- Progress on the definition of these fibres
- We got the TIS authorization for the following fibres (M. Bellato)
  MB.OF.ttc-ex_uxus
  MB.OF.sc_uxus
  MB.OF.seco-ctrl_uxus
  Waiting for lenghts form Int. Office, then purchasing.
- About the tr-ro fibre "MB.OF.tr-ro_uxus" (C. Willmott) we are waiting for documentation from ERICSSON.
- **Summary**
  with the exception of above "MB.OF.tr-ro_uxus" fibre,

  ALL MB CABLES AND FIBRES TO BE INSTALLED BY CERN TEAM ARE NOW DEFINED AND READY TO BE PROCURED (In some cases cutting lengths are required before to put the order)

MB Cables between UXC55 and USC55

SPARE GENERAL POLICY
The minimal set....
- 1 cable/wheel, the longest.
- to be installed with others
- all leads and screens shall be earthed on both ends

THIS IS TO BE APPROVED !!!

SUMMARY of Muon Barrel - Cables between UXC55's towers and USC55

		MB								
		MB.CA.lv-ctrl_uxus	MB.LV.48vs_uxus	MB.HV.main_uxus	MB.LV.hv_uxus	MB.CA.hv-ctrl_uxus	MB.OF.ttc-ex_uxus	MB.OF.sc_uxus	MB.OF.seco-ctrl_uxus	MB.OF.tr-ro_uxus
	Responsable person	*Willmott*	*Willmott*	*Borsato*	*Borsato*	*Borsato*	*Bellato*	*Bellato*	*Bellato*	*Willmott*
	Status of the only cable	*defined*	*defined*	*defined*	*defined*	*defined*	*defined*	*defined*	*defined*	*waiting d-sheet*
	Cable's diameter [mm]	10	18.6	16	17.4	9.6	7.6	11	7.6	10
	Bend radius [mm]		120	-	210	115	80	150	81	80
	Weight [g/m]			310	489	104	64	130	65	150
	Producer-Supplier	CERN STORE	CERN STORE	KERPEN	Novacavi	Novacavi	OPTRAL [UNIFIBRE]	DRAKA [UNIFIBRE]	OPTRAL [UNIFIBRE]	ERICSSON
	Type	04.21.51.550.4	04.08.82.160.2	SL-V2YCeH	16A1967	P0784_03-2	CDAD armored	NO5	CDAD armored	:CA/T/MN 2223-17.11.03
	Cable description	RS 25X2 x 0.088mm2	2x 16mm2 +screen	RS-56w	RS-8p	RS-4p	ref. TRK029THUU120	72 fibers	ref. TRK026THLL120	8 ribbons x 12 fibers
	Dis. power (worst) [W/m]	-		-		-	-	-	-	-
	Installation's kind	*CU-sgn*		*HV*	*PS*	*CU-sgn*	*Fiber*	*Fiber*	*Fiber*	*Fiber*
	From *UXC55's crates or PPanel*	ft's PP	ft's PP	rk's PP:	ft's PP (rk@W0):	ft's PP (rk@W0):	rk's crate:	rk's PP:	rk's crate:	rk's PP:
	name in 'RACKs LAYOUT'	MB LV	MB LV	DT HV PP	DT ft - HV PP	DT ft - HV PP	DT TR/RO Sec. Col.	DT Slow Ctrl PP	DT TR/RO Sec. Col.	DT TR/RO Sec. Col. - oc
	To *USC55's rack position*	Zone S1 - D07:11	Zone S1 - ---	Zone S1 - D07:11	Zone S1 - D07:11	Zone S1 - D07:11	Zone S1 - E02-03	Zone S1 - G00	Zone S1 - G00	Zone S1 - D01:03
	crates or PPanels	DT LV's SY1527	DT LV's MACISTE	DT HV PP	DT HV PP	DT HV PP	TTC Opt. Cpl.	DT/RO/SC	DT/RO/SC	DT TrkFnd
	Q.ty needed links / Wheel	2		2x 50	50	14	1 fibre per Sec Col	50x 2f+2x 2f	2 fibres per Sec Col	80 data channels
	spares						1 spare	20+20 spare	2 spares	12 fibers
	COMMENT	max 1 → 6 LV EASY crates 2x DAISYCHAIN for DT LV / wheel cheap- max 100m	1 per TOWER SCREENED !	1 → 12/13 A877	1 → 4 A877 8x2xawg 15- no sensing	1 → 4 A877	1+1 fibres/cable all same length ! MU-MU conect.	same materials as "MB.CA.sc"	2+2 fibres/cable LC-LC conect.	all same length ? 850[nm], m. mode
W0	N. cables on W0	2	2	4	12	12	2	2	2	1
	spares to be installed	0	0	1	1	1	1	0	1	0
	Estimated medium length [m]	115	115	100	115	115	70	70	70	70
	TOT. LENGTH with spares [m]	230	230	500	1495	1495	210	140	210	70
	SPLIT POINT in CENTRAL WHEEL	Cavern PP's X2	Cavern PP's X2	DIRECT to racks	DIRECT to racks	DIRECT to racks	DIRECT lw rack	DIRECT lw rack	DIRECT lw rack	DIRECT lw rack
W±1	N. cables on W±1	2	2	4	12	12	2	2	2	1
	spares to be installed	0	0	1	1	1	1	0	1	0
	Estimated medium length [m]	100	100	100	100	100	70	70	70	70
	TOT. LENGTH with spares [m]	200	200	500	1300	1300	210	140	210	70
W±2	N. cables on W±2	2	2	4	12	12	2	2	2	1
	spares to be installed	0	0	1	1	1	1	0	1	0
	Estimated medium length [m]	100	100	100	100	100	70	70	70	70
	TOT. LENGTH with spares [m]	200	200	500	1300	1300	210	140	210	70
ALL 5	N. cables on all WHEELS	10	10	20	60	60	10	10	10	5
	spares to be installed	0		5	5	5	5	0	5	0
	TOT. LENGTH with spares [m]	1030	1030	2500	6695	6695	1050	700	1050	350
	SPLIT POINT in external WHEELS	feet lev. (or lw rack?)	feet lev.	DIRECT to racks	feet lev.	feet lev.	DIRECT lw rack	DIRECT lw rack	DIRECT lw rack	DIRECT lw rack

~:	39 cables
~:	5 spares
~:	4.6 [Km]
~:	39 cables
~:	5 spares
~:	4.1 [Km]
~:	39 cables
~:	5 spares
~:	4.1 [Km]
~:	195 cables
~:	25 spares
~:	21.1 [Km]

Names Legenda

The UPPER CASE initial part follows the CMS' Dbase guidelines.
- LV: power supply
- HV: power supply
- CA: copper signal
- OF: Optical Fiber

The _uxus ending part means the the cable start in UXC55 and end in USC55.

The lower case part before the _uxus postfix comes from the MU local name.

FROM/TO Legenda
- JB: Junction Box
- MB: Muon DT Barrel
- MC: MiniCrate
- PC: Patch Connector
- PP: patch panel
- RB: RPC Barrel
- SB: Split Board

- ft: foot (or cavern X2 for W0)
- rk: rack
- lw rk: lowest rack
- yk: yoke

RB Cables between UXC55 and USC55

SPARE GENERAL POLICY
The minimal set....
- 1 cable/wheel, the longest.
- to be installed with others
- all leads and screens shall be earthed on both ends

THIS IS TO BE APPROVED !!!

SUMMARY of Muon Barrel - Cables between UXC55's towers and USC55

Major news : RB.OF.ctr_uxus (TECHN. trigger fibres) doesn't exist anymore because it was merged with RB.OF.lb_uxus (Lboard trigger fibres)

		RB						
		RB.CA.fe-lv-ctrl_uxus	RB.LV.48vs_uxus	RB.HV.main_uxus	RB.OF.fre-ex_uxus	RB.OF.lb_uxus	RB.OF.sc_uxus	RB.CA.lb-lv-ctrl_uxus
Responsable person		*Piccolo/Paolucci*	*Piccolo/Paolucci*	*Piccolo/Paolucci*	*Kudla/Doroba*	*Kudla/Doroba*	*Kudla/Doroba*	*Piccolo/Doroba*
Status of the only cable		*defined*	*defined*	*defined*	*to be verified*	*to be verified*	*to be verified*	*defined*
Cable's diameter	[mm]	10	18.6	40	10	16	10	10
Bend radius	[mm]		120	250				
Weight	[g/m]					150	150	
Producer-Supplier		CERN STORE	CERN STORE					CERN STORE
Type		04.21.51.550.4	04.08.82.160.2					04.21.51.550.4
Cable description		RS 25X2 x 0.088mm2	2x 18mm2 +screen		2 fibers	36 + 30 for tech TR (?)	8 ribbon x 12 fibers	RS 25X2 x 0.088mm2
Dis. power (worst)	[W/m]	-		-	-	-	-	-
Installation's kind		*CU-sgn*		*HV*	*Fiber*	*Fiber*	*Fiber*	*CU-sgn*
From *UXC55's crates or PPanel*		ft's PP	ft's PP	ft's PP:	lw rk's PP:	ft's PP:	ft's PP:	ft's PP
name in 'RACKs LAYOUT'		RB LV	RB LV	RB HV	RPC TTCoc	RPC - TR & SC fibers	RPC - TR & SC fibers	RB LV
		↓	↓	↓	↓	↓	↓	↓
To *USC55's rack position*		Zone S1- H02:07	Zone S1- ---	Zone S1- H02:07	Zone S1 - E01	Zone S1 - F01:08	Zone S1 - -##	Zone S1 - ---
crates or PPanels		RPC LV's SY1527	RPC LV's MACISTE	RPC B HV	TTC Opt. Cpl.	RPC Trig + Tech Trig	? - *TO BE SPECIFIED*	---
Q.ty needed links / Wheel					2	12x5	1	
spares					2	2x6	inside the main cable	
COMMENT		max 1 → 6 LV EASY crates 1x DAISYCHAIN for LV FE / wheel cheap- max 100m	1x TOWER serving ALL RPC LV crates SCREENED		singlemode	all same length !! 850[nm], m.mode, 1600 Mbps max length (Lb-USC) 90m	Trig. tunnels is preferible singlemode	max 1 → 6 LV EASY crates 1x DAISYCHAIN for LV LBC / wheel cheap- max 100m
W0								
N. cables on W0		1	2	12	2	2	1	1
spares to be installed		0	0	0	0	0	0	0
Estimated medium length	[m]	115	115	100	70	70	100	115
TOT. LENGTH with spares	[m]	115	230	1200	140	*140*	*100*	115
SPLIT POINT in CENTRAL WHEEL		X2's PP (or lw rack?)	Cavern PP's X2	Cavern X2's PP	DIRECT lw rack	Cavern X2's PP	cavern near PP's X2	X2's PP (or lw rack?)
W±1								
N. cables on W±1		1	2	12	2	2	1	1
spares to be installed		0	0	0	0	0	0	0
Estimated medium length	[m]	100	100	100	70	70	100	100
TOT. LENGTH with spares	[m]	100	200	1200	140	*140*	*100*	100
W±2								
N. cables on W±2		1	2	12	2	2	1	1
spares to be installed		0	0	0	0	0	0	0
Estimated medium length	[m]	100	100	100	70	70	100	100
TOT. LENGTH with spares	[m]	100	200	1200	140	*140*	*100*	100
ALL 5								
N. cables on all WHEELS		5	10	60	10	10	5	5
spares to be installed								
TOT. LENGTH with spares	[m]	515	1030	6000	700	700	500	515
SPLIT POINT in external WHEELS		feet lev. (or lw rack?)	feet lev.	feet lev.	DIRECT lw rack	feet lev.	feet lev.	feet lev. (or lw rack?)

LB fibres not yet checked.

Names Legenda

The UPPER CASE initial part follows the CMS' Dbase guidelines.
- LV: power supply
- HV: power supply
- CA: copper signal
- OF: Optical Fiber

The _uxus ending part means the the cable start in UXC55 and end in USC55.

The lower case part before the _uxus postfix comes from the MU local name.

FROM/TO Legenda
- JB: Junction Box
- MB: Muon DT Barrel
- MC: MiniCrate
- PC: Patch Connector
- PP: patch panel
- RB: RPC Barrel
- SB: Split Board

- ft: foot (or cavern X2 for W0)
- rk: rack
- lw rk: lowest rack
- ylk: yoke

~:	21	cables
~:	0	spares
~:	2.0	[Km]
~:	21	cables
~:	0	spares
~:	2.0	[Km]
~:	21	cables
~:	0	spares
~:	2.0	[Km]
~:	105	cables
~:	0	spares
~:	10.0	[Km]

MB Cables fully inside UXC55

SPARE GENERAL POLICY
The minimal set....
- all leads and screens shall be earthed on both ends

THIS IS TO BE APPROVED !!!

SUMMARY of Muon Barrel - Cables to b

		MB.CA.lv-ctrl_ux	MB.LV.48vs_ux	MB.LV.hv_ux	MB.CA.hv-ctrl_ux
	Responsable person	*Willmott*	*Willmott*	*Borsato*	*Borsato*
	Status of the only cable	*defined*	*defined*	*defined*	*defined*
	Cable's diameter [mm]	12.7	10.8	17.4	9.6
	Bend radius [mm]		70	210	115
	Weight [g/m]			489	104
	Producer-Supplier	CERN STORE	CERN STORE	Novacavi	Novacavi
	Type	04.21.22.750.9	04.08.82.040.2	16A1967	P0784_03-2
	Cable description	RF 2X25 AWG 28	RS 2x4 mm2	RS-8p	RS-4p
	Dis. power (worst) [W/m]	-		0.5 W/m	-
	Installation's kind	*CU-sgn*	*PS*	*PS*	*CU-sgn*
	From *(Towers' crates or PPanels)*	rk's crate:	rk's crate:	rk's PP:	rk's PP:
	name in 'RACKs LAYOUT'	DT LV	DT LV	DT HV PP	DT HV PP
	To *(Towers' crates or PPanels)*	ft's PP	ft's PP	ft's PP:	ft's PP:
	name in 'RACKs LAYOUT'	MB LV	MB LV	DT ft - HV PP	DT ft - HV PP
	Q.ty needed links / Wheel spares			50 x 2 x (1t)	50 x (1t)
	COMMENT	max 1 → 6 LV EASY crates 2x DAISYCHAIN for DT LV / wheel	1x DT LV crate + AC-DC converter (in the worst case)	1 → 4 A877 8x2xawg15 - no sensing	1 → 4 A877 4x2xawg24
W0	N. cables on W0	4	12	0	0
	spares to be installed	0	0	0	0
	Estimated medium length [m]	16	10		
	TOT. LENGTH with spares [m]	64	120		
W±1	N. cables on W±1	4	12	12	12
	spares to be installed	0	0	0	0
	Estimated medium length [m]	16	10	20	20
	TOT. LENGTH with spares [m]	64	120	240	240
W±2	N. cables on W±2	4	12	12	12
	spares to be installed	0	0	0	0
	Estimated medium length [m]	16	10	20	20
	TOT. LENGTH with spares [m]	64	120	240	240
ALL 5	N. cables on all WHEELS	20	60	48	48
	spares to be installed	0	0	0	0
	TOT. LENGTH with spares [m]	320	600	960	960

They are all defined and accepted by TIS

MB Cables fully inside UXC55

LB fibres not yet checked.

SPARE GENERAL POLICY
The minimal set....
- all leads and screens shall be earthed on both ends

SUMMARY of Muon Barrel - Cables to be installed by cern's teams fully inside UXC55 but not 'on detector'

		RB										
		RB.CA.fe-lv-ctrl_ux	RB.LV.fe-48vs_ux	RB.OF.ctr_ux	RB.OF.ttc-oc_ux	RB.OF.[illegible]_ux	RB.OF.sc_ux	RB.CA.sc-ccu_ux	RB.LV.lb_ux	RB.CA.lb-lv-ctrl_ux	RB.LV.lb-48vs_ux
	Responsable person	*Piccolo*	*Piccolo*	*Ranieri/Loddo*	*Doroba*	*Doroba*	*Doroba*	*Doroba*	*Doroba*	*Piccolo/Doroba*	*Piccolo/Doroba*
	Status of the only cable	*defined*	*defined*	*to be verified*	*to be verified*	*to be verified*	*to be verified*	*to be verified*	*to be verified*	*defined*	*defined*
Cable's diameter	[mm]	12.7	10.8		6				8.3	12.7	10.8
Bend radius	[mm]		70						45		70
Weight	[g/m]								130		
Producer-Supplier		CERN STORE	CERN STORE							CERN STORE	CERN STORE
Type		04.21.22.750.9	04.08.82.040.2							04.21.22.750.9	04.08.82.040.2
Cable description		RF 2X25 AWG 28	RS 2x4 mm2			single fiber	ribbon (12 fib.) cable		RS-2x2.5+2x.22	RF 2X25 AWG 28	RS 2x4 mm2
Dis. power (worst)	[W/m]	-			-	-	-	-	2.6	-	
Installation's kind		*CU-sgn*	*PS*	*Fiber*	*Fiber*	*Fiber*	*Fiber*	*CU-sgn*	*PS*	*CU-sgn*	*PS*
From *(Towers' crates or PPanels)*		rk's crate:	rk's crate:	rk's crate:	rk's crate:	rk's crate:	lw rk's crate:	rk's crate:	rk's crate:	rk's crate:	rk's crate:
name in 'RACKs LAYOUT'		RPC LV FE	RPC LV FE	RPC LBC	RPC LBC	RPC LBC	lw RPC LBC	RPC LBC	RPC LBC	RPC LV LBC	RPC LV LBC
To *(Towers' crates or PPanels)*		ft's PP	ft's PP	ft's PP:	lw rk's PP:	ft's PP:	ft's PP:	rk's crate:	rk's crate:	ft's PP	ft's PP
name in 'RACKs LAYOUT'		RB LV	RB LV	RPC - TR & SC fibers	RPC TTCoc	RPC - TR & SC fibers	RPC - TR & SC fibers	RPC LBC	RPC LV LBC	RPC LV LBC	RB LV
Q.ty needed links / Wheel				1 fiber each TR rack	12 x2	12x5		2x 4 (rack-rack)	4 ch A3016 x 12 LBc		
spares											
COMMENT		max 1 → 6 LV EASY crates 1x DAISYCHAIN for LV FE / wheel	1 x RPC LV FE crate + AC-DC converter (in the worst case)	Have all same lenght ? Technical Trigger	Have all same lenght ? singlemode only 4+4 crates have outer cabl	All have same lenght! CERN STORE NOT blue colored	singlemode	circular daisy-chain	1 LV LBC crate/tower max 1 → 6 LV EASY crates Only 4 LBC/tower need long cables 4 cables / LBC 1 DAISY for LV LBc	1 x RPC LV LBC crate --> 1x tower	
W0 N. cables on W0		4	4	6	16	60	2	8	32	2	2
spares to be installed											
Estimated medium length	[m]	20	20	20	13	20	15	10	10	25	20
TOT. LENGTH with spares	[m]	80	80	120	208	1200	30	80	320	50	40
W±1 N. cables on W±1		4	4	6	16	60	2	8	32	2	2
spares to be installed											
Estimated medium length	[m]	20	15	15	13	20	15	10	10	25	15
TOT. LENGTH with spares	[m]	80	60	90	208	1200	30	80	320	50	30
W±2 N. cables on W±2		4	4	6	16	60	2	8	32	2	2
spares to be installed											
Estimated medium length	[m]	20	15	15	13	20	15	10	10	25	15
TOT. LENGTH with spares	[m]	80	60	90	208	1200	30	80	320	50	30
ALL 5 N. cables on all WHEELS		20	20	30	80	300	10	40	160	10	10
spares to be installed											
TOT. LENGTH with spares	[m]	400	320	480	1040	6000	150	400	1600	250	160

~:	136 cables
~:	0 spares
~:	2.2 [Km]
~:	136 cables
~:	0 spares
~:	2.1 [Km]
~:	136 cables
~:	0 spares
~:	2.1 [Km]
~:	680 cables
~:	0 spares
~:	10.8 [Km]

Names Legenda

The UPPER CASE initial part follows the CMS' Dbase guidelines.
- LV: power supply
- HV: power supply
- CA: copper signal
- OF: Optical Fiber

The _rkux postfix means that cable is fully inside the UXC55's rack.
The _ux postfix means that cable is outgoing from the rack but is fully inside the UXC55.

The lower case ending part before _rkux and _ux postfixes comes from the MU local name.

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- lw rk: lowest rack
- yk: yoke

NOTES

* CMS GLIMOS says that the cables' color it's VERY IMPORTANT for safety issues.