



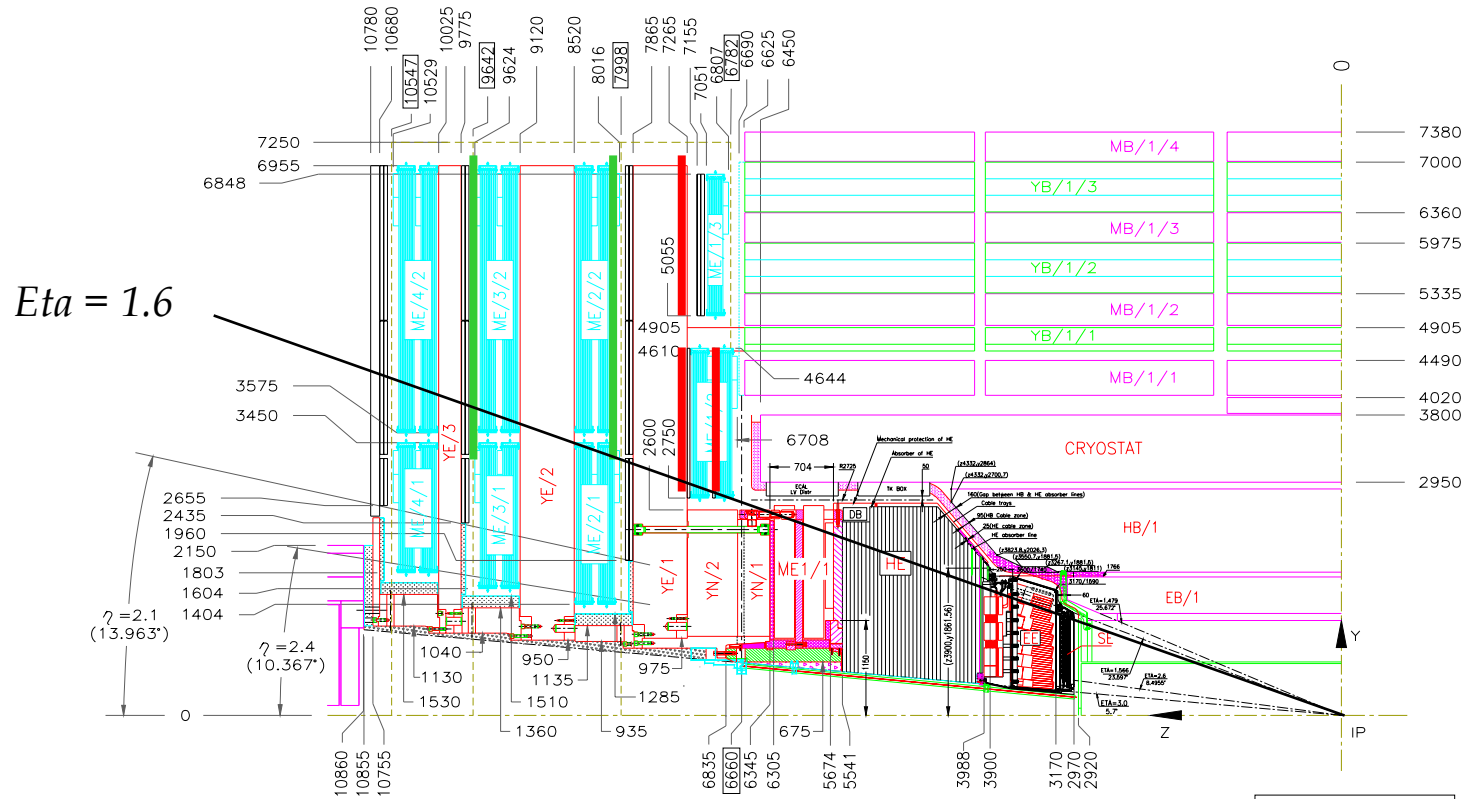
CMS End-cap RPC Service Status



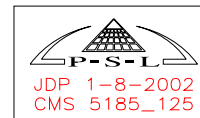
- **Services consist of**
 - HV, LV, Trigger cables, DCS, temp. Gas and Cooling
 - LBC, EASY Crates & AC-DC



The proposed initial system



Walter



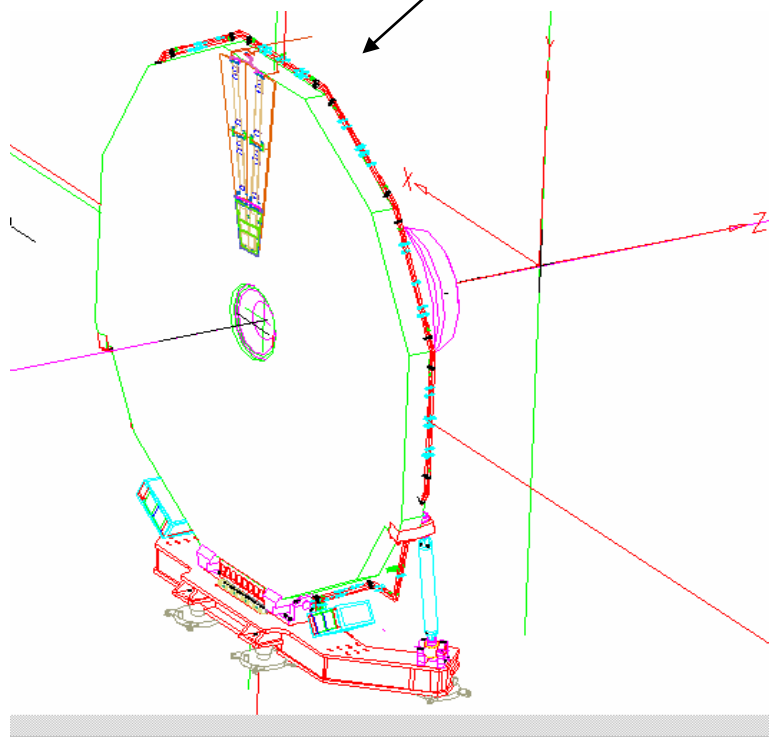
	RE 1/1	RE 1/2	RE 1/3	RE 2/1	RE 2/2	RE 2/3	RE 3/1	RE 3/2	RE 3/3	RE 4/1	RE 4/2	RE 4/3
No. of chambers	36*2	36*2	36*2	18*2	36*2	36*2	18*2	36*2	36*2	18*2	36*2	36*



Cooling Manifold on YE1 for RE1 and RE2

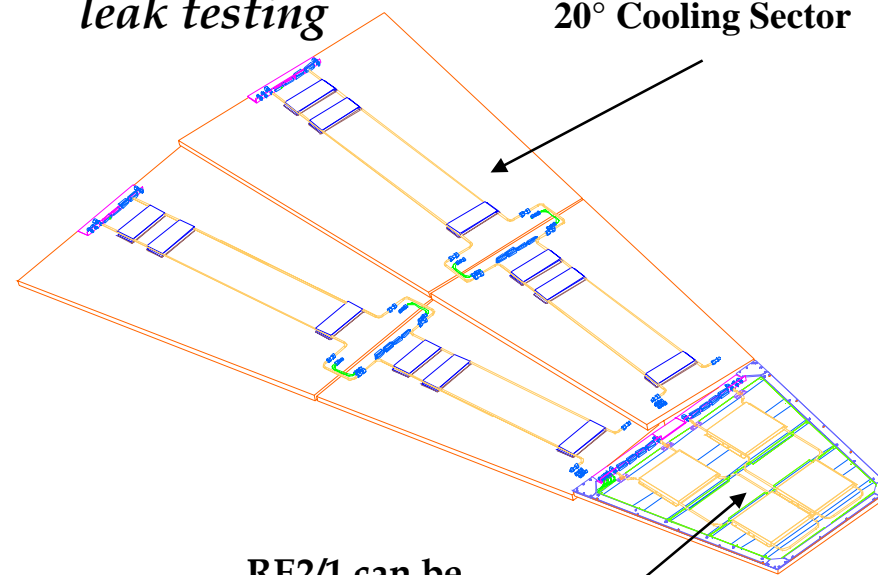


Common Manifold for Subsystems
One per Yoke



Cooling on YE+1 is complete but needs leak testing

20° Cooling Sector



RE2/1 can be 'shorted out' until it arrives, with no consequences for the initial system



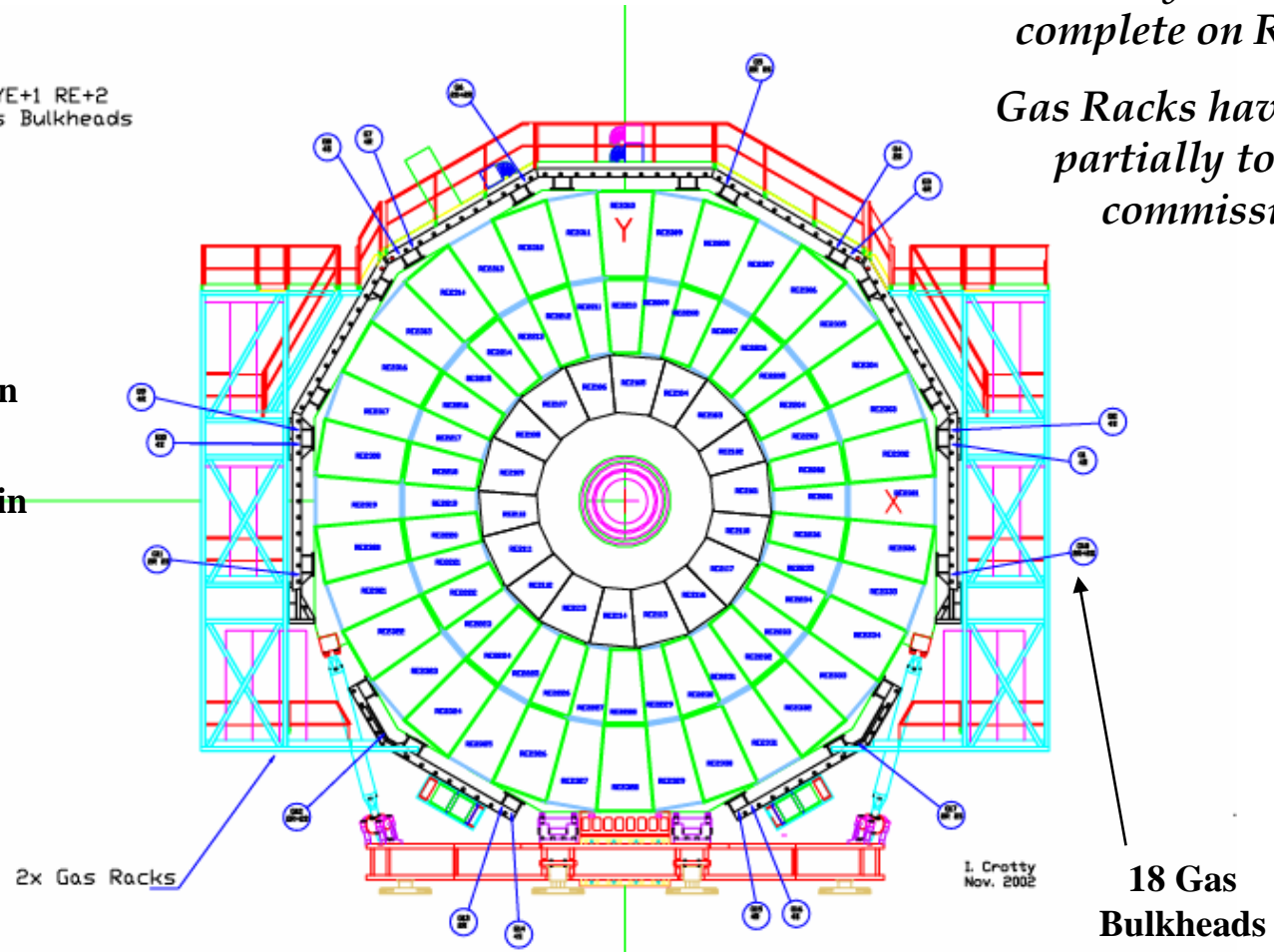
Gas Distribution



YE+1 RE+2
Gas Bulkheads

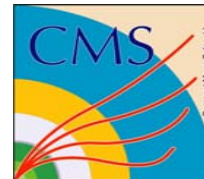
*Gas systems are all complete on RE+1,2 & 3
Gas Racks have been only partially to be fully commissioned.*

- 36 Gas Channels per station.**
- 6 Low Eta chambers in Series**
- 3 High Eta Chambers in series**





Gas Supply in Underground



**Gas and Cooling
has been laid to
RE1/1
emplacement**

**A temporary
gas supply
from the
surface is
operational**



**Once the Cable
chains have been
connected for gas in
the next few weeks
the underground is
complete and ready
for final
commissioning.**

**The SGX surface
building is not yet
ready**



Cables & Connectors



All Cables and connectors are identical with the Barrel

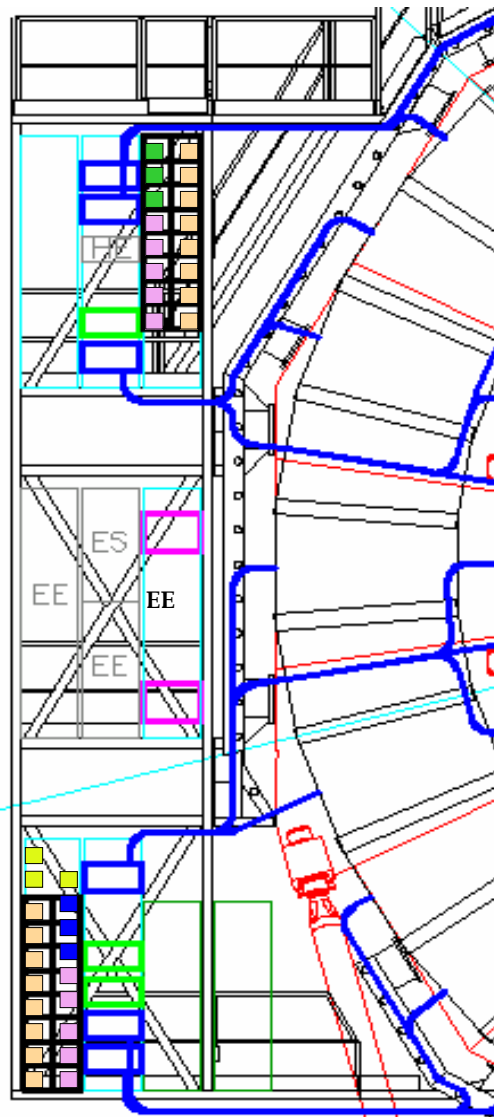
**HV Cables to Patch Panel
LV cables to 'Easy' Crates
Temperature sensor to ADC crates
Trigger and DCS Cables to LBC
Grounding to Yoke**

**From the chambers all services go to either to the
Cable Chain Patch Panels
or LBC, EASY crates (LV) and AC-DC Convertors in racks in the towers.**

**RE1/1 that is staged today has had HV, LV and Fibres installed up to the PP.
Link Board Boxes will be placed in the nose.**

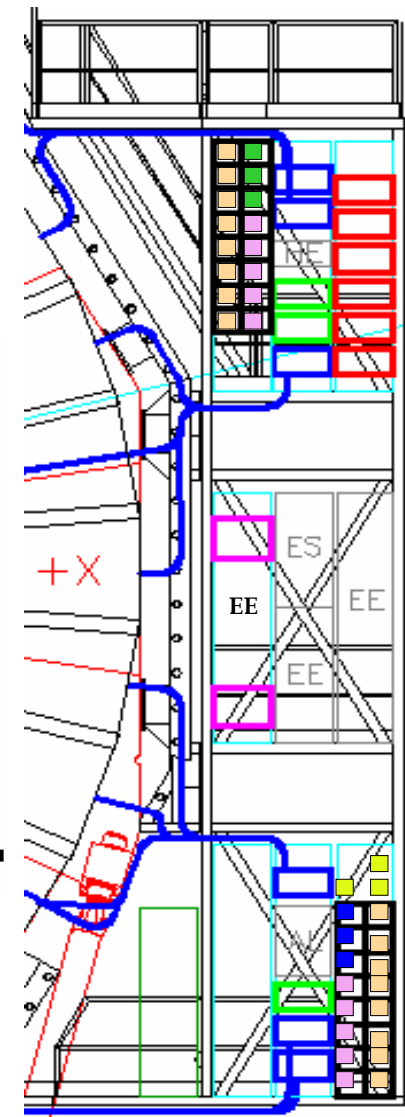


YE-1 Rack layout (13/8/04)



- RE LBB
- RE LV distr.
- ME RO
- ME HV
- LV supply

~~(8ME, 8RE, 8HE, 32EE/ES)~~
■ ■ ■ ■ ■
 (20 ME, 6 RE, 6 HE, 32 EE, 6 ES)





HV Distribution in its logical layout

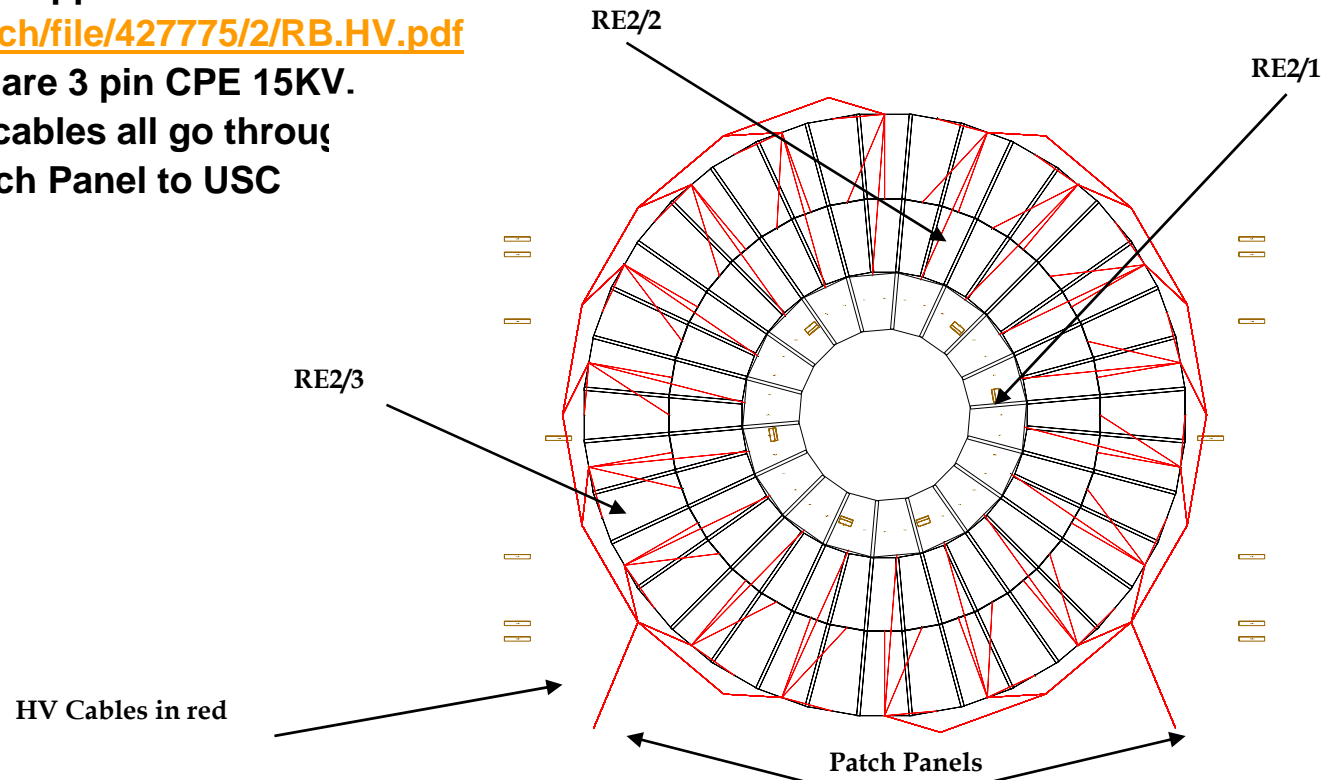


EDMS approval at

<https://edms.cern.ch/file/427775/2/RB.HV.pdf>

Connectors are 3 pin CPE 15KV.

These (756) cables all go through
the Patch Panel to USC





HV System



Cables will need terminating

Racks need filling with Adaptor Fan-in boxes and PS

HV Power Supply Racks



RE+3 Hv Cables to go into Minicables Chains

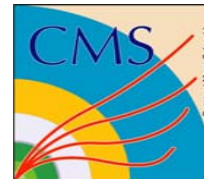


All cables have been tested before Installation





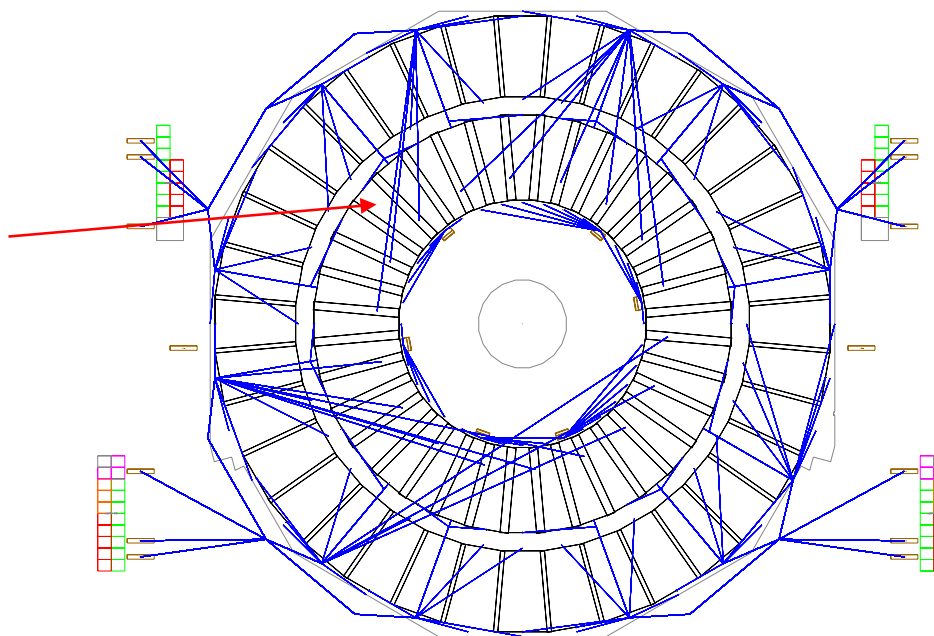
Trigger Cable



7km have been ordered for skew, fire tests
and initial installation in RE and RB
Two Cable Constructors are Novacavi
And Kabelwerk (Eupen)
<http://edms.cen.ch/file/473687/1/RB.CA.sgn.pdf>

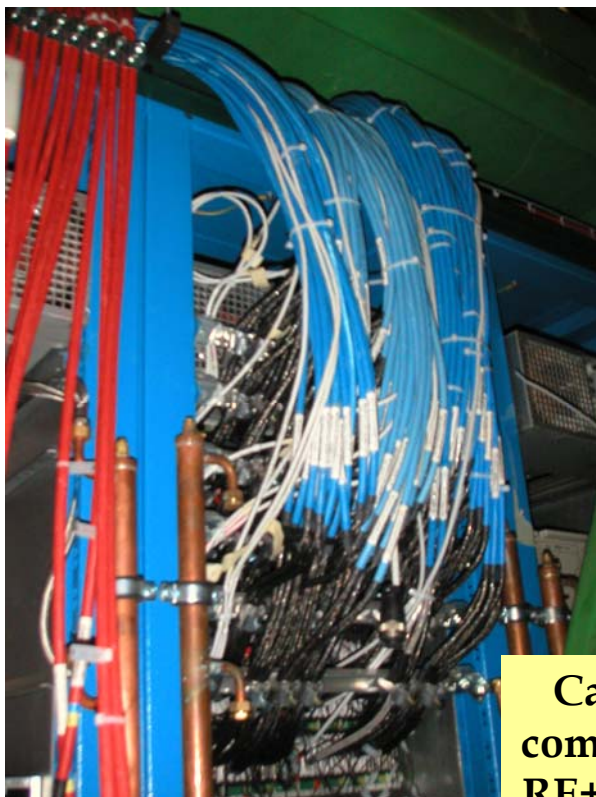
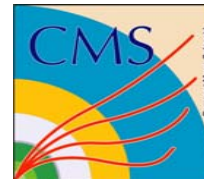
*Distribution
Scheme*

Trigger (or Signal
cables) are in
Blue



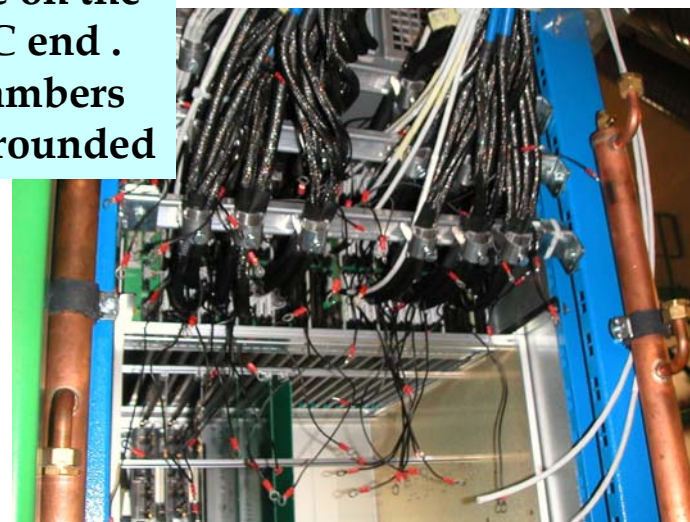


Signal Cables to LBC



Cabling is completed on RE+1, 2 and 3

No grounding has been done on the LBC end . Chambers are grounded





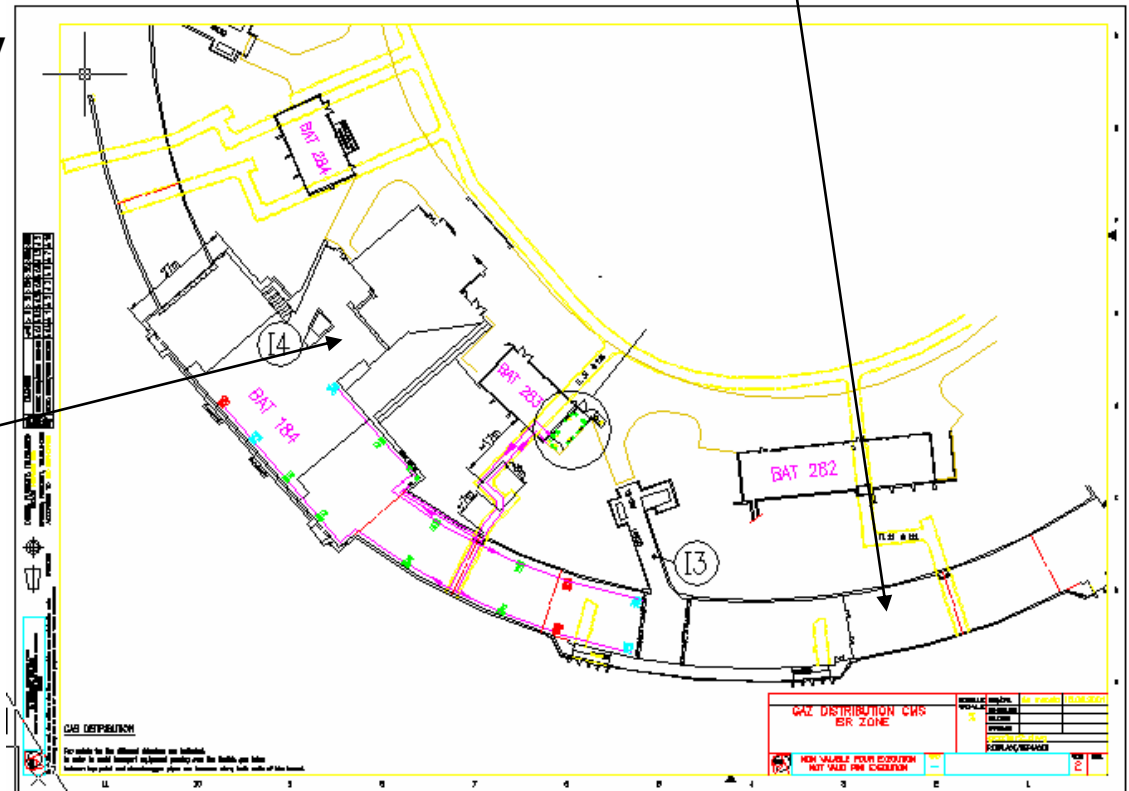
Cable Assembly and Testing



Signal cables are made by Cavitech in Switzerland. They are then tested in I3. All other Cables have been manufactured and tested by Wrs Wang in the ISR @ I4. This is a very flexible and useful setup.

I4 Clean Room and Lab
Cable assembly above

Skew Clear testing
@ I3

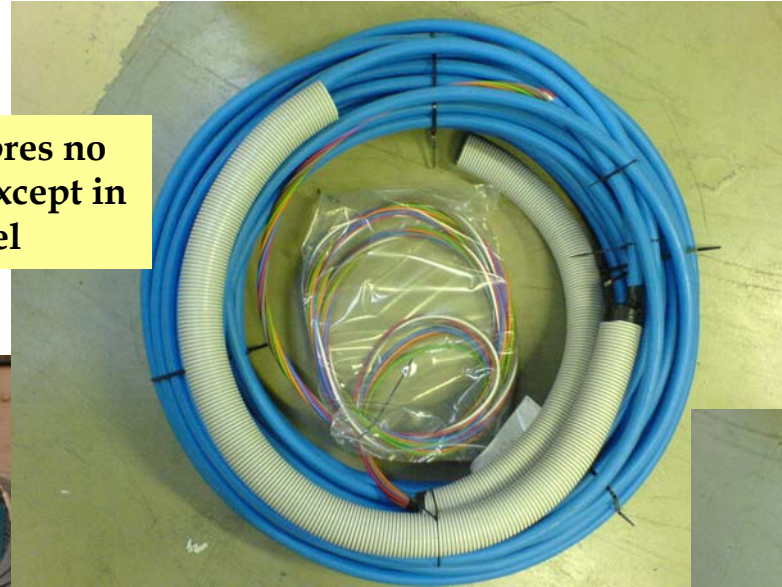




Trigger Fibres In Trigger Tunnels



**Trigger Fibres no
Protection except in
Tunnel**



**TTC fibres
Need full length
protection**



**DCS Fibres (Ericsson)
need the nds protected
as shown for ECAL**

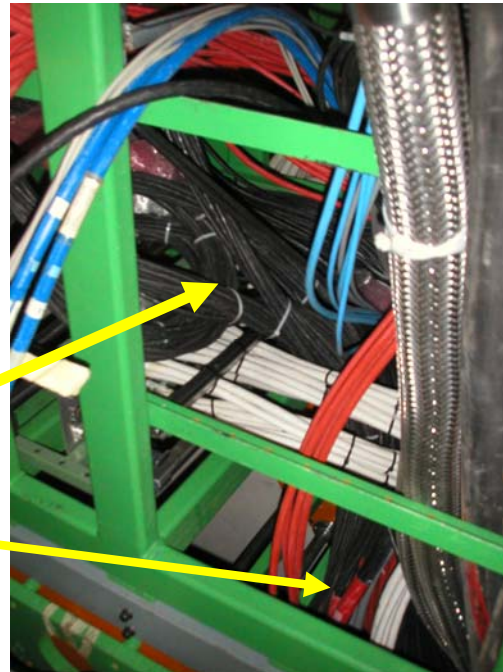


Patch Panel



HV Patch Panel

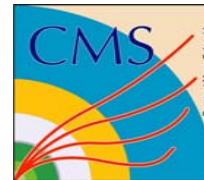
HV cables for RE+1, 2 & 3 are ready to be connected to the Multi cable from the USC. If you can find them !



Trigger fibres need protecting



Today's Status



RPC Forward Services Status

Ian Crotty 28 February 2007

	Raw mat.	RE+3/3	RE+3/2	RE+2/3	RE+2/2	RE+1/3	RE+1/2	RE+1/1	RE-1/1	RE-1/2	RE-1/3	RE-2/2	RE-2/3	RE-3/2	RE-3/3
HV	Raw mat.														
	Produced														
	Installed														
	Commissioned														
LV	Raw mat.														
	Produced														
	Installed														
	Commissioned														
DCS	Raw mat.														
	Produced														
	Installed														
	Commissioned														
Signal	Raw mat.														
	Produced														
	Installed														
	Commissioned														
Temp.	Raw mat.														
	Produced														
	Installed														
	Commissioned														
Gas Inter	Raw mat.														
	Produced														
	Installed														
	Commissioned														
Gas Bulk	Raw mat.														
	Produced														
	Installed														
	Commissioned														
Cooling Inter	Raw mat.														
	Produced														
	Installed														
	Commissioned														
Cooling manif.	Raw mat.														
	Produced														
	Installed														
	Commissioned														



Conclusion



All Piping gas and cooling on the yokes is ready for connection .

**Cables for inter Rack/Crate have to be determined
and manufactured. This is starting now.**

All installed chambers can be commissioned.

**The last Signal cables for RE-3 are ready to be ordered since lengths ,
connectors and spec are all ready.**

Some Gas Rack commissioning is complete.

Still plenty to do to get it on the road with help from all colleagues