



# RPC Barrel

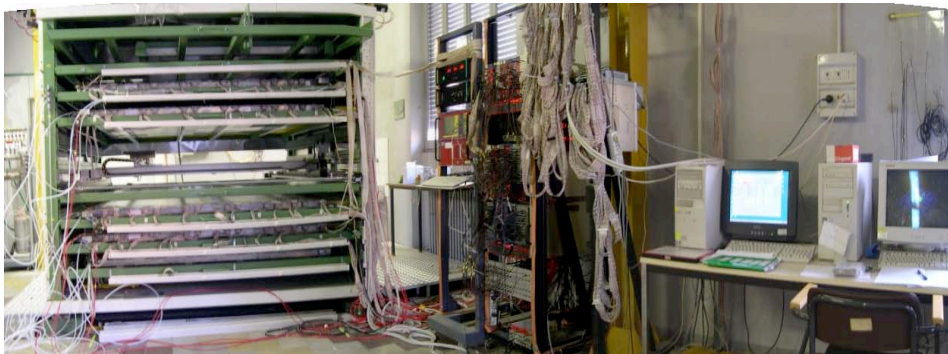
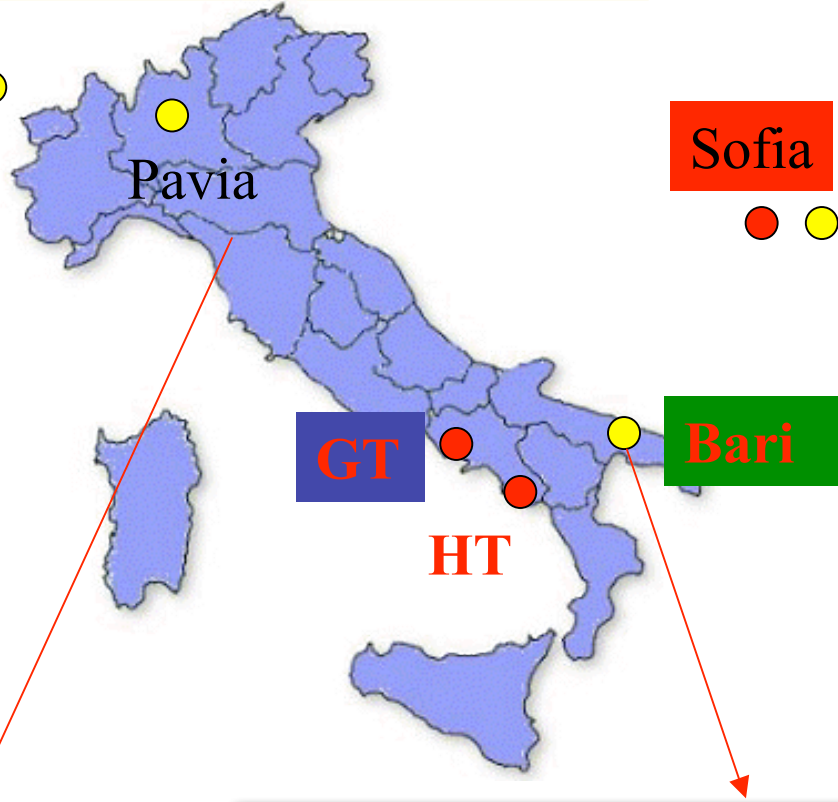
G.Pugliese- Aachen Muon Week 28-30/4/2004

CMS RPC group

All the sites are in operation

- Production site
- Test site

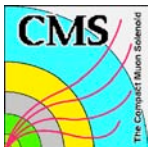
ISR





**9 chambers were built in two weeks.**

**Now under testing**



# Overview of CHAMBERS

CMS RPC  
group

	<b>W+2 W+1</b> 10 Sectors 2 ÷ 6,8 ÷ 12	<b>W 0</b> 10 Sectors 2 ÷ 6,8 ÷ 12	<b>W-2 e W-1</b> 10 Sectors 2 ÷ 6,8 ÷ 12	<b>W-2,W-1, W+2,W+1 e W0</b> Sect.1-7	Total
<b>RB1</b>	40	20	40	20	120
<b>RB2/2</b>	20	10	20	10	60
<b>RB2/3</b>	20	10	20	10	60
<b>RB3</b>	40	20	40	20	120
<b>RB4-1500</b>	12	6	12	-	30
<b>RB4-2000</b>	24	12	24	20	80
<b>RB4-2500</b>	4	2	4	-	10
<b>Total</b>	<b>160</b>	<b>80</b>	<b>160 (30)</b>	<b>80</b>	<b>480</b>
<b>Tot: done</b>	<b>102</b>	<b>40</b>	<b>11</b>	<b>3</b>	<b>156</b>

**test line**

**Production sites: quality control (current and dead strips)**



<b>Total</b>	<b>78</b>	<b>24</b>	<b>8</b>	<b>2</b>	<b>112</b>
--------------	-----------	-----------	----------	----------	------------

**Test sites: study of the chambers performance with cosmic rays**



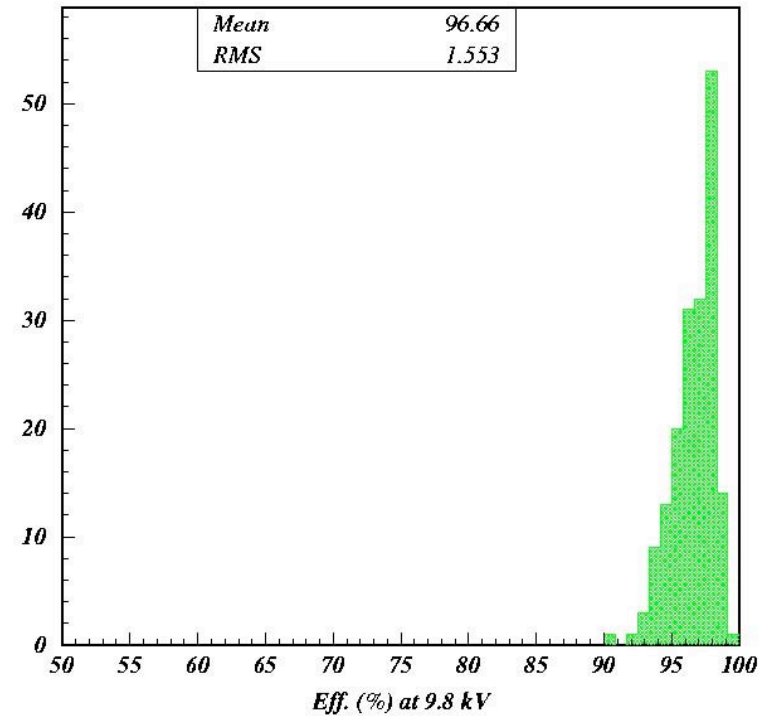
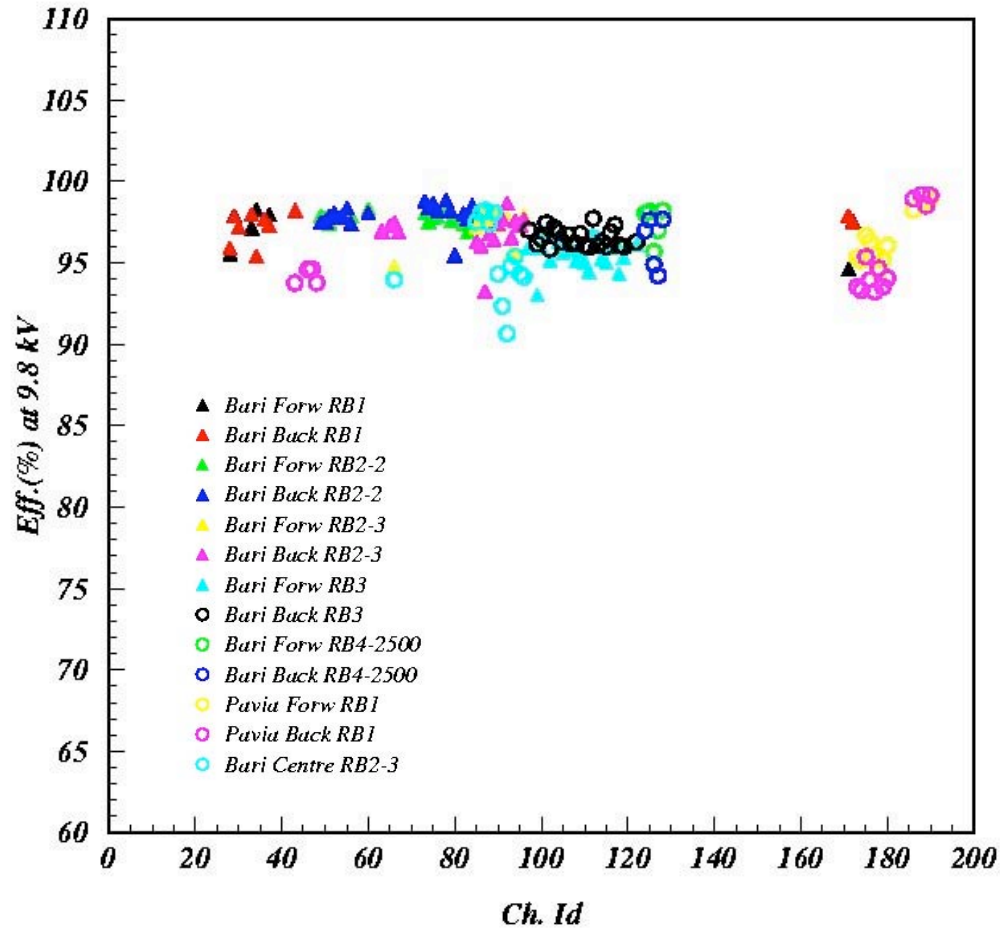
<b>Total</b>	<b>50</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>59</b>
--------------	-----------	----------	----------	----------	-----------

**ISR: long term current stability and final cosmic rays test**

# Chamber performance

TOT. 112 CH

Efficiency @ HV = 9.8kV



90 % is the minimal acceptance level

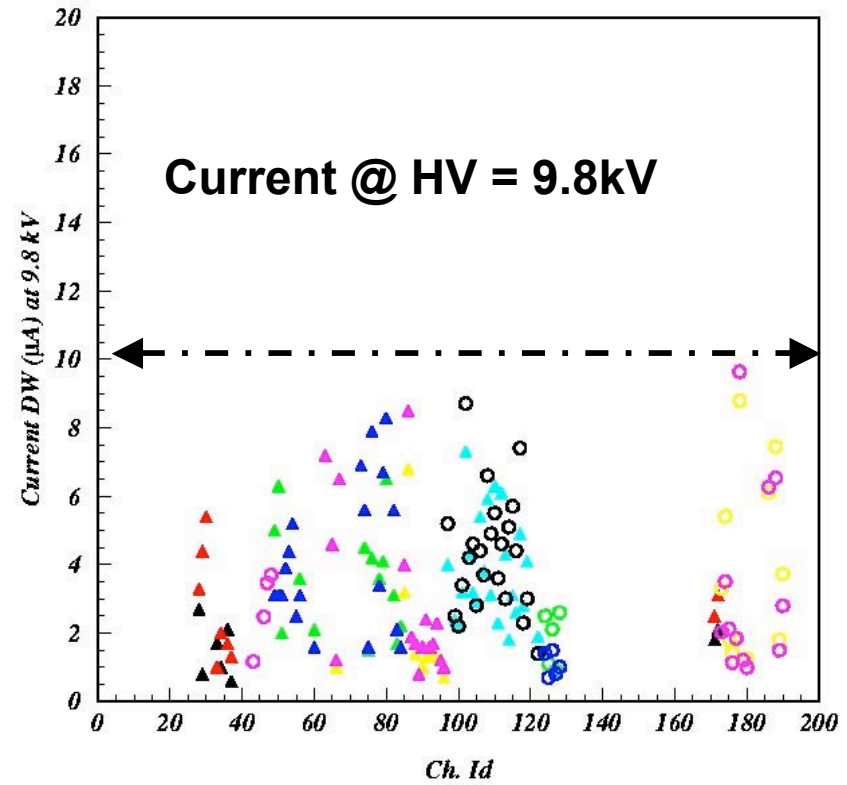
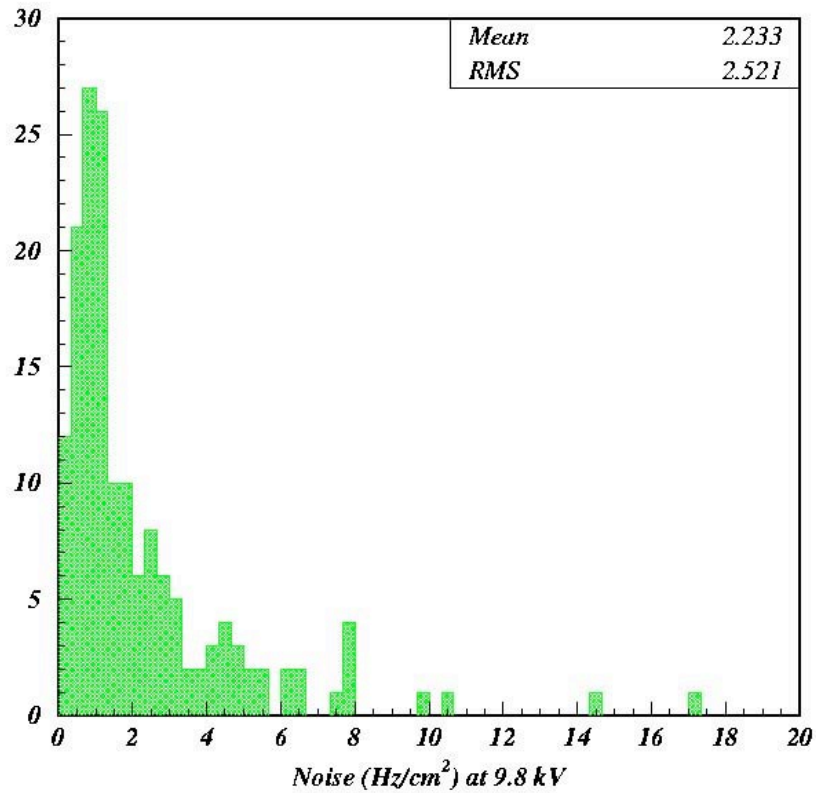
Row date in DB: increase of the efficiency with reconstruction method.





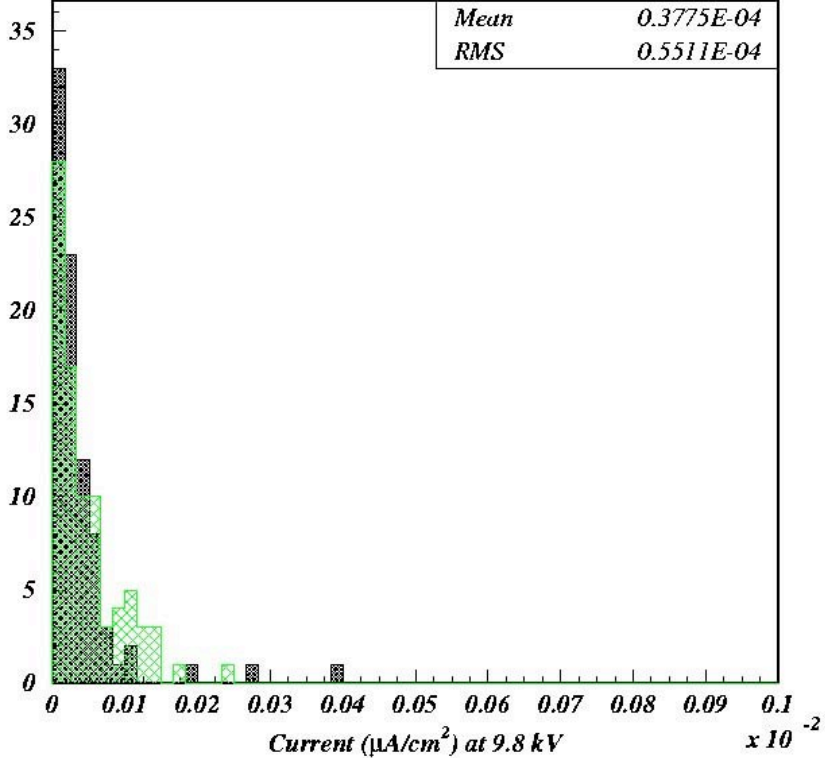
# Chamber performance

TOT. 112 CH

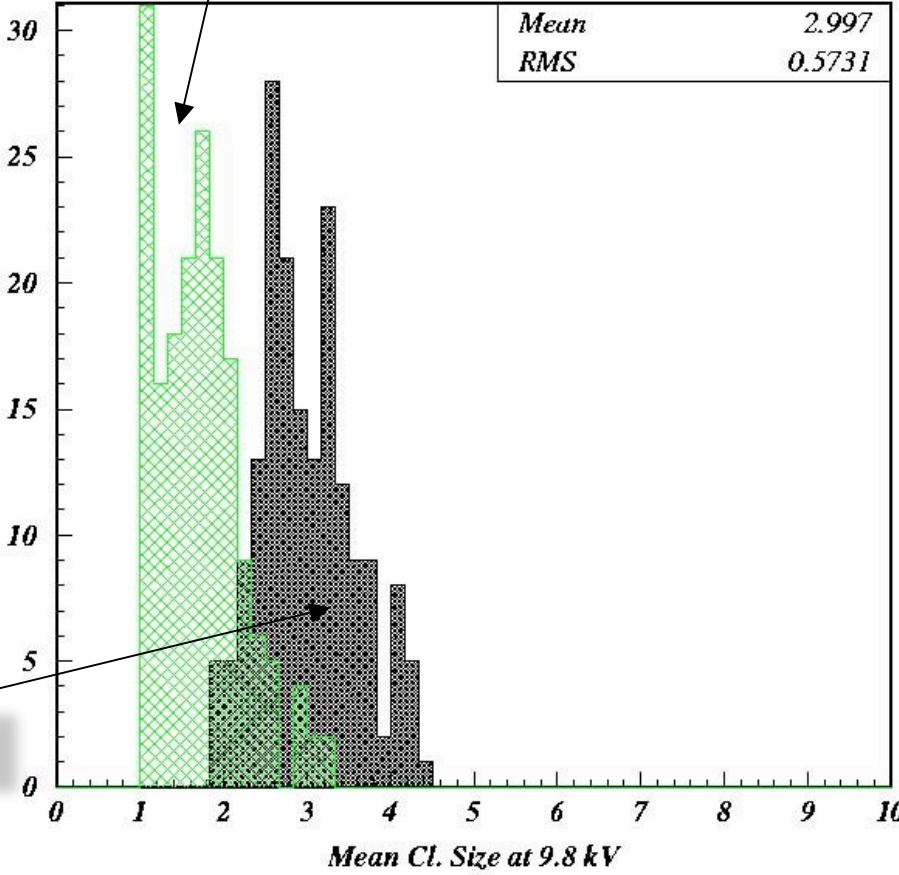


10  $\mu\text{A}$  is the maximum acceptance level

# Chamber performance



**Mean Cluster Size OUT**



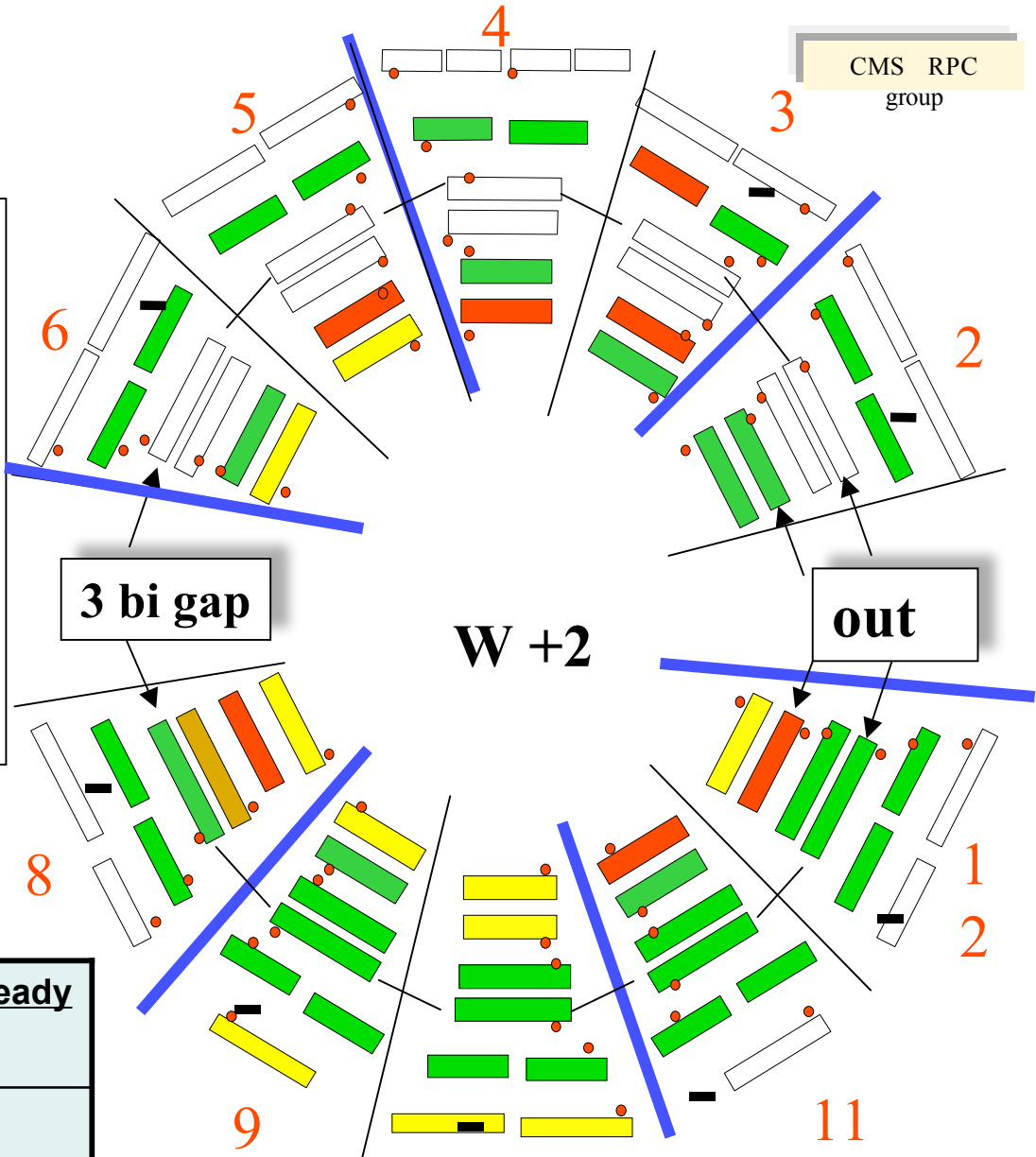
**Mean Cluster Size IN**



# W+2

CMS RPC group

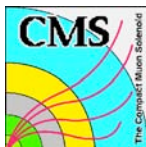
- **RB1** and **RB3** under test in Pavia and Bari. They will be sent to ISR by the end of May and June (bottom and top).
- **RB4** construction is starting in GT. Completion expected by the end of May. Sect. 4 ready in ISR in July.
- **RB2** construction, in GT, after RB4. Ready at ISR in October.



To be built	To be tested (quality cosmic test)	To be tested at ISR	Ready
28	35	45	35

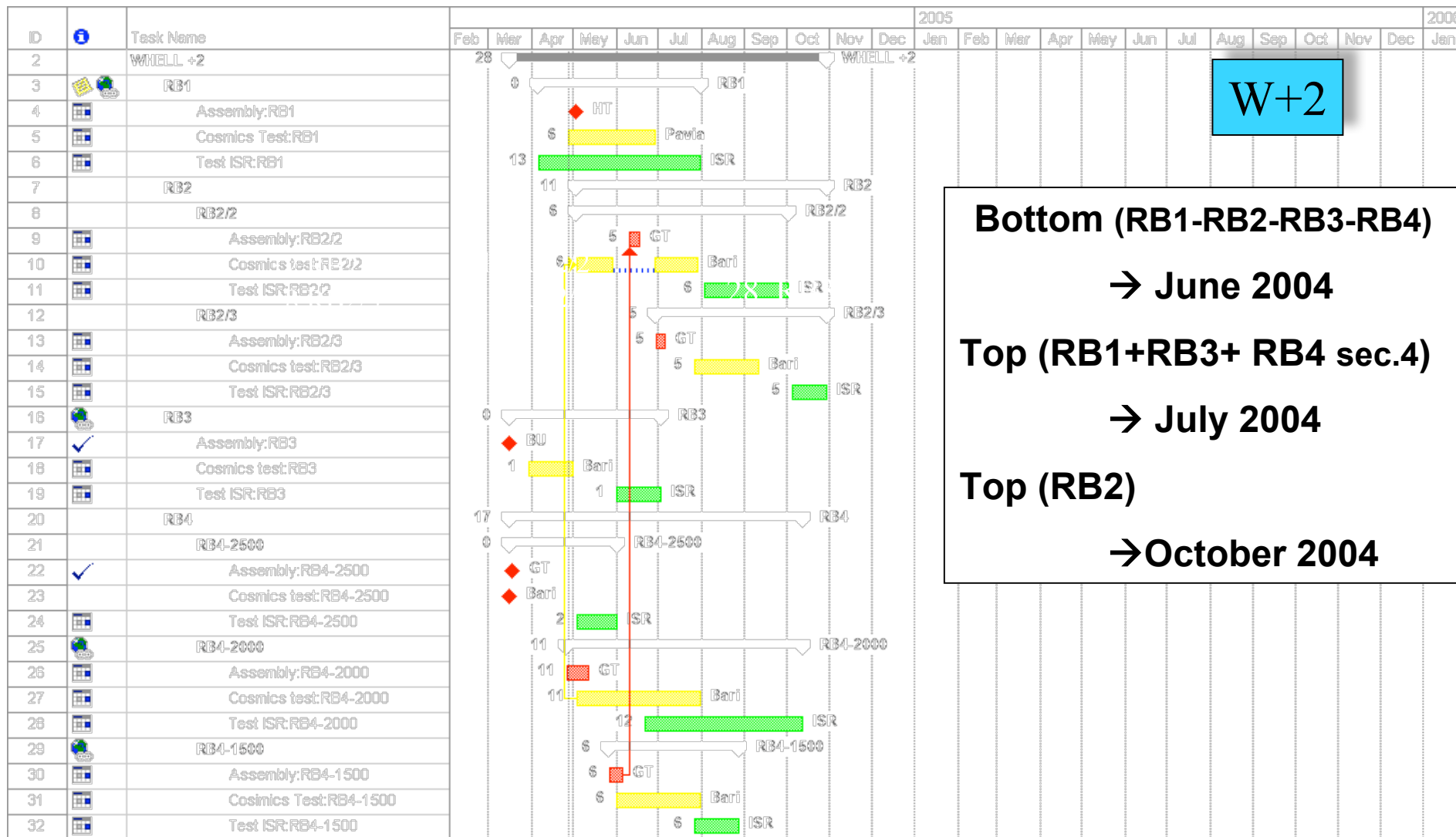
- To be built
- To be tested
- Tested
- Ready for installation
- Rejected at ISR

Z (+) Face



# Planning: production and test

CMS RPC  
group





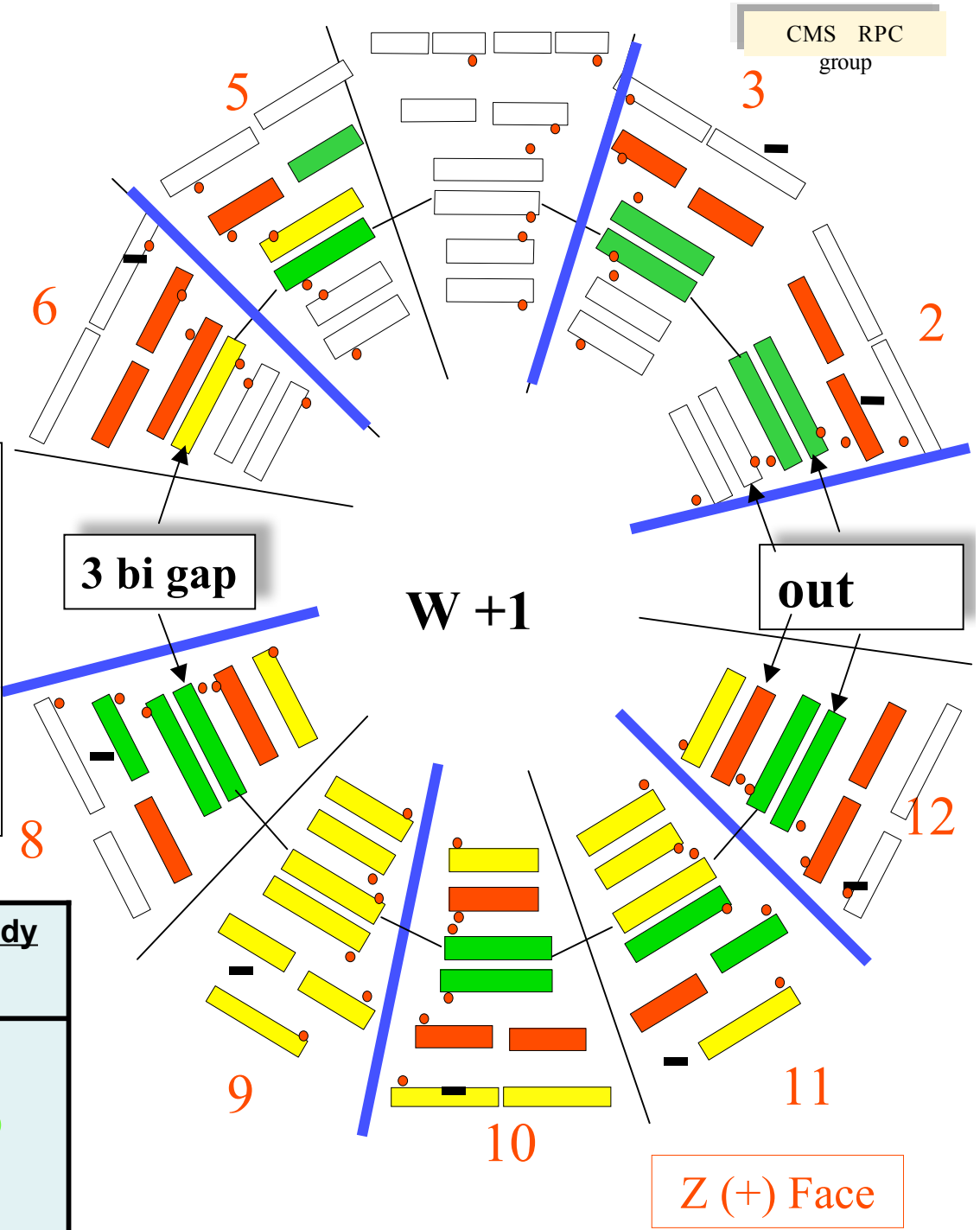


# W+1

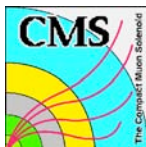
- To be built
- To be tested
- Tested
- Ready for installation
- Rejected at ISR

**Sector 4 (chimney).** Construction delayed until next year: it will be ready in March, 2005.

- **RB1** under construction at HT.
- **RB3** under test at Sofia and Bari
- **RB4** construction is starting in GT.

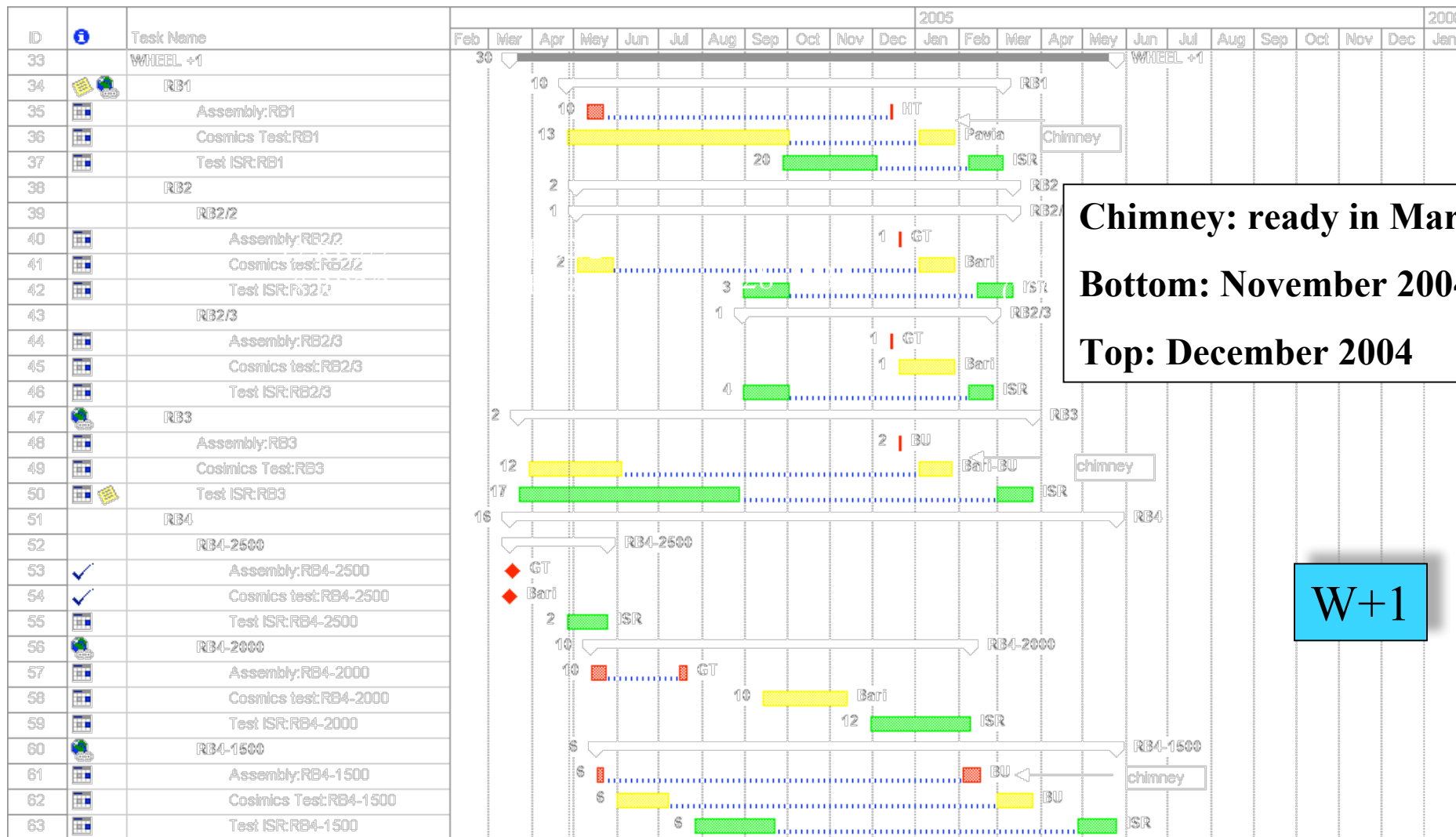


To be built	To be tested (quality cosmic test)	To be tested at ISR	Ready
<b>30</b>	<b>47</b>	<b>65</b>	<b>15</b>



# Planning: production and test

CMS RPC  
group



**Chimney: ready in March**  
**Bottom: November 2004**  
**Top: December 2004**

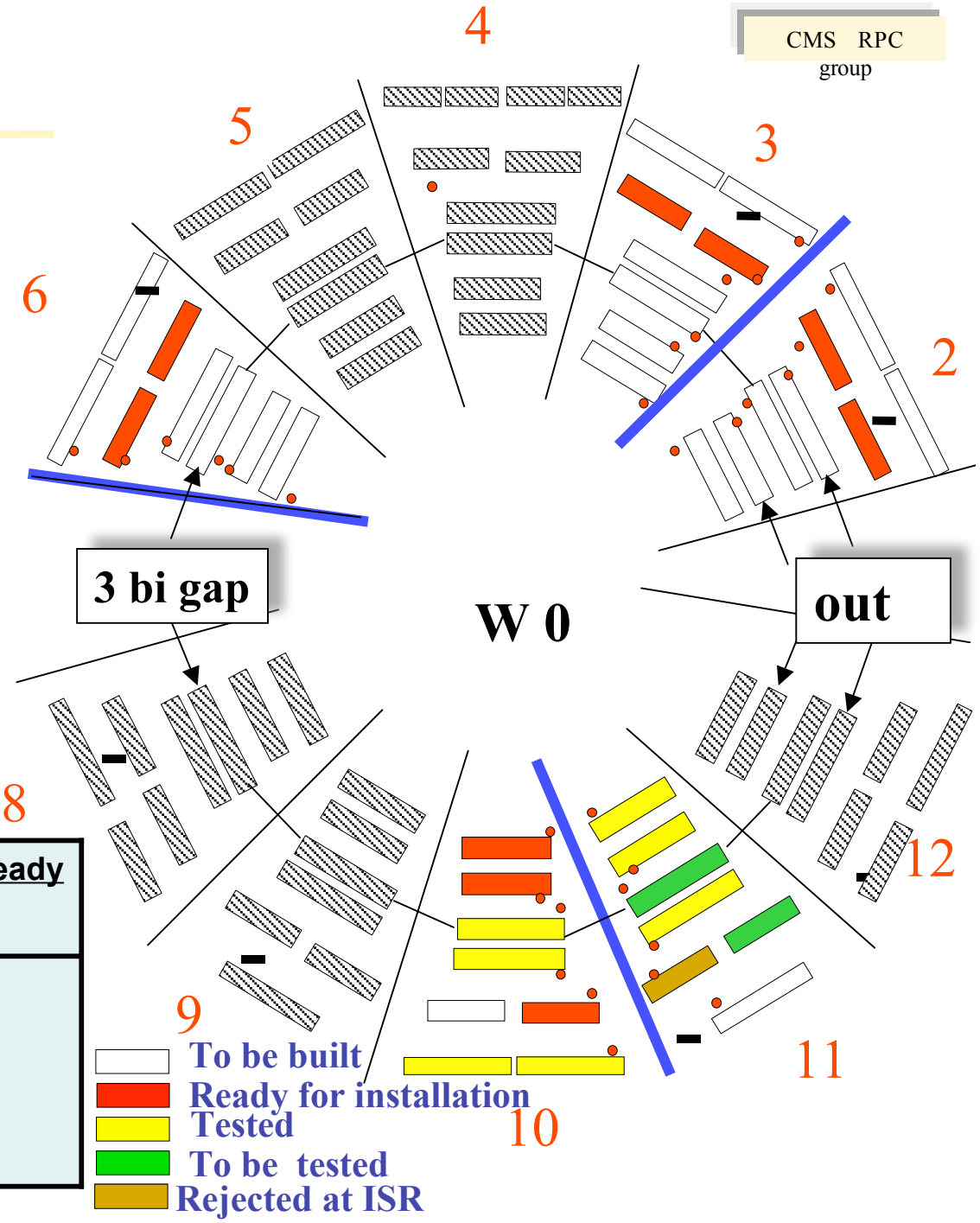
W+1



# W 0 (Z+ face)

CMS RPC group

- **RB1** under test in Pavia. Production will start at HT in June.
- **RB3** under test in Sofia and Bari.
- **RB2** construction will start at GT with RB2 W+2.
- **RB4** construction will start at GT by the end of July.



To be built	To be tested (quality test)	To be tested at ISR	Ready
21	30	37	2

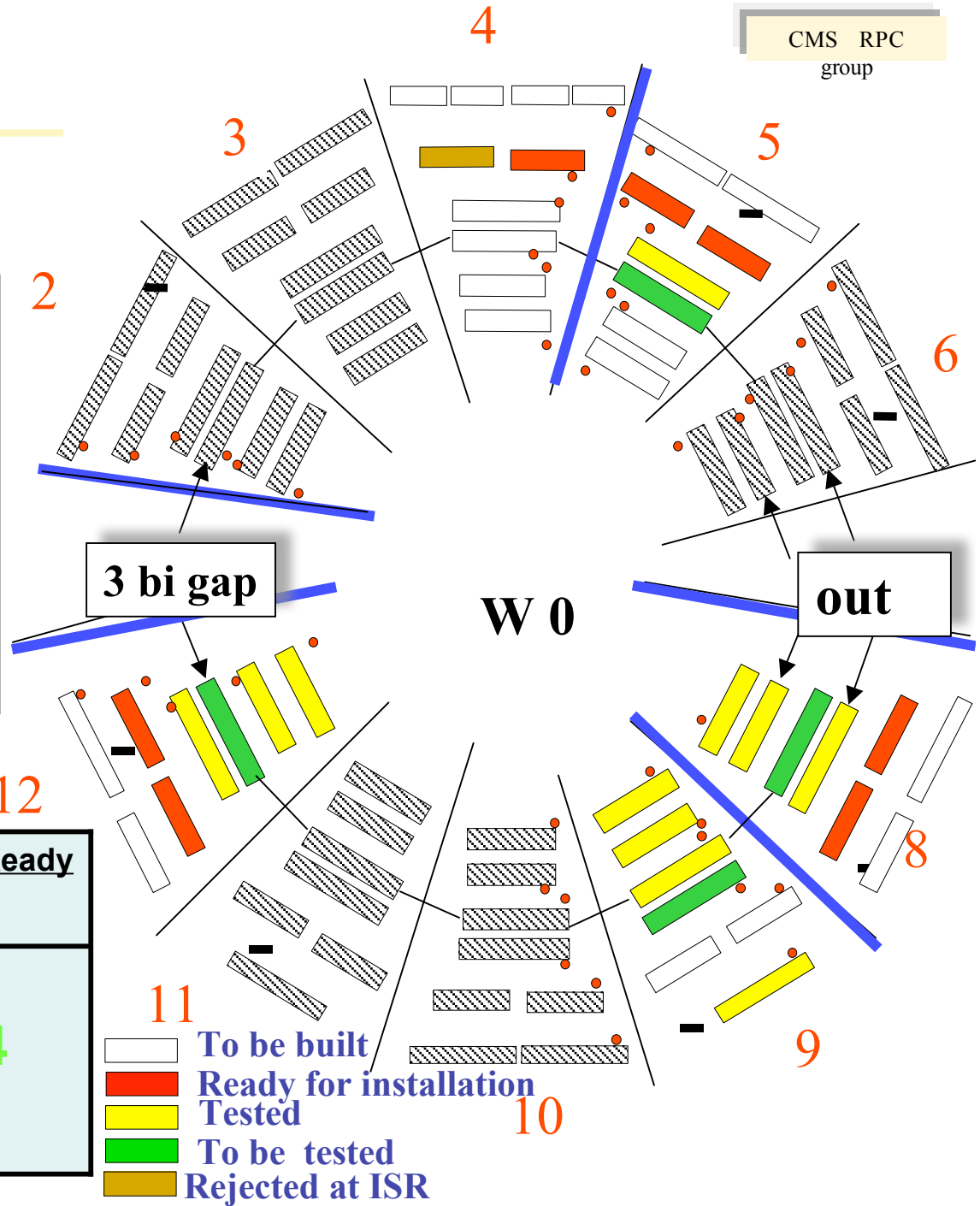
- To be built
- Ready for installation
- Tested
- To be tested
- Rejected at ISR



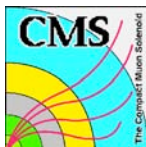
# W 0 (Z- face)

CMS RPC group

- **RB1** under test in Pavia. Production will start at HT in June.
- **RB3** under test in Sofia and Bari.
- **RB2** construction will start at GT with RB2 W+2.
- **RB4** construction will start at GT by the end of July.

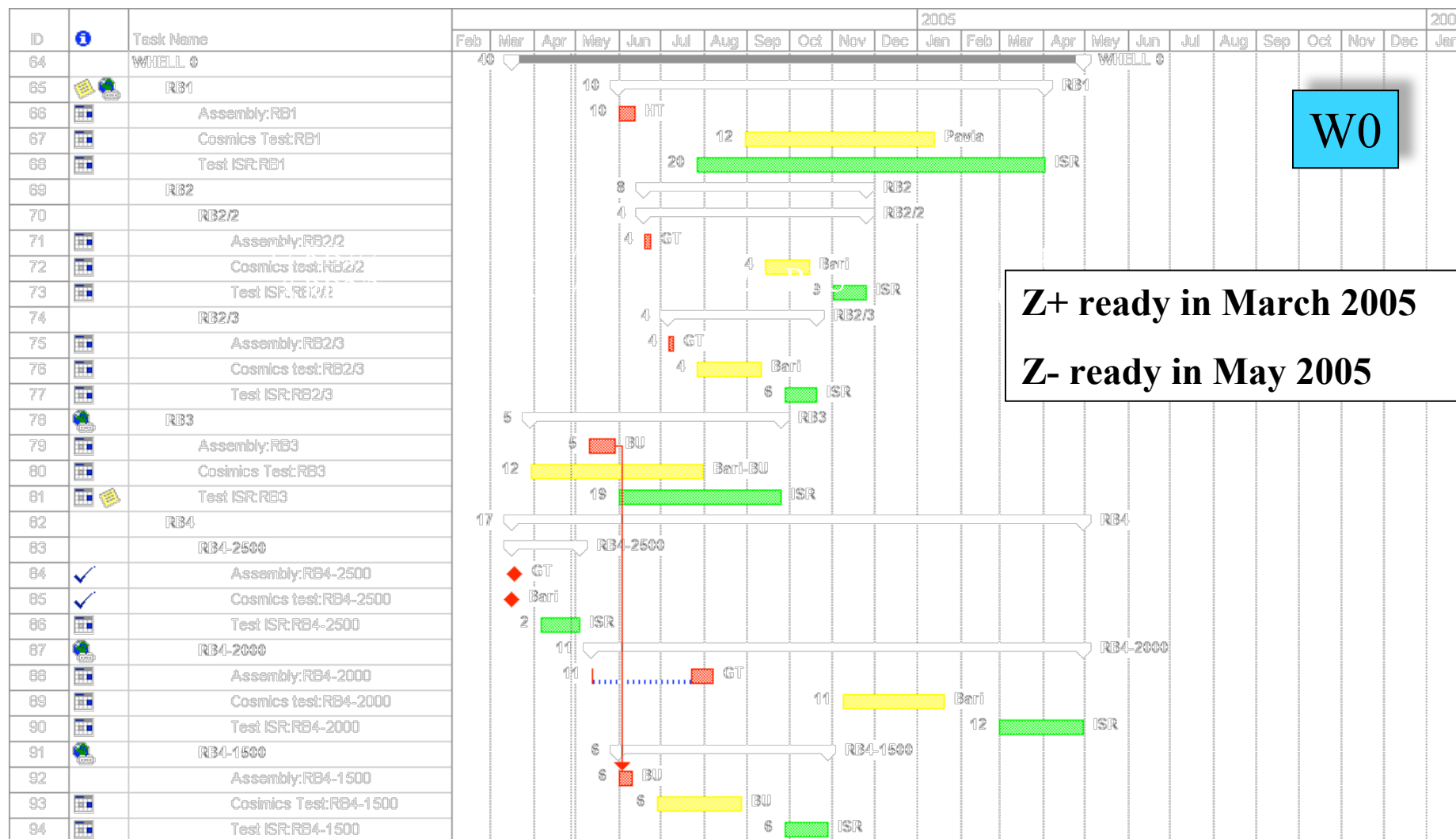


To be built	To be tested (quality test)	To be tested at ISR	Ready
19	26	37	4



# Planning: production and test

CMS RPC  
group





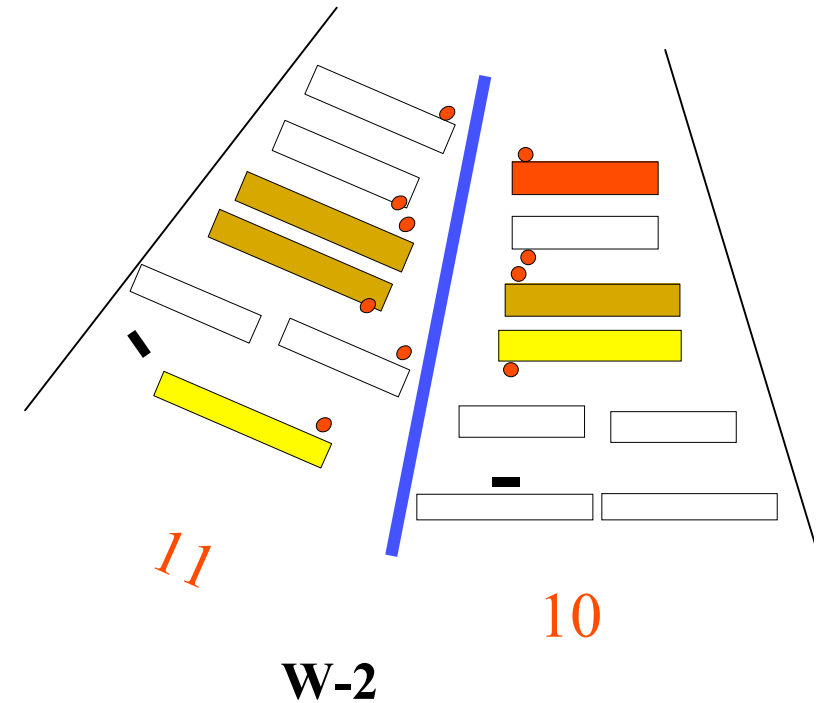
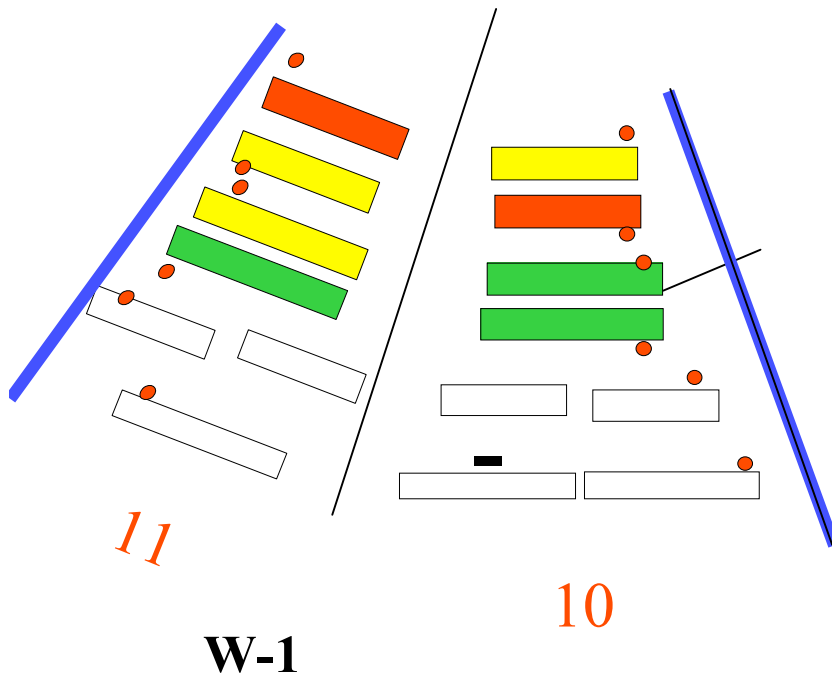


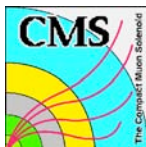
# W-1 e W -2

CMS RPC  
group

To be built	To be tested (quality test)	To be tested at ISR	<u>Ready</u>
19	22	27	3

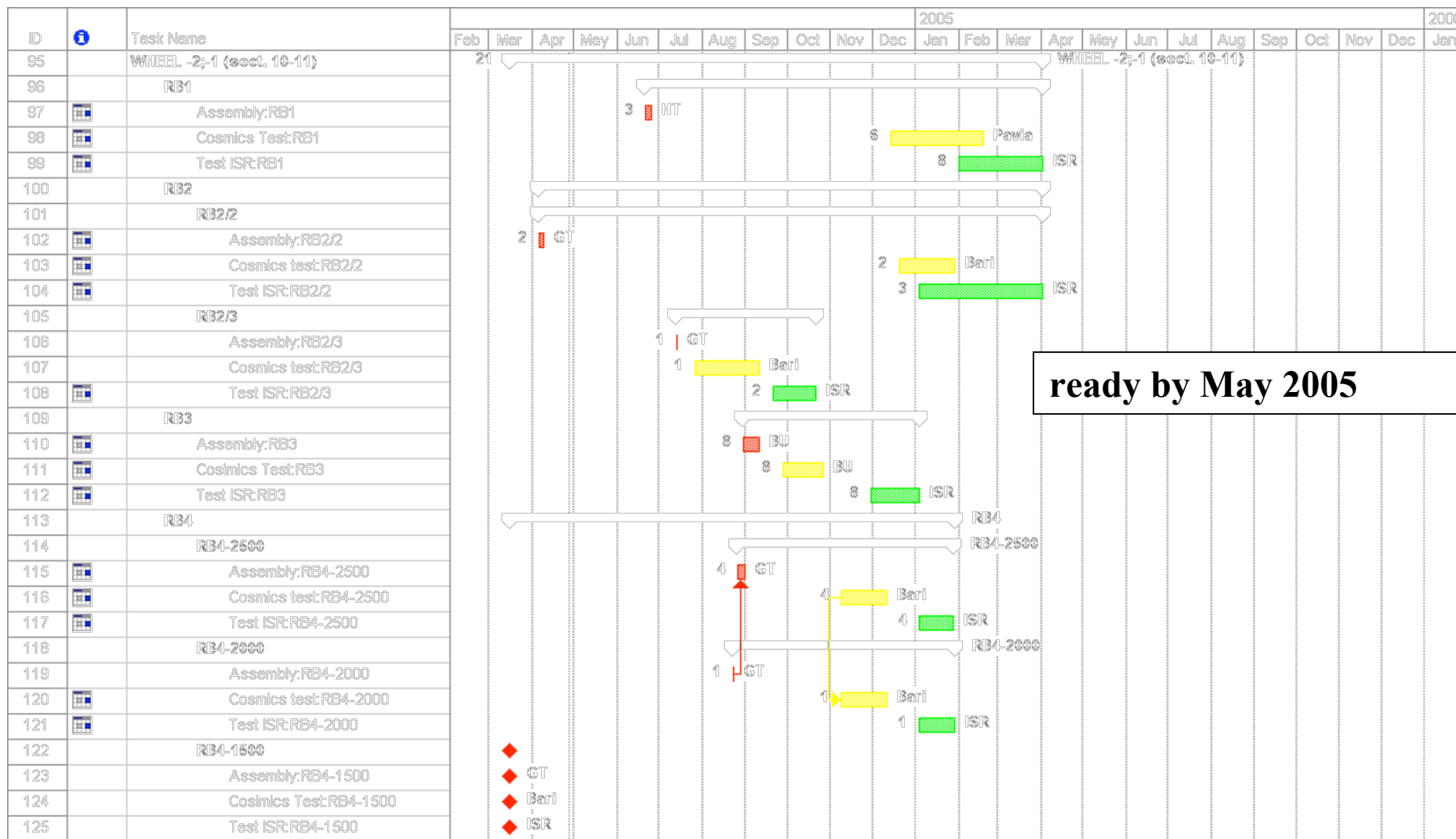
- **RB1** under test in Pavia. Production will start at HT by the end of June 2004.
- **RB3** production will start in Sofia by September 2004.
- **RB4** construction will start at GT by the end of August 2004.





# Planning: production and test

CMS RPC  
group





# Conclusion

CMS RPC  
group

## RPC installation deadline

1. W+2 (bottom): **RB1 + RB2 +RB3 +RB4 (9-10-11)** → **June 2004**
2. W+2 (top): **RB1 + RB3+ RB4 (sect.4)** → **July 2004**
3. W+2 (top): **RB2** → **October 2004**
4. W+1 (bottom): **RB1 + RB2+RB3+ RB4 (9-10-11)** → **November 2004**
5. W+1 (top): **RB1+RB2+RB3** → **December 2004**
6. W+1 (chimney) → **March 2005**
7. W0 (Z+): **RB1+RB2+RB3+RB4 (10-11)** → **March 2005**
8. W0 (Z-): **RB1+RB2+RB3+RB4 (9)** → **May 2005**
9. **W-1 e W-2: RB1+RB2+RB3+RB4** → **May 2005**