

# Cathode Production Status

CMS Week December 9<sup>th</sup> 2003

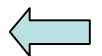
A. Benvenuti

INFN Bologna

- Shipment Nr 13 left the Custom house on December 4th
- The last tape shipment has been cleared through Customs last friday
- The last I-beam shipment is expected to be ready for shipping at the end of January (negotiating the replacement of a box of rejected extrusions accumulated in Protvino).
- MB1 cathode production is completed.
- The schedule to completion of the cathode production has been agreed. The last shipment should be ready by end of June.
- We must schedule the dismantling of the cathode production:
  - Bring back the big plotter and dishes ?
  - Store at CERN?

## Planned Shipments up to Completion

Nr	Date	PHI	MB1	MB2	MB3	CUT	Boxes	Cathodes	Cumulative
<b>0</b>	Bologna	9	1	3	3	0	16	14431	14431
<b>1</b>	04/07/01	3	1	0	0	0	4	3645	18076
<b>2</b>	30/11/01	9	1	0	0	0	10	9115	27191
<b>3</b>	19/04/02	9	2	1	0	0	12	11174	38635
<b>4</b>	06/06/02	9	1	1	1	0	12	11275	49640
<b>5</b>	29/08/02	7	1	1	3	0	12	10906	60546
<b>6</b>	06/12/02	7	2	2	1	0	12	11316	71862
<b>7</b>	07/02/03	8	1	2	1	0	12	11316	83178
<b>8</b>	06/03/03	11	1	0	0	0	12	11316	94494
<b>9</b>	24/04/03	8	1	1	2	0	12	11316	105810
<b>10</b>	17/06/03	10	1	1	0	0	12	11316	117126
<b>11</b>	24/07/03	8	3	1	0	0	12	11316	128442
<b>12</b>	20/10/03	4	0	1	1	6	12	11316	139758
<b>13</b>	17/11/03	6*	2	1	3	0	12	11316	151074
<b>14</b>	02/02/04	12	0	0	0	0	12	11316	162390
<b>15</b>	29/03/04	10*	0	1	1	0	12	11316	173706
<b>16</b>	24/05/04	12	0	0	0	0	12	11316	185022
<b>17</b>	28/06/04	7	0	0	0	0	7	6587	191609
<b>Total</b>						6	198	191609	



**MB1 Production Completed**

## Shipment Nr 13 Sharing

Box Number	Type	Length (mm)	Quantity					Total	Ship to
			Cathode	Mono	Incl.				
					MB1	MB2	CUT		
13-1	MB1	2027	916	27				943	Aachen
13-2	Phi	2368	943	0				943	Ciemat
13-3	Phi	2368	943	0				943	Legnaro
13-4	MB3	3010	943	0				943	Legnaro
13-5	Phi	2368	943	0				943	Legnaro
13-6	MB3	3010	943	0				943	Legnaro
13-7	MB1	2027	943	0				943	Aachen
13-8	MB3	3010	943	0				943	Legnaro
13-9	Phi	2368	697	0	213	0	33	943	Aachen
			697		213		33		
13-10	Phi	2368	917	0	0	0	26		Ciemat
			917				7		
13-11	Phi	2368	615	0	0	328		943	Ciemat
			615			328			
13-12	Phi	2368	902	0	0	0	61	963	Legnaro
			902				61		
Total									

Aachen:

2MB1, 1Phi

CIEMAT:

0.3MB2, 2.7Phi

Legnaro:

3MB3, 3 Phi

Note:

for mixed sizes

shorter cathodes  
at the top

## Cathode required for Entire production +19 Spares

Assembly Site	Phi SL	Theta SL	Chimneys		Cathodes Required		
			Phi	Theta	Phi	Theta	Chim.
Aachen	146	62	4	2	29200	14772	800
CIEMAT	146	62	4	2	35332	14772	968
Legnaro	142	62	8	2	41180	14772	2320
Torino	86	0	2	0	32844	0	772
Total	520	186	18	6	138556	44316	4860

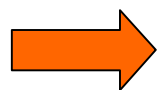
Grand total = 187732

Full Cathode production = 194 815 ~ Required  
 Phi x1.03 + Theta x 1.04 + 1 bad box

Grand Total	Aachen		CIEMAT		Legnaro		Torino
	⊖	Φ	⊖	Φ	⊖	Φ	Φ
<b>Ship. Nr. 13</b> <b>xx-Dec 03 151074</b> <b>Chimney</b> <b>Nr. of SL</b>	15776	24818	13860	33238	14729	36294	7257
		4		4		8	2
	68	124	59	137	63	125	19
Total Cathodes up to shipment Nr13 including chimney type 151075	15776	25671	13860	34229	14729	38733	8077

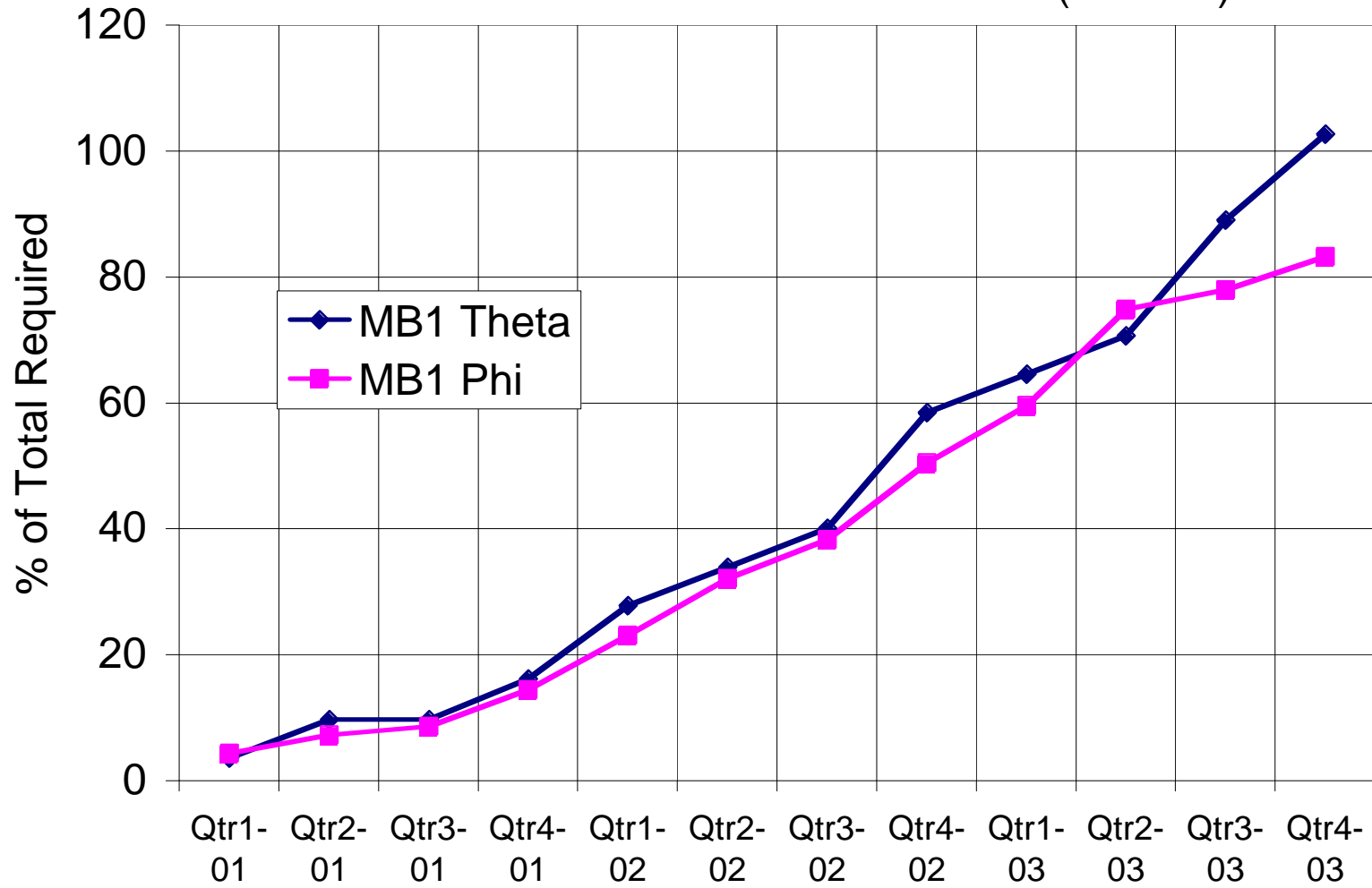
Shipment Nr 13 should arrive at CERN this Friday

Shipment Nr 14 ~ 50% ready

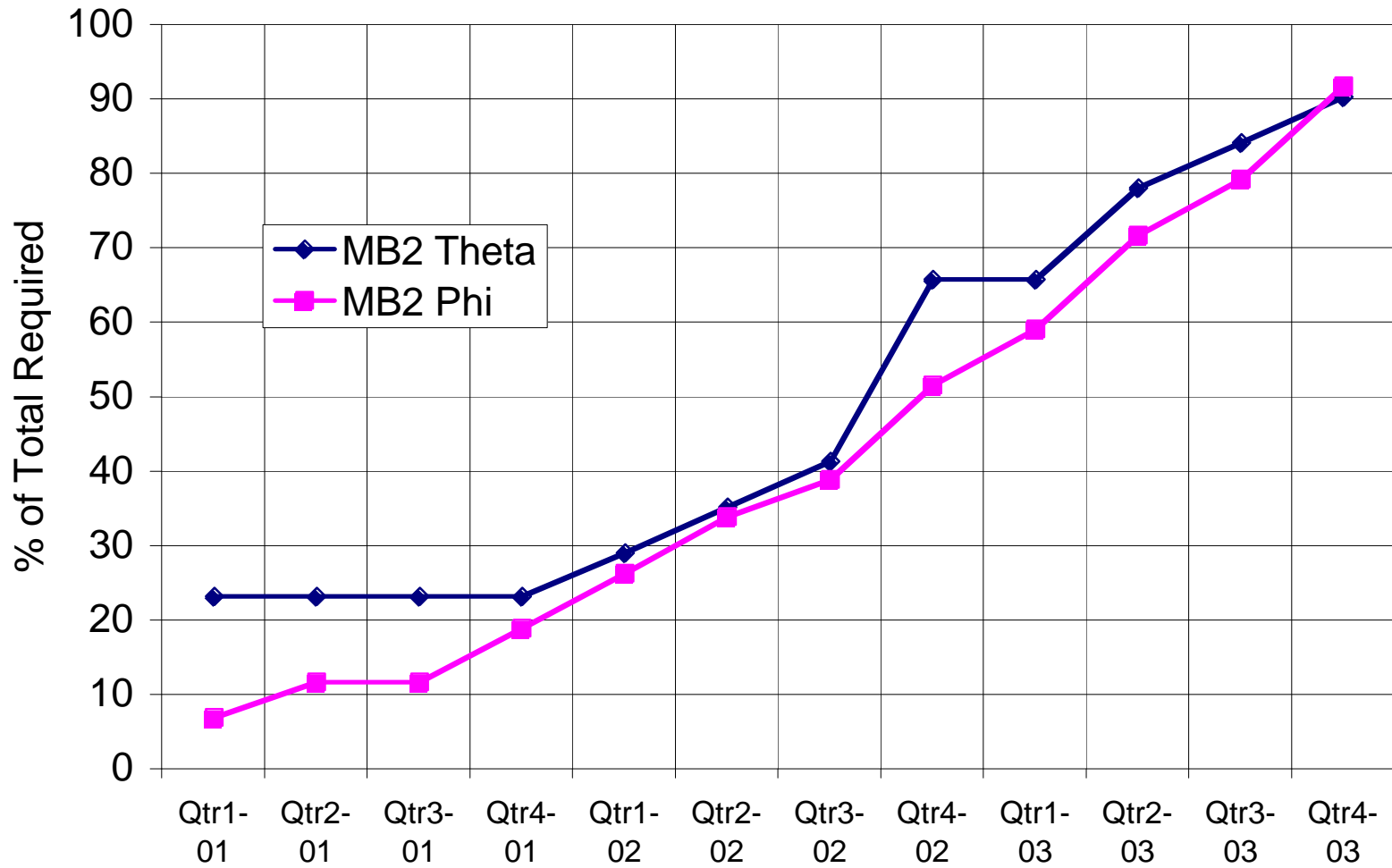


80% of cathode production done

Delivered MB1 Cathodes as % of Total (Aachen)

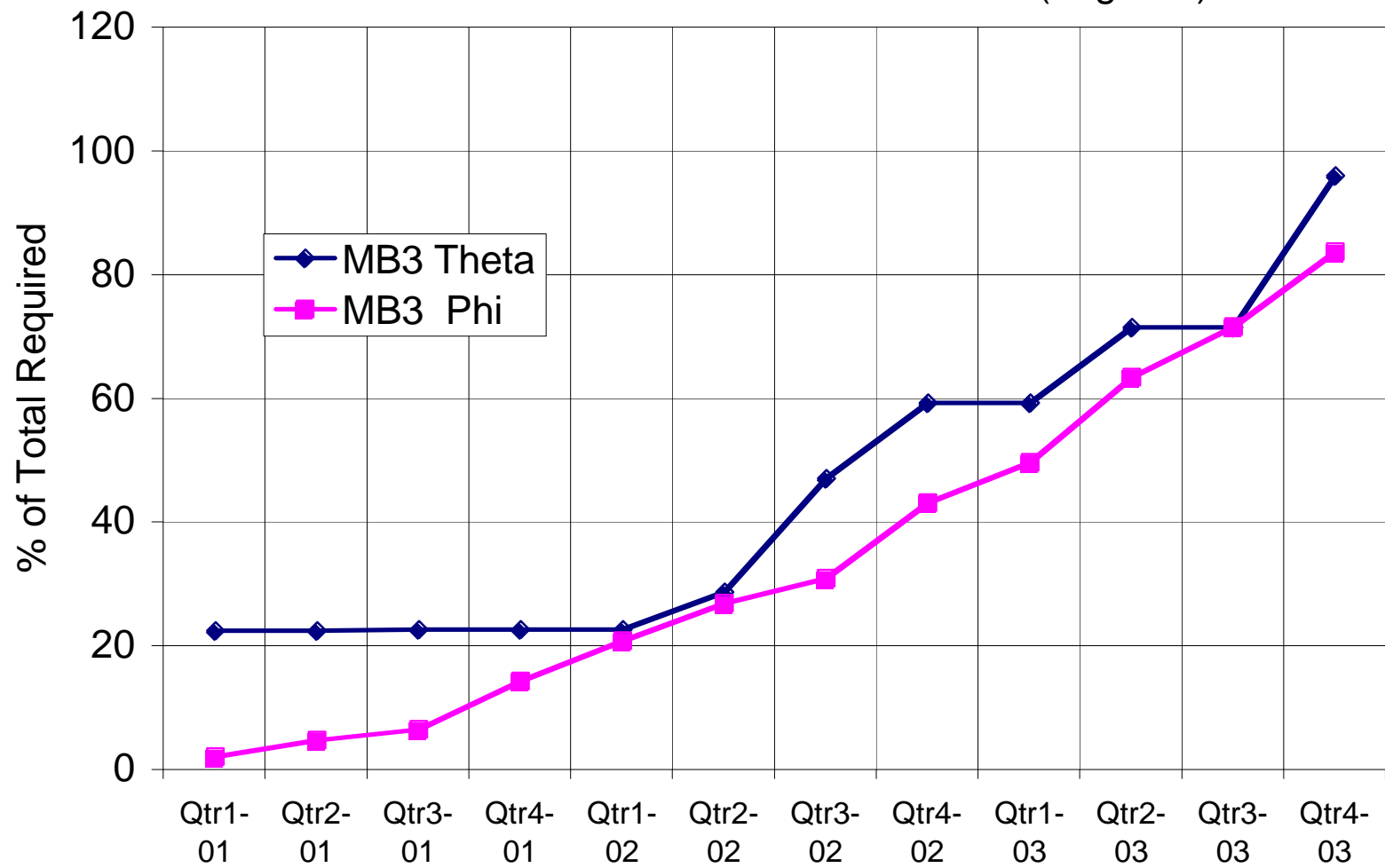


Delivered MB2 Cathodes as % of Total (CIEMAT)

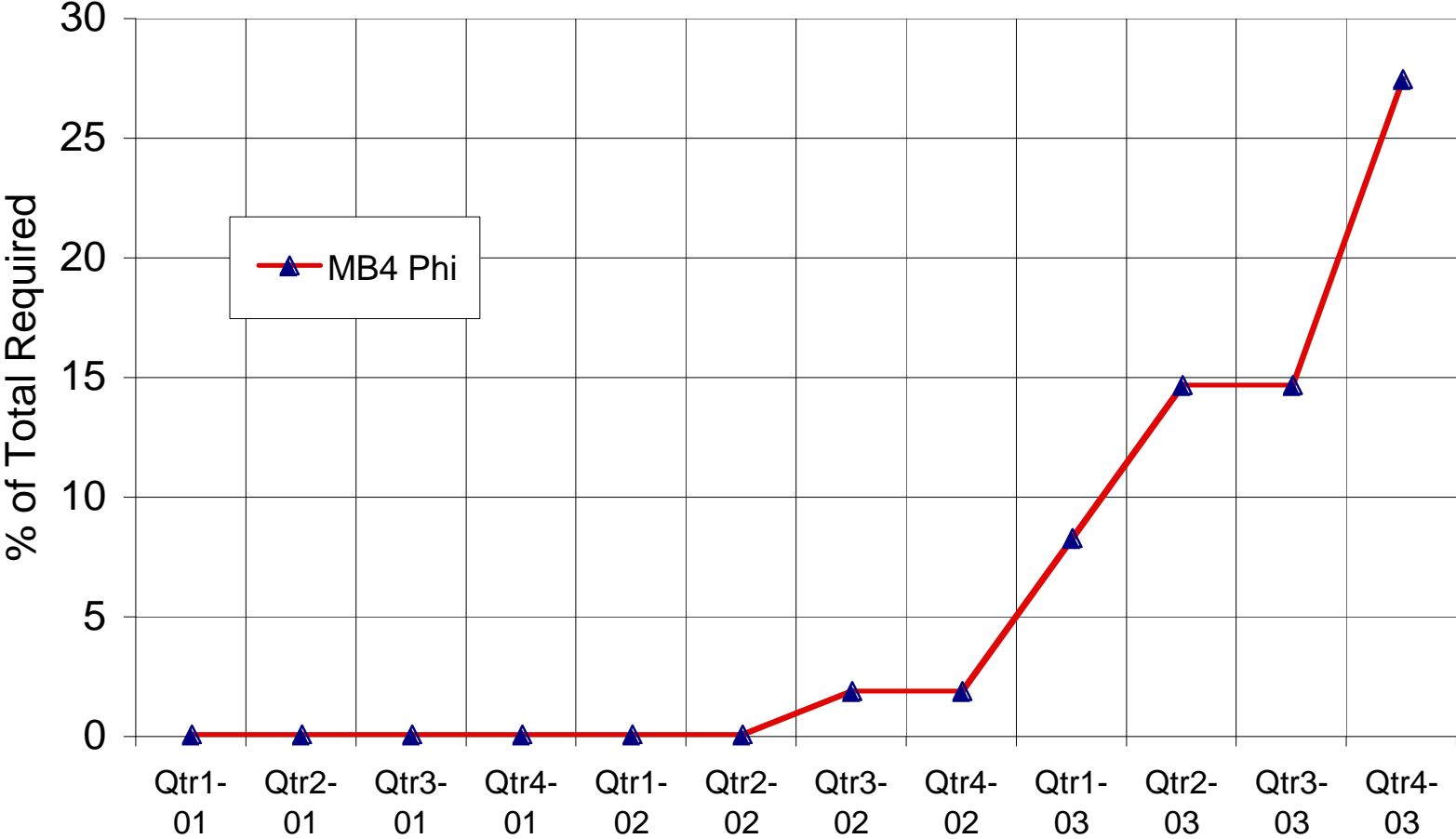




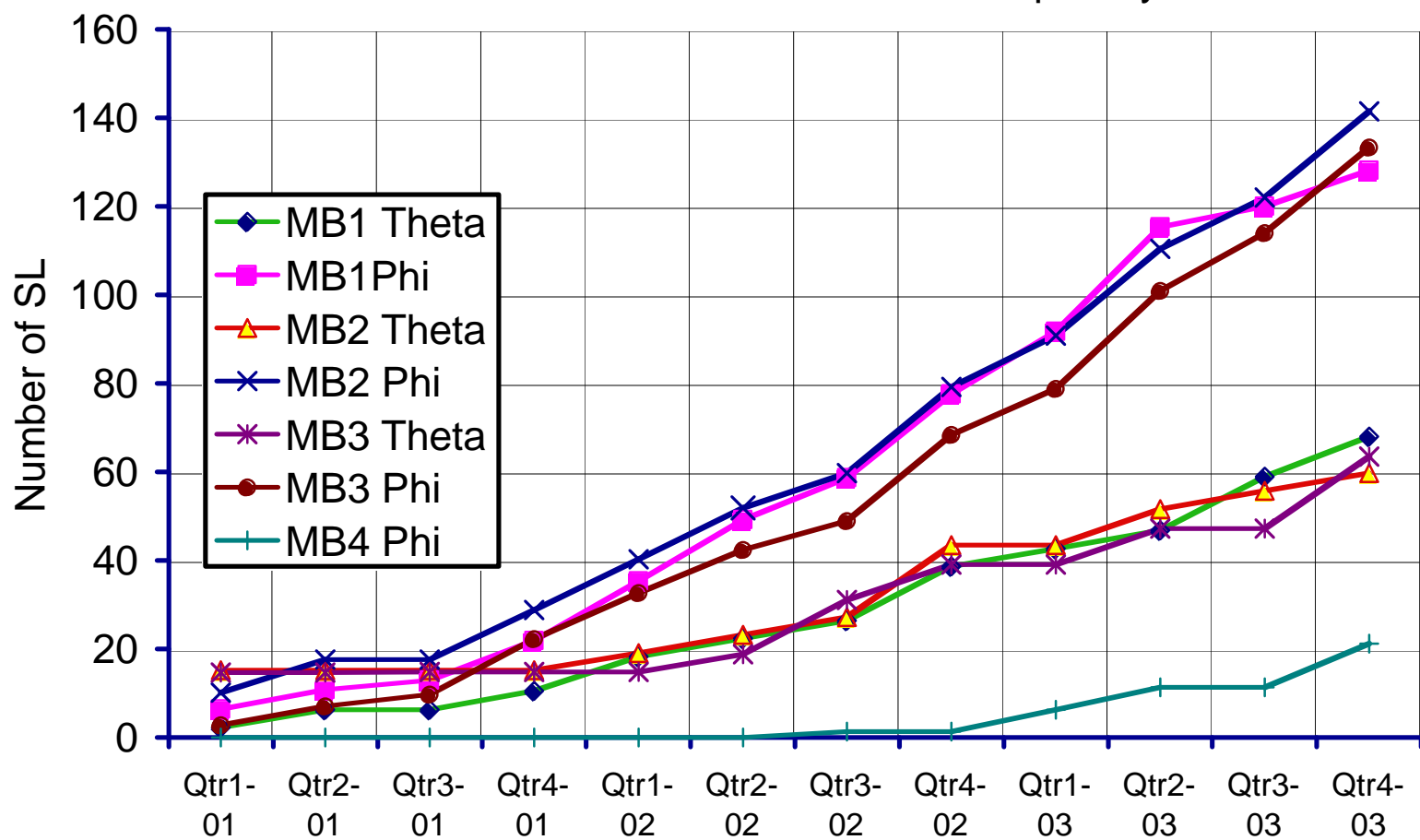
Delivered MB3 Cathodes as % of Total (Legnaro)



Delivered MB4 Cathodes as % of Total (Torino)



Delivered Cathodes as Number of SuperLayers



## Summary

- Cathode production is nearing completion well ahead of the chamber production.
- Be careful with the cathodes, the number of spares is limited.
- Restarting cathode production at CERN will be difficult and a last resort option.