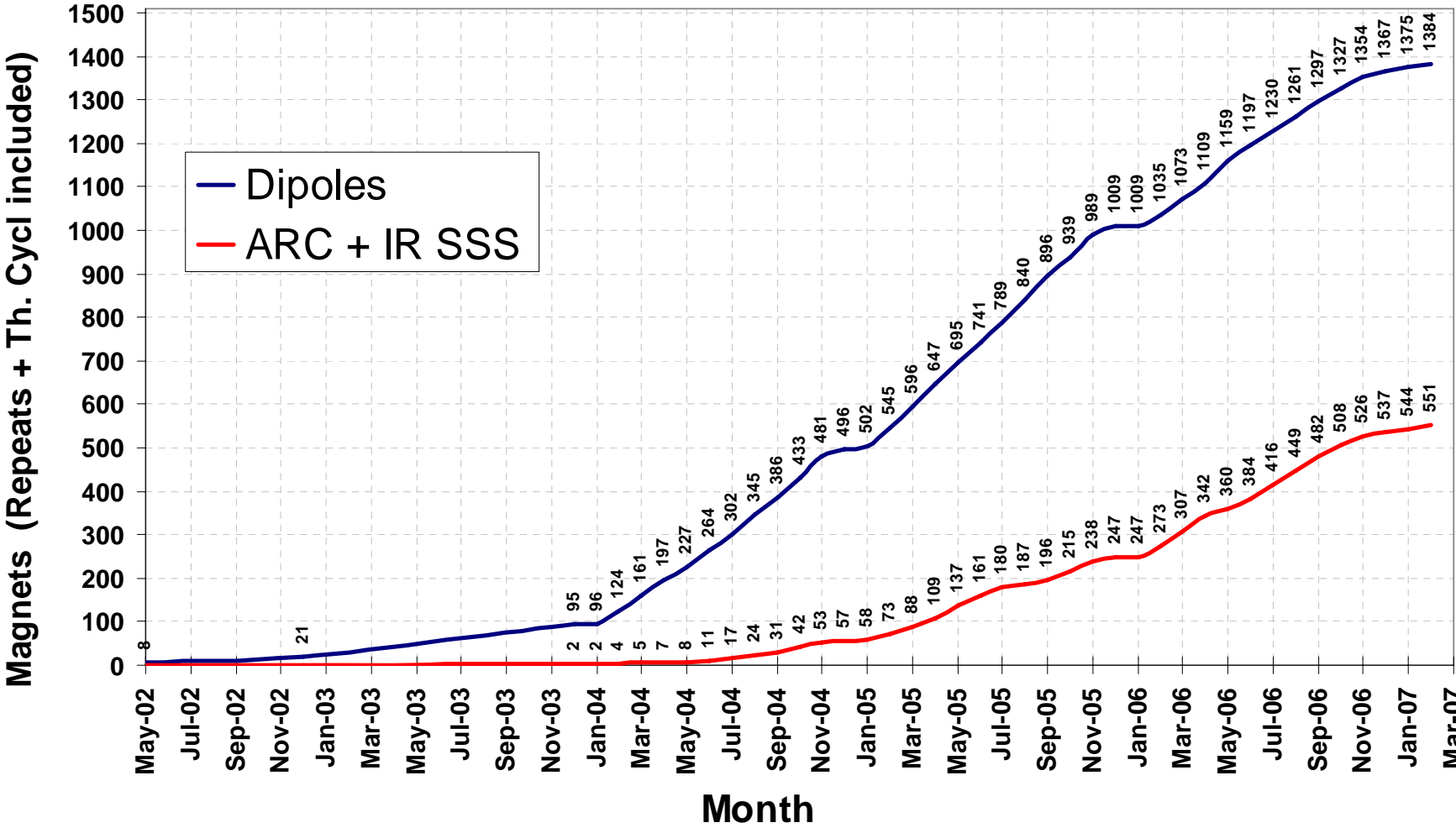


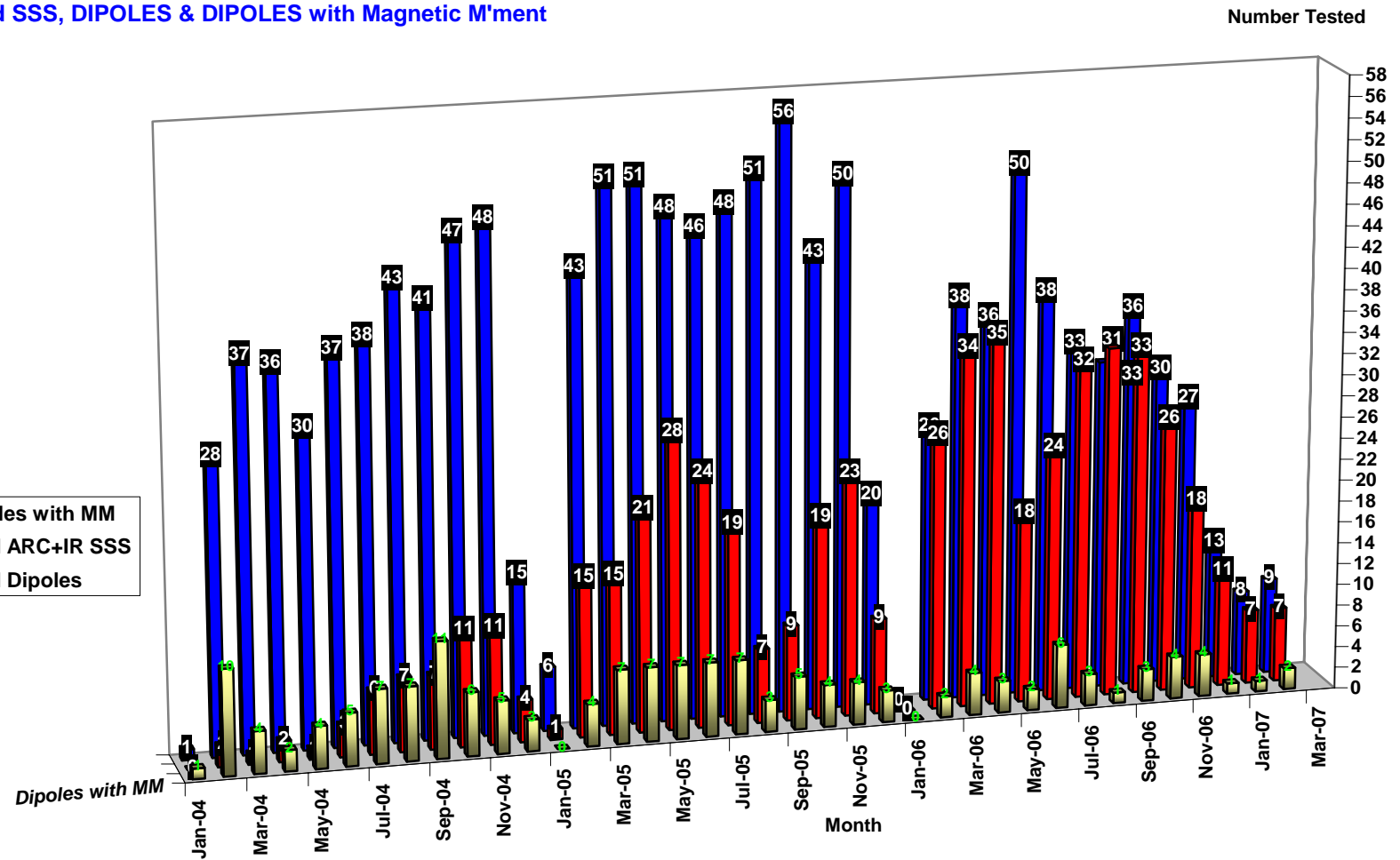
Statistics till 23-February.07

### Cumulative Cold Tested Magnets



Statistics till 23-February.07

Cold tested SSS, DIPOLES & DIPOLES with Magnetic M'ment



## Statistics till 23-February.07

| Statistics     |                                       |            |             |            |             |              |                |   |           |            |           |              |              |                             |           |           |              |           |
|----------------|---------------------------------------|------------|-------------|------------|-------------|--------------|----------------|---|-----------|------------|-----------|--------------|--------------|-----------------------------|-----------|-----------|--------------|-----------|
| Period         | Dipoles tested ( Reqd. Number = 1232) |            |             |            |             |              | Period         | ARC-SSS + 500 tested ( Reqd. Number = 392 ) |           |            |           |              |              | IR-SSS ( Reqd. Number = 82) |           |           |              |           |
|                | Fresh                                 | Repeat     | Total       | MM         | % Repeat    | % MM         |                | Fresh                                       | Repeat    | Total      | MM        | % Repeat     | % MM         | Fresh                       | Repeat    | Total     | % Repeat     | MM        |
| Year 2002-2003 | 95                                    | 0          | 95          | 95         | 0.00        | 100.00       | Year 2002-2003 | 2   | 0         | 2          | 2         | 0.00         | 100.00       | 0                           | 0         | 0         | 0.00         | 0         |
| Year 2004      | 356                                   | 45         | 401         | 65         | 11.22       | 16.21        | Year 2004      | 49  | 3         | 52         | 40        | 5.77         | 76.92        | 3                           | 0         | 3         | 0.00         | 1         |
| Year 2005      | 468                                   | 45         | 513         | 58         | 8.77        | 11.31        | Year 2005      | 148   | 17        | 165        | 7         | 10.30        | 4.24         | 20                          | 5         | 25        | 20.00        | 7         |
| Year 2006      | 326                                   | 32         | 358         | 33         | 8.94        | 9.22         | Year 2006      | 187   | 37        | 224        | 10        | 16.52        | 4.46         | 59                          | 7         | 66        | 10.61        | 21        |
| Year 2007      | 15                                    | 2          | 17          | 3          | 11.76       | 17.65        | Year 2007      | 11  | 3         | 14         | 1         | 21.43        | 7.14         | 0                           | 0         | 0         | 0.00         | 0         |
| <b>Total</b>   | <b>1260</b>                           | <b>124</b> | <b>1384</b> | <b>254</b> | <b>8.96</b> | <b>18.35</b> | <b>Total</b>   | <b>397</b>                                  | <b>60</b> | <b>457</b> | <b>60</b> | <b>13.13</b> | <b>13.13</b> | <b>82</b>                   | <b>12</b> | <b>94</b> | <b>12.77</b> | <b>29</b> |

Repaired Dipoles Tested = 29

Repaired SSS Tested = 5

Repaired IR-SSS Tested = 0

1232 + 392 + 82 = 1706 Magnets needing Cold Tests in SM18

| Overall LHC Statistics                                       |              |  |                 |
|--|--------------|--|-----------------|
| <b>Total Fresh Magnets Tested</b>                            | <b>1739</b>  | <b>Total Magnets expected to be Tested due to repeats (approx)</b> | <b>1933.751</b> |
| <b>Total Repeat Magnets Tested</b>                           | <b>196</b>   | ( 1706 + 13 % Repeats )  |                 |
| <b>Total Magnets Tested</b>                                  | <b>1935</b>  | <b>Balance Magnets (-)</b>   | <b>-1</b>       |
| <b>Total % Retested</b>                                      | <b>10.13</b> | Meaning we tested 1 more than what we predicted                    |                 |
| <b>TOTAL 1935 Magnet Tests carried out till 23 Feb 2007.</b> |              |  |                 |

**Statistics till 23-February.07**

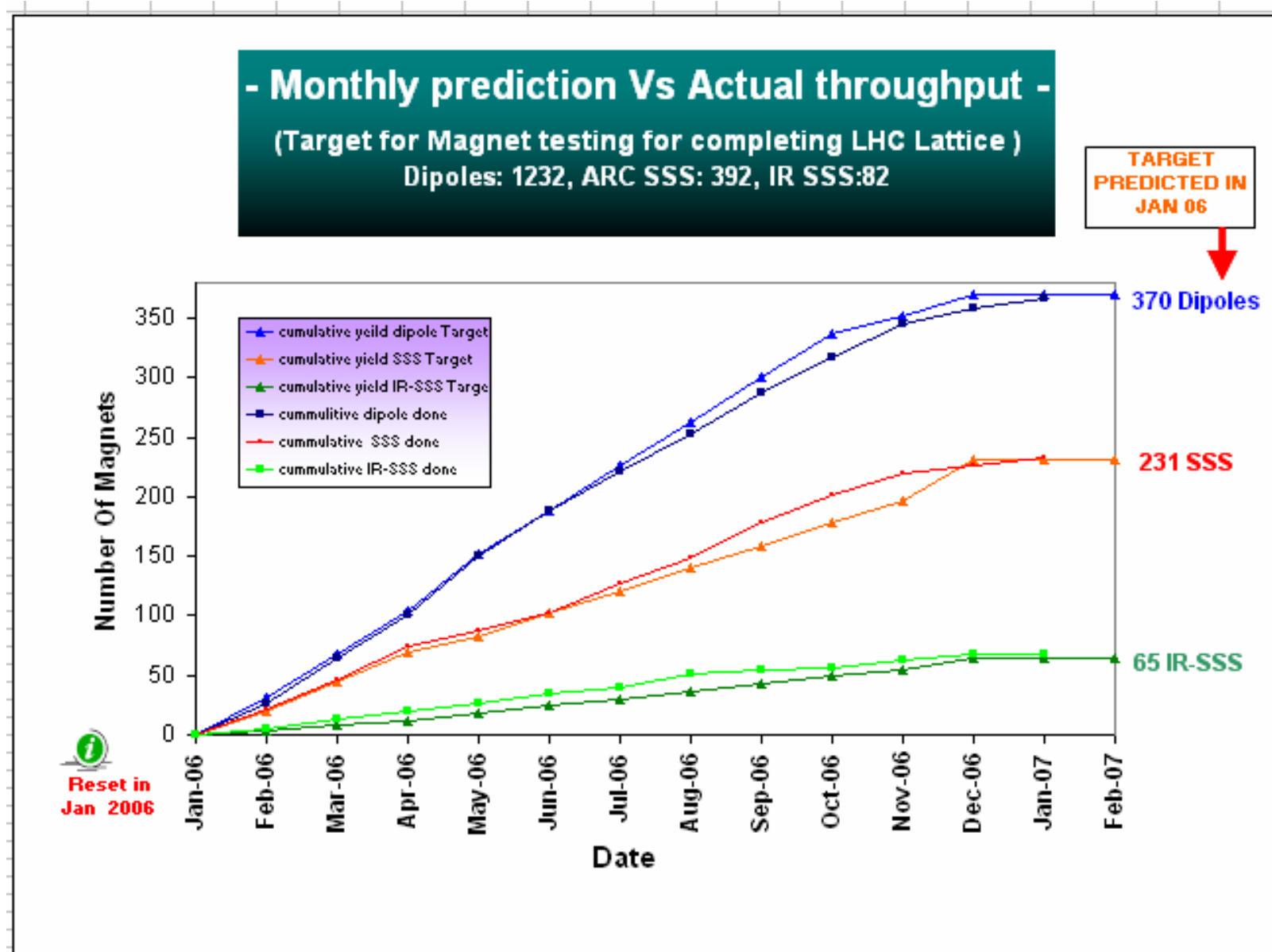
**Prediction on 22nd-December 06 For Termination by Feb 2007 : Desired Magnets & Desired Bench Configurations**

**On 23<sup>rd</sup> Feb 2007, all LHC Lattice magnet tests were over.**

*We tested in reality 1384 dipoles, 457 SSSs (Arc +500series) and 94 SpecialSSs (600 series) in lieu of 1232 dipoles, 392 SSSs(Arc+500series)and 82 Special SSSs(600 series) needed for LHC Lattice.*

| Assumption : Testing Time (Upto May 05) : Dipole -131 hrs;SSS- 143 hrs, After Jul-05, Dipole - 120 Hrs, ARCSSS - 115 Hrs, IR SSS - 10 days |                           |                                       |                          |   |                    |                   |                  |                   |   |
|--|---------------------------|---------------------------------------|--------------------------|---|--------------------|-------------------|------------------|-------------------|---|
| Average Testing Time for 2006 Dipole - 120 Hrs; ARC SSS ( excluding 500 series ) - 105 Hrs, 500 Series - 120 Hrs; IRSSS - 240 Hrs          |                           |                                       |                          |   |                    |                   |                  |                   |   |
| Date   | Magnets per month DIPOLES | Magnets per Month ARC SSS + 500 serie | Magnets per Month IR SSS | Cumulative Dipoles                                      | Cumulative ARC SSS | Cumulative IR SSS | Cumulative Total | Magnets per Month | Configuration                                   |
| Jan-05   | 6                         | 1                                     | 0                        | 502   | 54                 | 3                 | 559              | 7                 | D-9/AS-2/IS-1                                   |
| Feb-05   | 43                        | 13                                    | 2                        | 545   | 67                 | 5                 | 617              | 58                |   |
| Mar-05   | 51                        | 13                                    | 2                        | 596   | 80                 | 7                 | 683              | 66                |   |
| Apr-05   | 51                        | 21                                    | 0                        | 647   | 101                | 7                 | 755              | 72                | D-8/AS-4  |
| May-05   | 48                        | 27                                    | 1                        | 695   | 128                | 8                 | 831              | 76                | D-8/AS-3/IS-1                                   |
| Jun-05   | 46                        | 21                                    | 3                        | 741   | 149                | 11                | 901              | 70                |   |
| Jul-05   | 48                        | 15                                    | 4                        | 789   | 164                | 15                | 968              | 67                | D-8/AS-2/IS-1                                   |
| Aug-05   | 51                        | 6                                     | 2                        | 840   | 170                | 17                | 1027             | 59                | Dipole&SSS Fatigue Tests; ConCrgo; D9/AS-1/IS-1 |
| Sep-05   | 56                        | 7                                     | 2                        | 896   | 177                | 19                | 1092             | 65                | D-10/AS-1/IS-1(to ~ 15Sept)                     |
| Oct-05   | 43                        | 13                                    | 6                        | 939   | 190                | 25                | 1154             | 62                | D-8/AS-3/IS-1                                   |
| Nov-05   | 50                        | 21                                    | 2                        | 989   | 211                | 27                | 1227             | 73                | D-7/AS-2/IS-2 (E2-ergo)                         |
| Dec-05   | 20                        | 8                                     | 1                        | 1009  | 219                | 28                | 1256             | 29                | D-8/AS-3/IS-1                                   |
| Jan-06   | 0                         | 0                                     | 0                        | 1009  | 219                | 28                | 1256             | 0                 | ANNUAL SHUTDOWN                                 |
| Feb-06   | 26                        | 23                                    | 3                        | 1035  | 242                | 31                | 1308             | 52                | D-6/AS-4/IS-2                                   |
| Mar-06   | 38                        | 26                                    | 8                        | 1073  | 268                | 39                | 1380             | 72                | D-6/AS-3/IS-3                                   |
| Apr-06   | 36                        | 28                                    | 7                        | 1109  | 296                | 46                | 1451             | 71                | D-6/AS-3/IS-3                                   |
| May-06   | 50                        | 12                                    | 6                        | 1159  | 308                | 52                | 1519             | 68                | D-8/AS-2/IS-2                                   |
| Jun-06   | 38                        | 16                                    | 8                        | 1197  | 324                | 60                | 1581             | 62                | D-6/AS-3/IS-3                                   |
| Jul-06   | 33                        | 26                                    | 6                        | 1230  | 350                | 66                | 1646             | 65                | D-6/AS-3/IS-3                                   |
| Aug-06   | 31                        | 22                                    | 11                       | 1261  | 372                | 77                | 1710             | 64                | D-6/AS-3/IS-3                                   |
| Sep-06   | 36                        | 29                                    | 4                        | 1297  | 401                | 81                | 1779             | 69                | D-6/AS-3/IS-3                                   |
| Oct-06   | 30                        | 24                                    | 2                        | 1327  | 425                | 83                | 1835             | 56                | D-6/AS-4/IS-2                                   |
| Nov-06   | 27                        | 12                                    | 6                        | 1354  | 437                | 89                | 1880             | 45                | D-6/AS-4/IS-2                                   |
| Dec-06   | 13                        | 6                                     | 5                        | 1367  | 443                | 94                | 1904             | 24                | D-6/AS-4/IS-2                                   |
| Jan-07   | 8                         | 7                                     | 0                        | 1375  | 450                | 94                | 1919             | 15                | D-6/AS-6/IS-0                                   |
| Feb-07   | 9                         | 7                                     | 0                        | 1384  | 457                | 94                | 1935             | 16                | D-10/AS-0/IS-0                                  |
| Mar-07   |                           |                                       |                          | 1384  | 457                | 94                | 1935             | 0                 |   |
| Apr-07   |                           |                                       |                          | 1384  | 457                | 94                | 1935             | 0                 |   |
| May-07   |                           |                                       |                          | 1384  | 457                | 94                | 1935             | 0                 |   |
| <b>Basic Targets</b>   | <b>1232.0</b>             | <b>392.0</b>                          | <b>82.0</b>              | <b>114 (IR SSS)=50 (MS) + 32 (DS) + 32 (DS-MQ Type)</b> |                    |                   |                  |                   |   |
| <b>Re-Target(+9.9%)</b>  | 151.7                     | 62.7                                  | 12.4                     |   |                    |                   |                  |                   |   |
| <b>Probable Target (+11.9%, +9.70%, +13.79%)</b>   | <b>1383.7</b>             | <b>454.7</b>                          | <b>94.4</b>              | <b>Bench Throughput Estimator ( updated July -06 )</b>  |                    |                   |                  |                   |   |
| <b>Total Magnets</b>   | <b>1932.8</b>             |                                       |                          | <b>Dipoles</b>  |                    | <b>ARC-SSS</b>    |                  |                   |   |
|  |                           |                                       |                          | 8-Benches   | 48.0               | 3-Benches         | 18.8             |                   |   |
|  |                           |                                       |                          | 7-Benches   | 42.0               | 4-Benches         | 25.0             |                   |   |
|  |                           |                                       |                          | 6-Benches   | 36.0               | 6-Benches         | 37.6             |                   |   |
|  |                           |                                       |                          | 3-Benches   | 54.0               | 2-Benches         | 9.6              |                   |   |

Statistics till 23-February.07



Note : The prediction does not include magnets not going into tunnel (Dipoles : 6 ; SSS: 5)

**Statistics till 23-February.07**  
**List of Repaired Magnets**

| <b>Dipoles with 500 added to old name</b> |             |                       |
|---|-------------|-----------------------|
| <b>OLD</b>                                | <b>NEW</b>  | <b>Comments</b>       |
| <b>1143</b>                               | <b>1643</b> | Both are tested twice |
| <b>1026</b>                               | <b>1526</b> |                       |
| <b>1126</b>                               | <b>1626</b> | Both are tested twice |
| <b>2069</b>                               | <b>2569</b> | 2069 tested twice     |
| <b>2024</b>                               | <b>2524</b> | 2524 tested twice     |
| <b>2013</b>                               | <b>2513</b> |                       |
| <b>2032</b>                               | <b>2532</b> |                       |
| <b>2049</b>                               | <b>2549</b> |                       |
| <b>3004</b>                               | <b>3504</b> |                       |
| <b>3224</b>                               | <b>3724</b> | 3224 tested twice     |
| <b>3234</b>                               | <b>3734</b> |                       |
| <b>3136</b>                               | <b>3636</b> | Both are tested twice |
| <b>3153</b>                               | <b>3653</b> |                       |
| <b>3208</b>                               | <b>3708</b> | 3208 tested twice     |
| <b>2523</b>                               | <b>2023</b> | 2023 tested twice     |
| <b>2524</b>                               | <b>2024</b> | 2524 tested twice     |

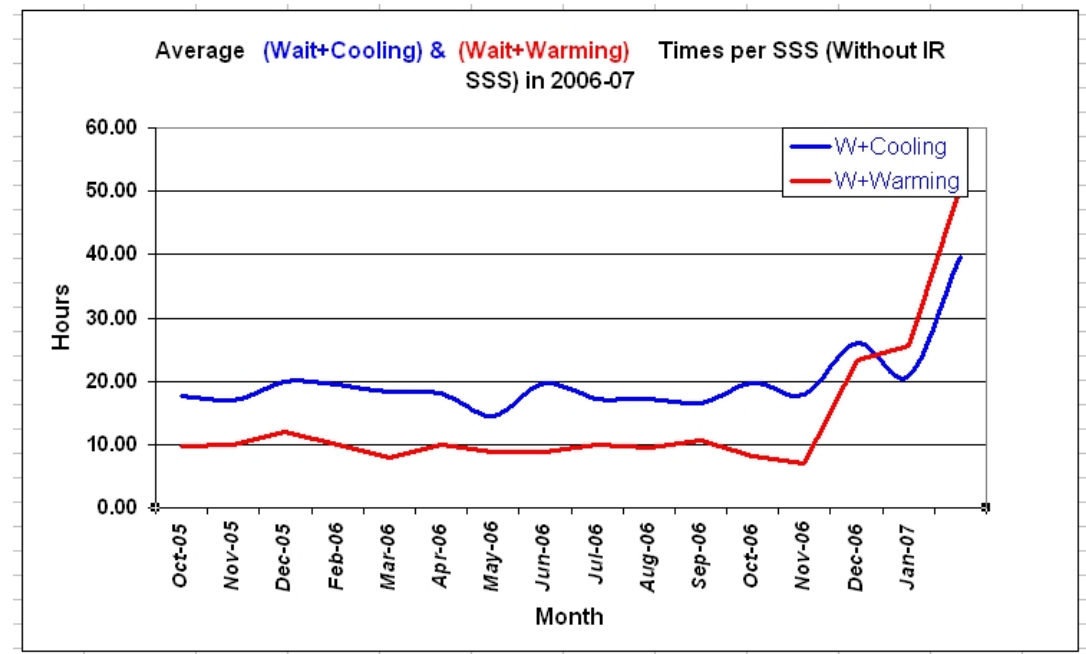
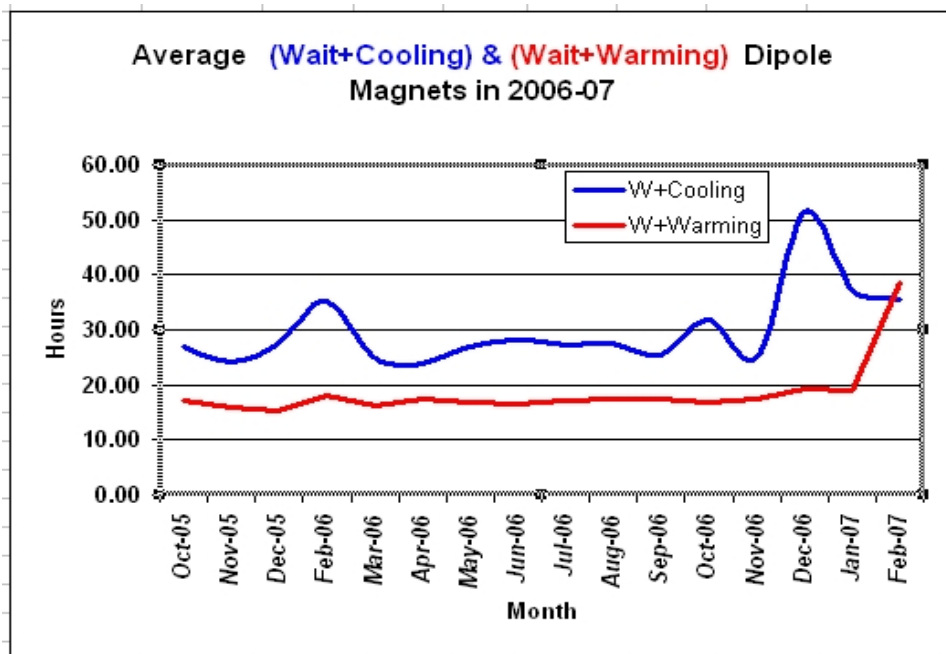
| <b>Dipoles replaced from spares</b>       |
|---|
| <b>1001: 1002: 1011: 1219: 1334</b>       |
| <b>2001: 2124: 2252: 2324: 2339: 2524</b> |
| <b>3001: 3383</b>                         |

| <b>Replaced SSS</b> |                    |
|---------------------|--------------------|
| <b>Magnet</b>       | <b>Replaced by</b> |
| <b>277</b>          | <b>362</b>         |
| <b>036</b>          | <b>367</b>         |
| <b>344</b>          | <b>368</b>         |
| <b>279</b>          | <b>371</b>         |
| <b>257</b>          | <b>373</b>         |

**Dipoles : 29 ; SSS : 5**

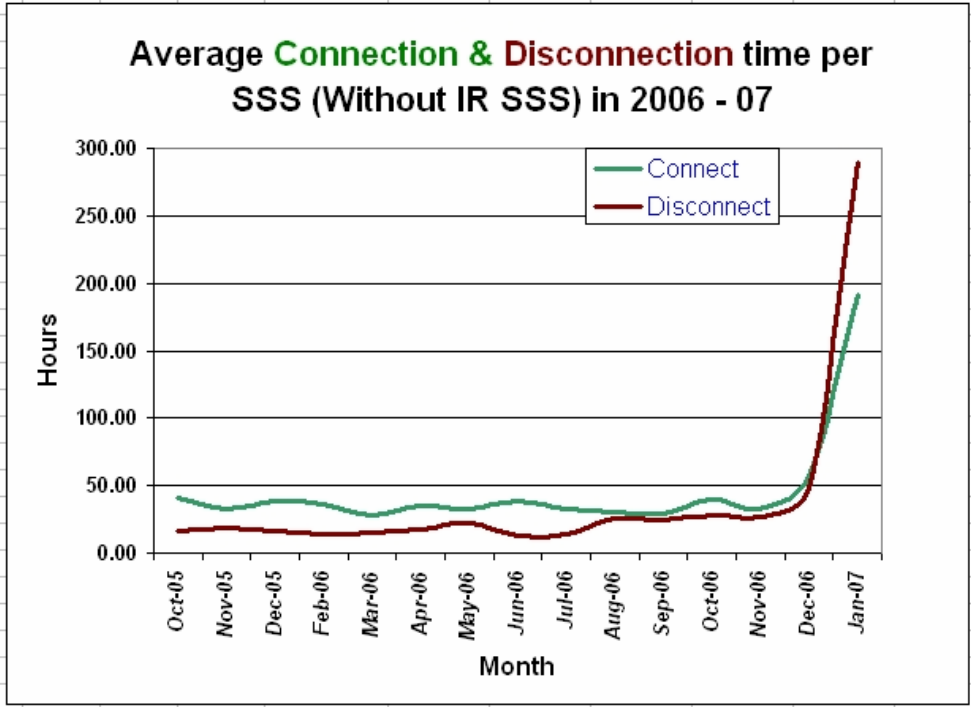
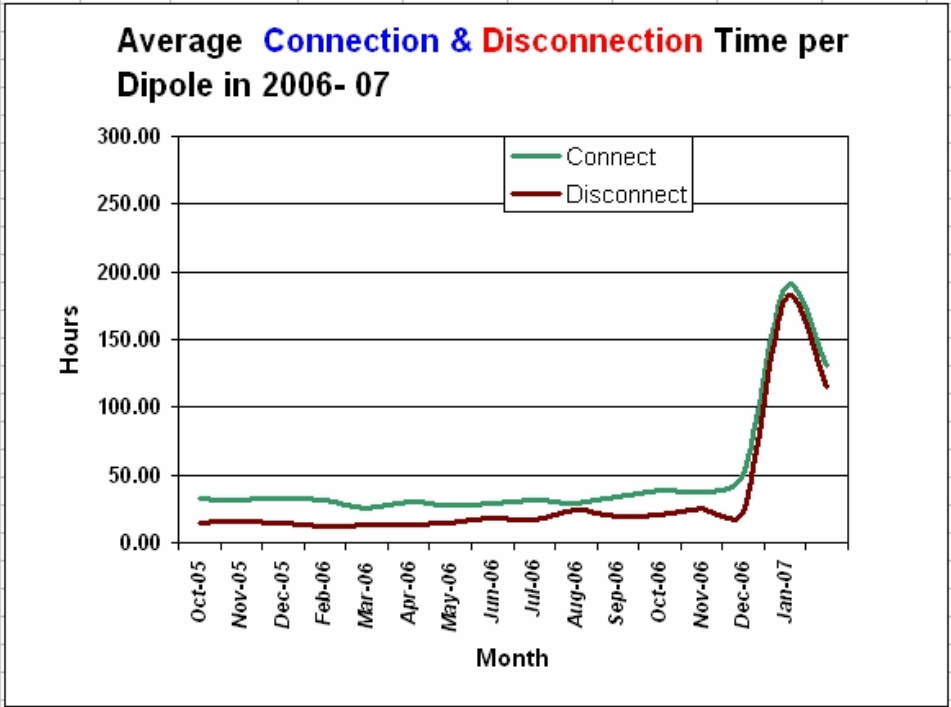
Statistics till 23-February.07

CRYO TIMES



Statistics till 23-February.07

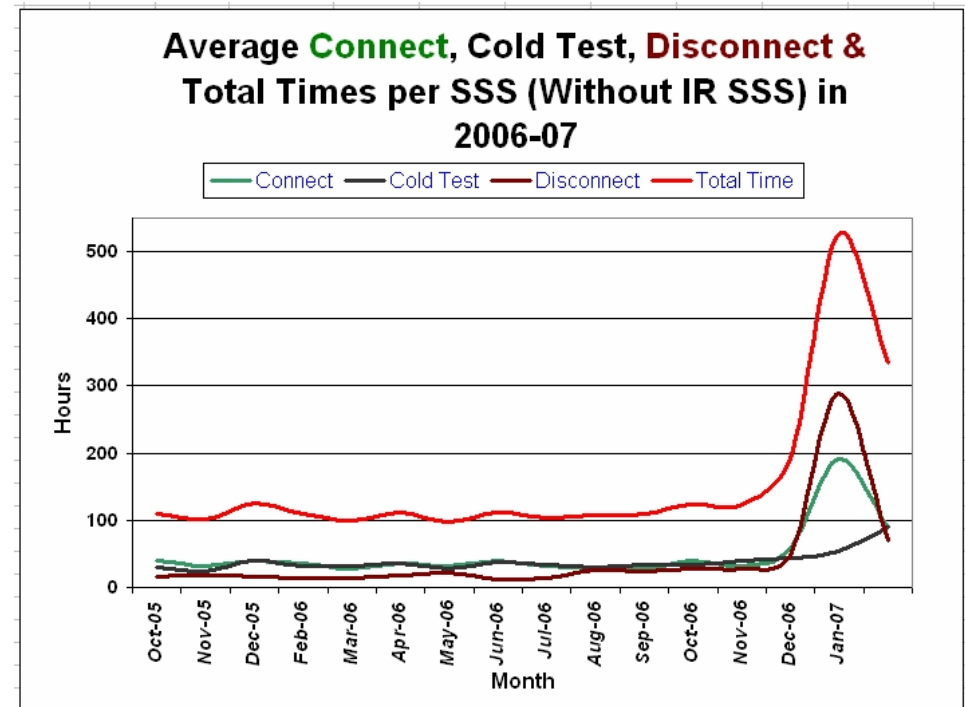
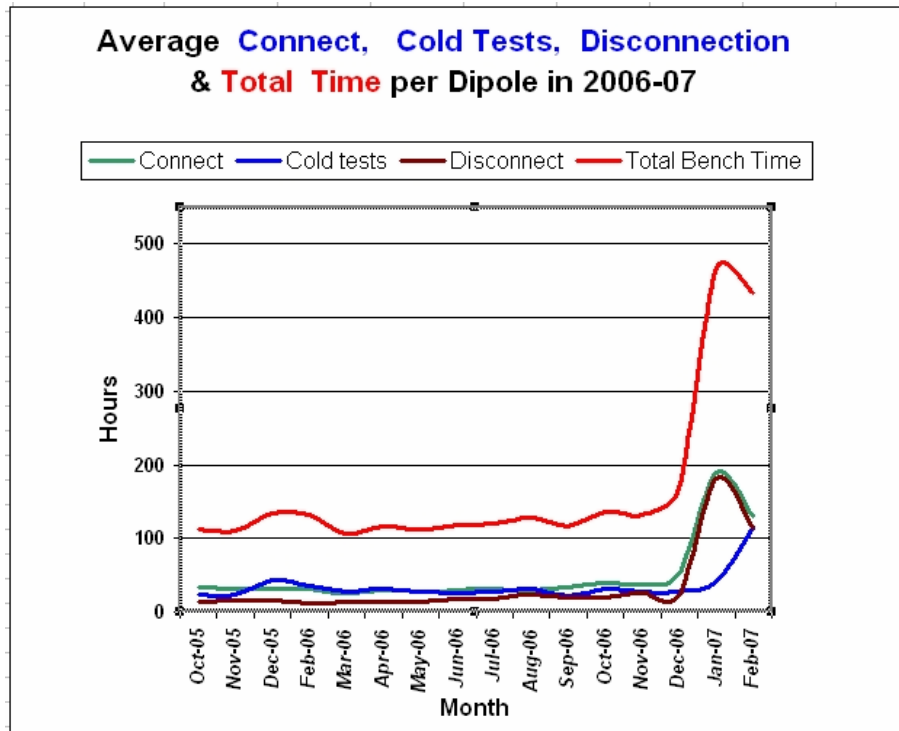
ICS TIMES





Statistics till 23-February.07

ICS TIMES

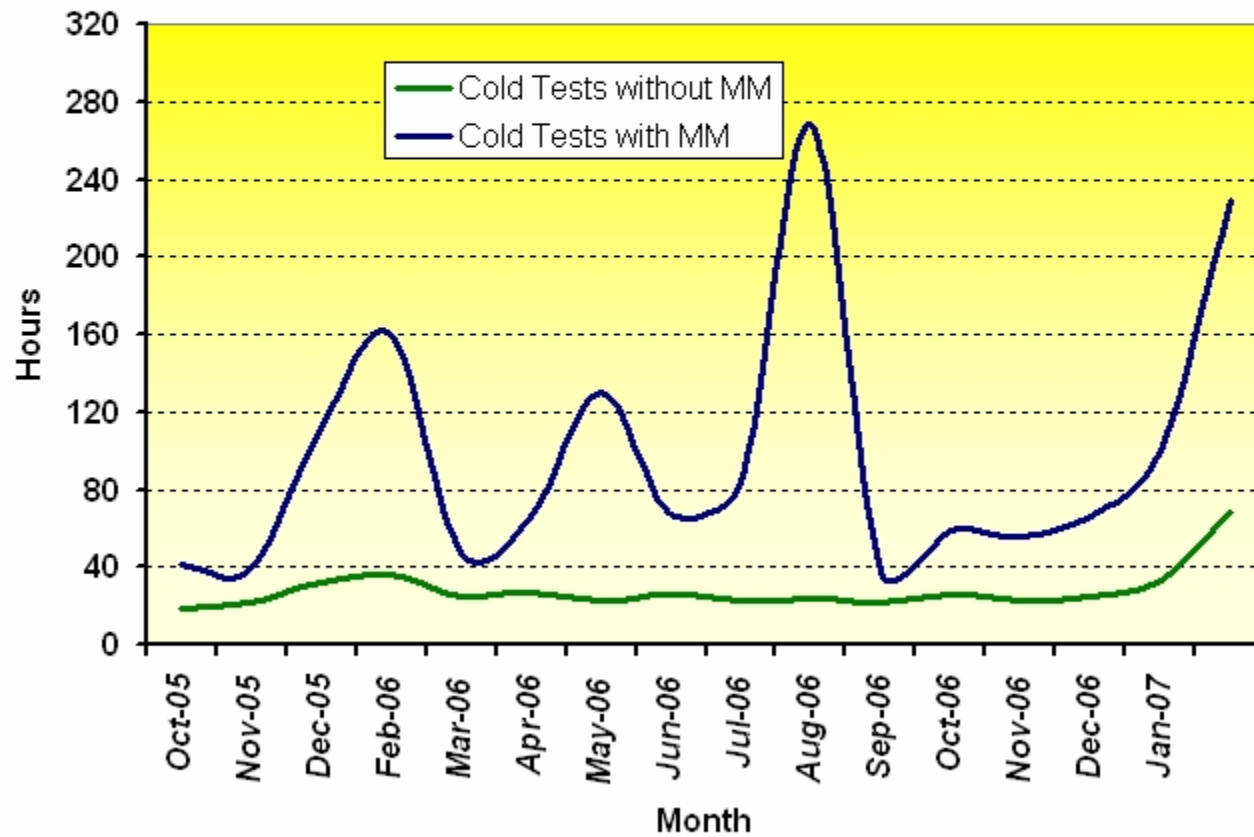


Note: A large **increase** in the connection, disconnection and cold test times are attributed to

- 1) CERN vacation during 22-Dec'06 to 07-Jan-07
- 2) Reducing the number of shifts per day
- 3) Weekend holidays
- 4) Low ICS manpower deployment due to contractual reasons

Statistics till 23-February.07

## Average Cold Tests Times **with** & **without** Magnetic Measurements in 2006-07



**Statistics till 23-February.07**

