

# Status of Interconnect Works in the LHC Arcs and DS regions – week 43 (October 22 – October 28, 2007)

O. Denis, AT-MCS (on behalf of the arc coordination team)

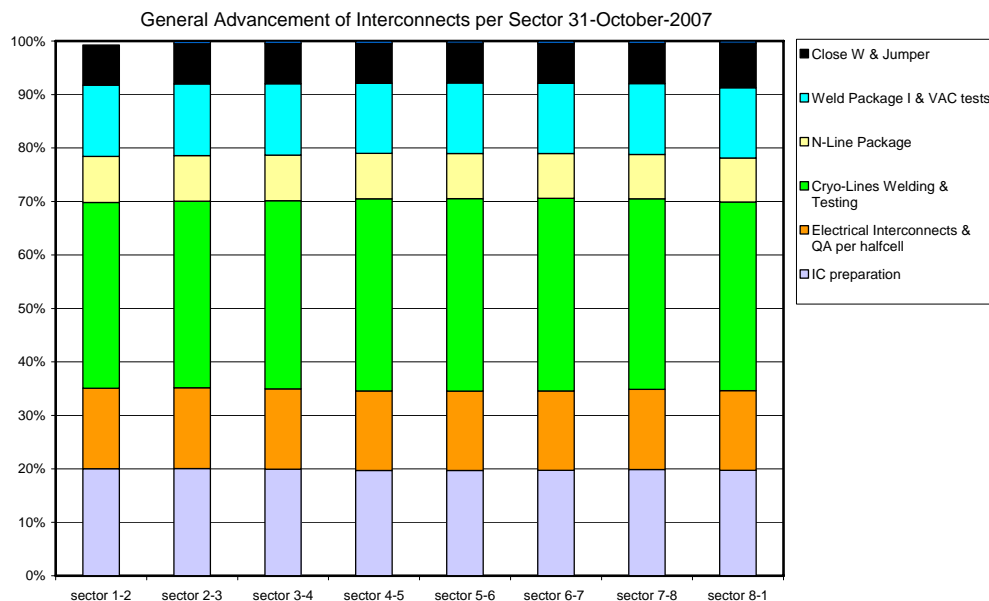
EDMS no. 878151

This report gives the status of the interconnect works in the LHC arcs and dispersion suppressor regions carried out during week 43 (October 22 – October 28, 2007) in responsibility of the interconnection arc coordination team, starting with a general overview about the advancement per sector.

For the status of the VAC test, production rates, work progress, and number of operations foreseen and performed, data are reported for each sector separately.

## The Dashboard

- Number of magnets in the tunnel: 1232 MB, 474 SSS, 114 LSS.



Data for General Advancement Plot is counted by number of interventions and grouped by activities as follows:

- IC preparation: Magnet alignment, IC pre-inspection, IC released for work,
- Electrical Interconnects & QA per halfcell: PAQ, US weld of spool pieces, brazing of main busbars,
- Cryo-Lines Welding & Testing: Welding of main busbar lines M1, M2, M3, weld K1 line, K2 line, K3 line, C' line, X line. Vacuum tests of K lines, C' line, X line.
- N-Line package: Insert N line, AIV 1, AIV 2, US welding of N line, weld of large sleeve for N line.
- Beam Pipes Welding & VAC tests. VAC sector test: Welding of V1, V2, E line and VAC tests V1, V2, E line. RF test magnet chain.
- Close W bellow and Jumper.
- VAC test for sector.

**Sector coordination team:**  
**F. Bertinelli, P. Fessia, A. Musso, M. Struik**

<i>Sectors</i>	<i>Started</i>
2-3 3-4 4-5 5-6 6-7 7-8 8-1	finished
1-2	Yes

**Remarks:**

1. The color coding of the general advancement plot matches the color coding of the other plots (snapshot and production rates).
2. The plots of the production rates also show the average production rate (IC/week) foreseen for the sectors and the ultimate production rates for the ideal case.
3. From week 9 on, we added a plot showing the general advancement per sector. For easy comparison, the starting dates in all plots is set to 1-Oct-06, except for sector 4-5.
4. For sectors that are completed, we will suppress the plots and simple give the work status instead.

## Sector 1-2

- Plug-in-modules leak tests completed except for 1 NC being repaired.
- Remaining 9 W bellows to be closed.
- 13 Vacuum Sectors out of 14 provided to VAC.

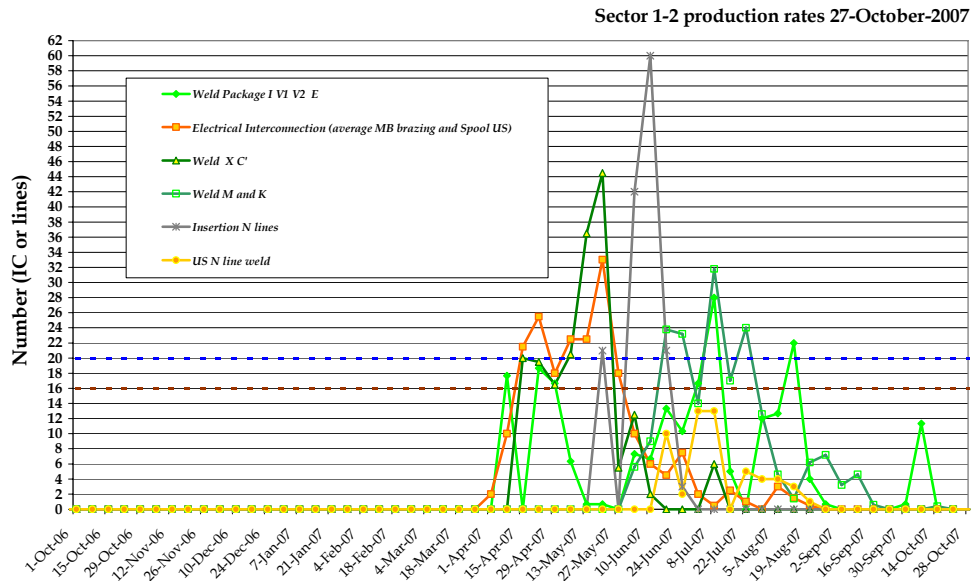


Fig. 1: Production rates in sector 1-2.

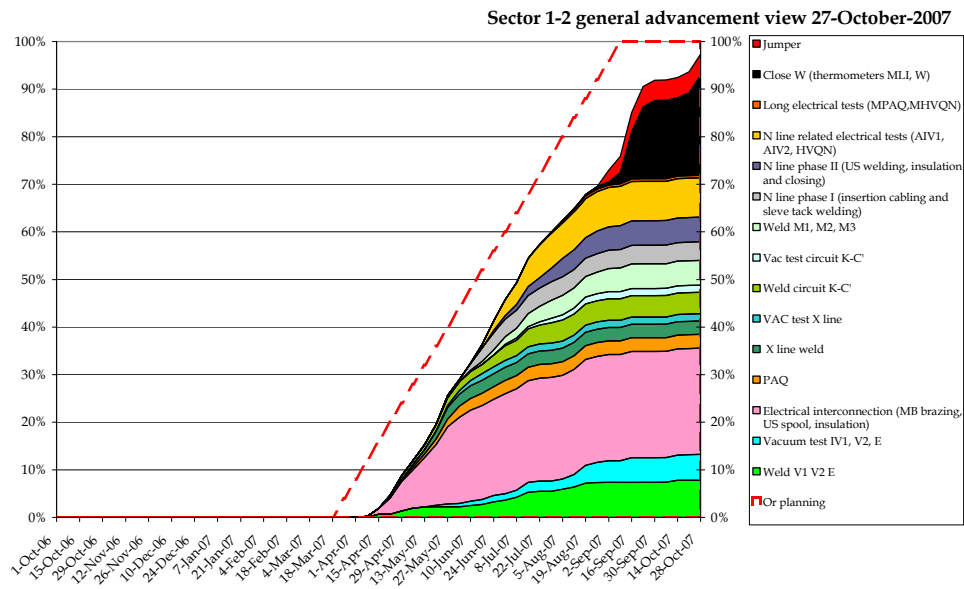


Fig. 2: General advancement view for sector 1-2.

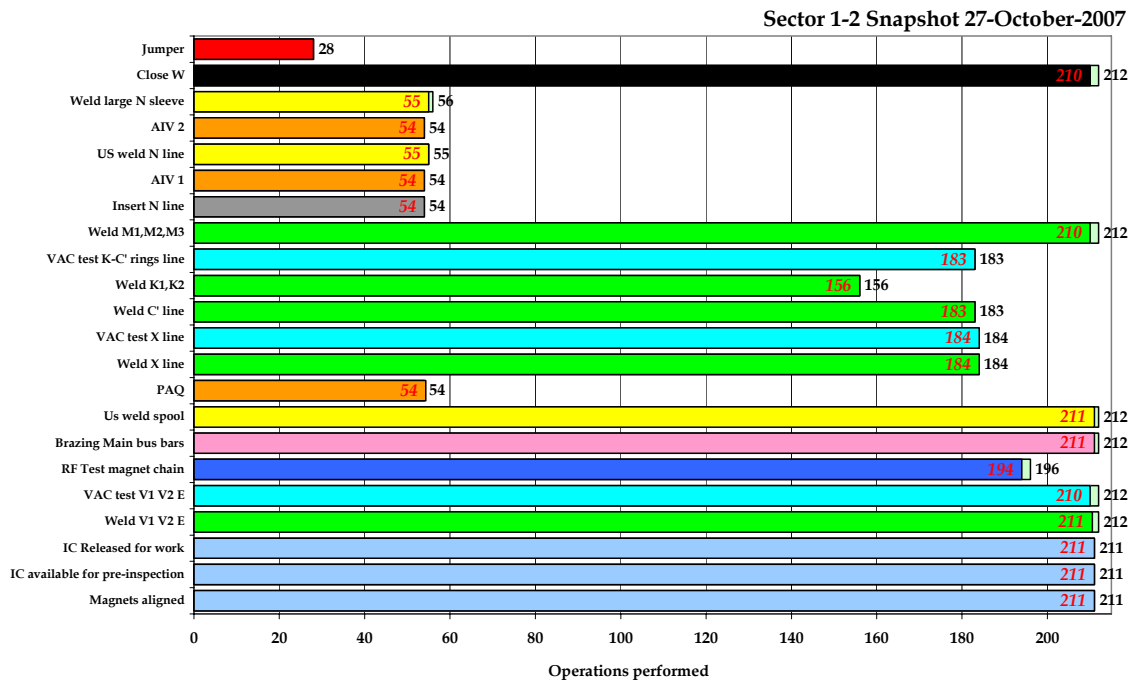


Fig. 3: Snapshot of work progress in sector 1-2 showing the number of operations achieved in total with respect to the total number of operations necessary.

## Sector 2-3 (completed on 30-Oct-07)

- PIM's have been installed on the 2 extremity sectors, the last ones. They are leak tight.
- 11 Vacuum Sectors are leak tight, 2 VS leaky (requested to be 'use as is') and 1 VS leaky (leak to be localized).

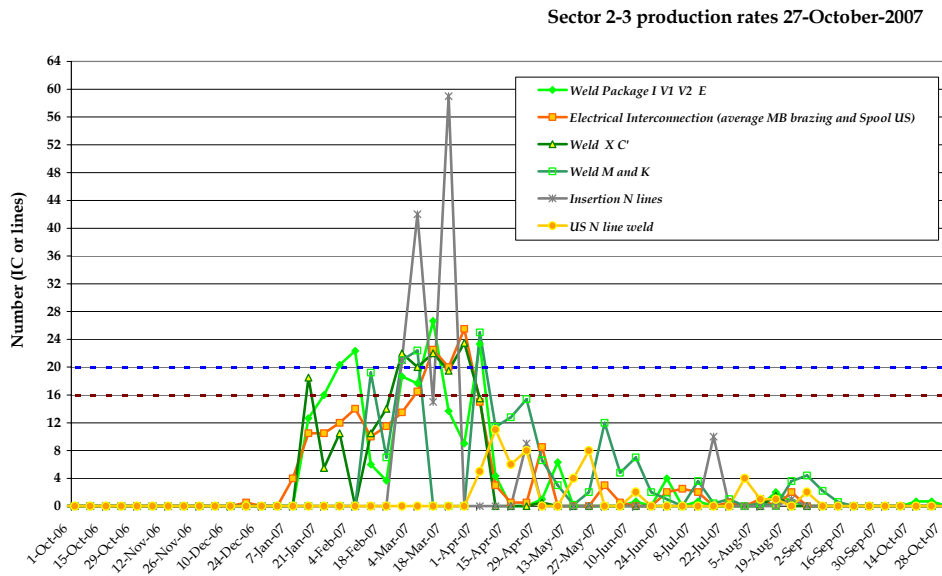


Fig. 4: Production rates in sector 2-3.

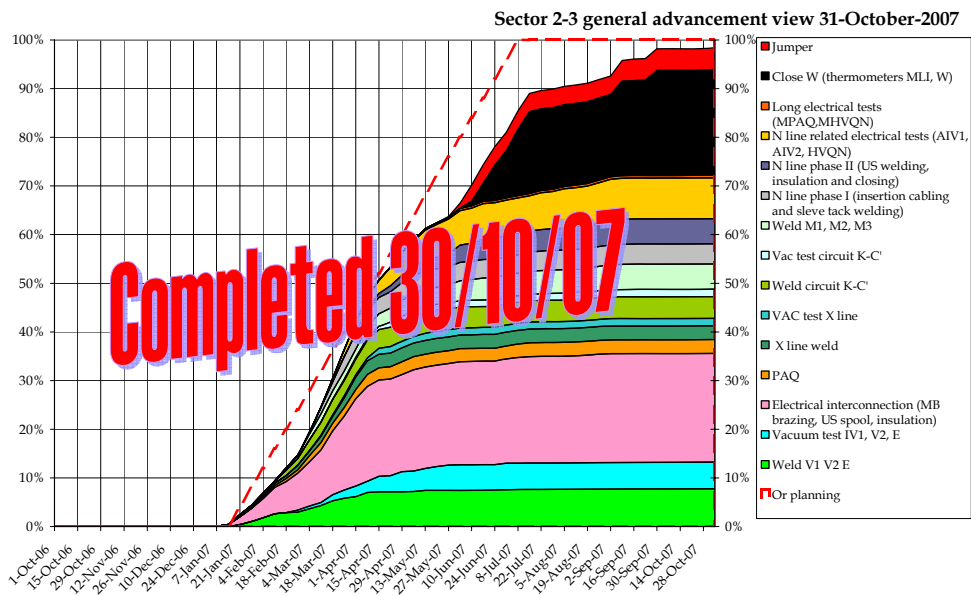


Fig. 5: General advancement view for sector 2-3.

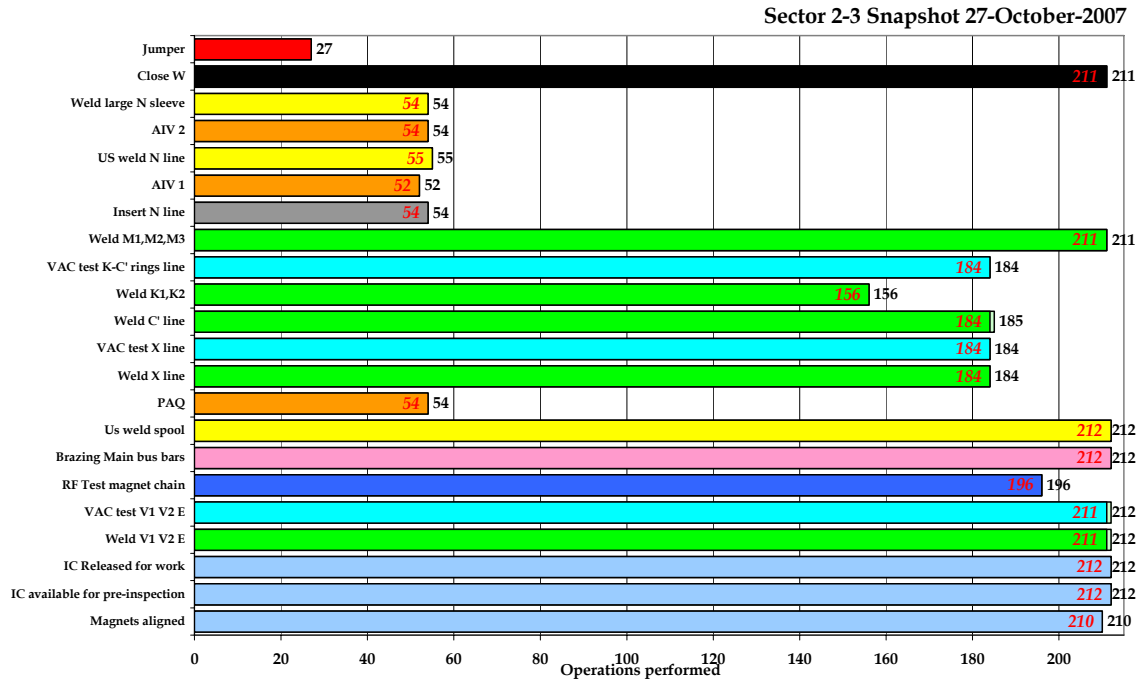


Fig. 6: Snapshot of work progress in sector 2-3 showing the number of operations achieved in total with respect to the total number of operations necessary.

### **Sector 3-4 (completed on 18-Sep-07)**

- 1 leak opened during pressure test. Localized on line E close to DFBA jumper, under investigation.
- 13 Vacuum Sectors are leak tight, 1 VS leaky (2 leaks to be localized, global leak :  $2 * 10^{-6}$  mbarl/s).
- Those 2 leaks localization ongoing.

### **Sector 4-5 (completed on 29-Apr-07)**

- Cool-down.

### **Sector 5-6 (completed on 05-Sep-07)**

- Flushing.

### **Sector 6-7 (completed on 30-Aug-07)**

- 10 Vacuum Sectors are leak tight, 4 VS leaky (requested to be 'use as is').
- Pressure test successfully completed, leak tightness check ongoing.

### **Sector 7-8 (completed)**

### **Sector 8-1 (completed on 9-May-2007)**

- Reconnection of new SSS following plan. All electrical connections completed and tested.

# Vacuum Tests by Sector

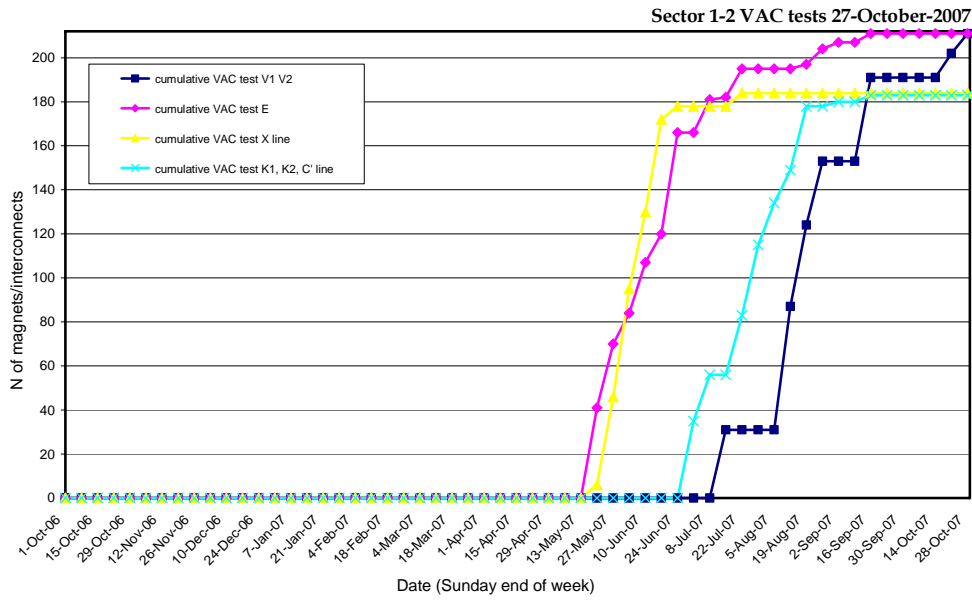


Fig. 16: Status of the VAC tests in sector 1-2.

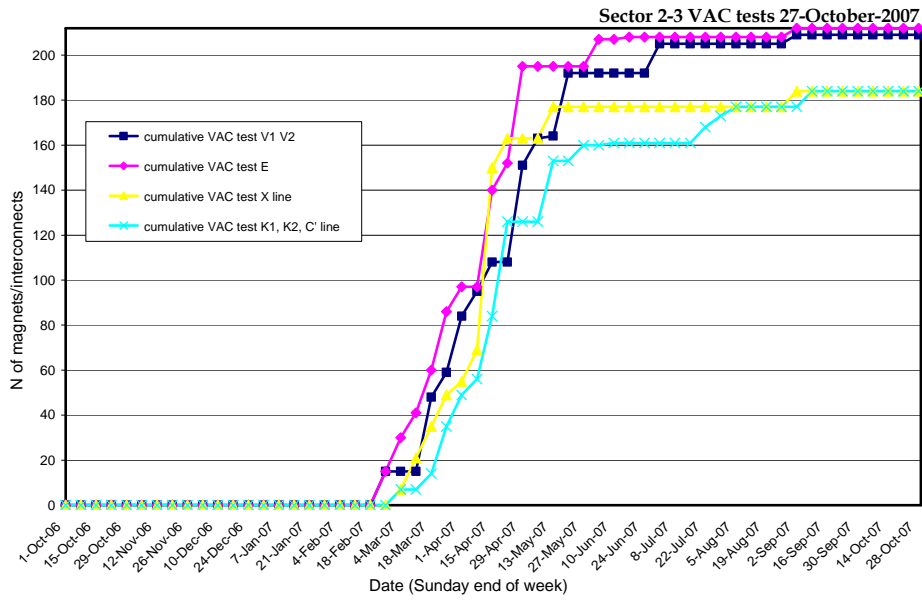


Fig. 17: Status of the VAC tests in sector 2-3.