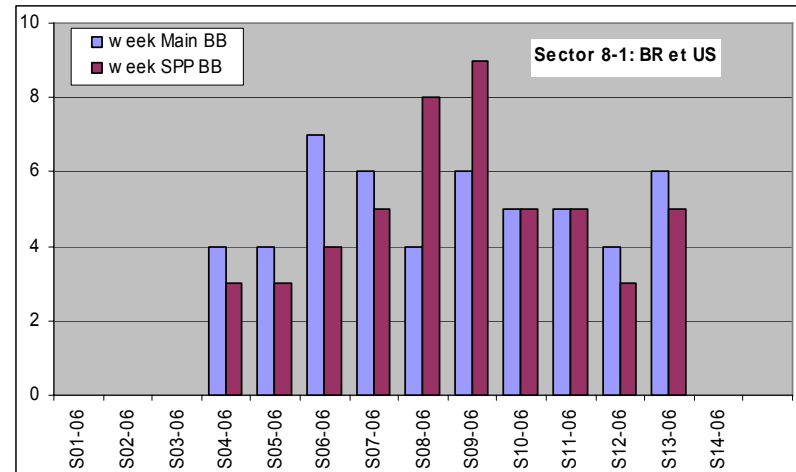
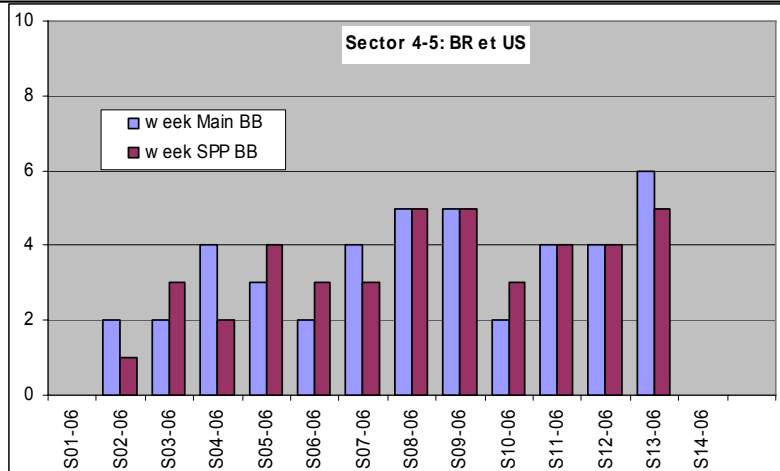


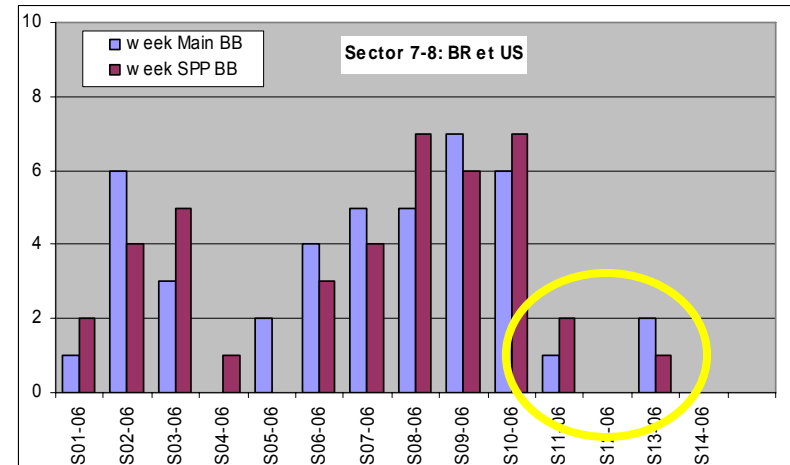
Progress Status of LHC Interconnections (ii/ii)

F. Bertinelli / AT-CRI (15 minutes)

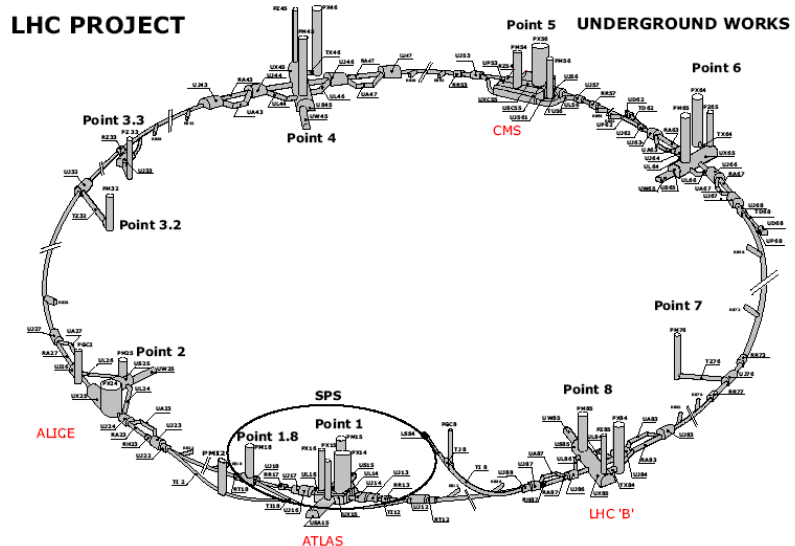
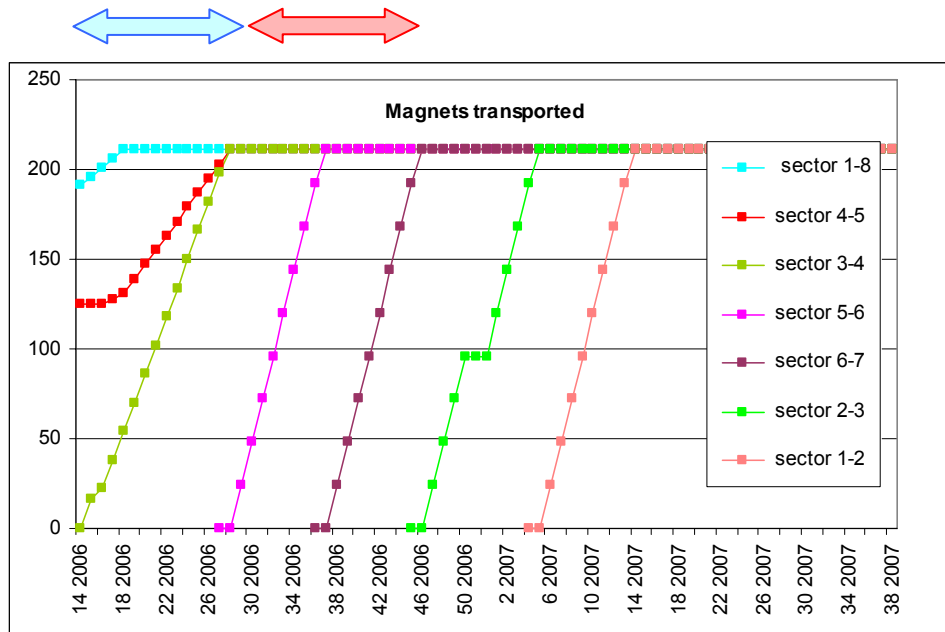
- Current situation of Interconnection (IC) work
- Importance of coactivity with transport
- 7-8 & 1-8 best scenario: new actions
- ... beyond 7-8 & 8-1
- Conclusions



- 3 independent teams (4-5, 8-1, 7-8);
- work is distributed in the sector (not concentrated), i.e. “interconnect what is available”;
- each team ~10 persons (19 kCHF/week type A) ~ slightly less than “2 contractual fronts”;
- since March 06, 9h/day, Monday to Thursday;
- Productivity per activity ~ 5-6/week-team, but no evidence of learning curve yet;
- “End” activities not yet tested in production;
- Effect of coactivity with transport: e.g. 7-8, weeks 11/06 to 13/06: lost ~ 10 kCHF/week.



Coactivity with transport





- until week 28/06 no coactivity:
(7-8 transport ends week 16/06
8-1 and 4-5 transport over weekend)
- but starting week 29/06 major problem of coactivity
(transport in 5-6)

➔ Coactivity is not satisfactory (on both sides)
Plan to avoid it entirely.

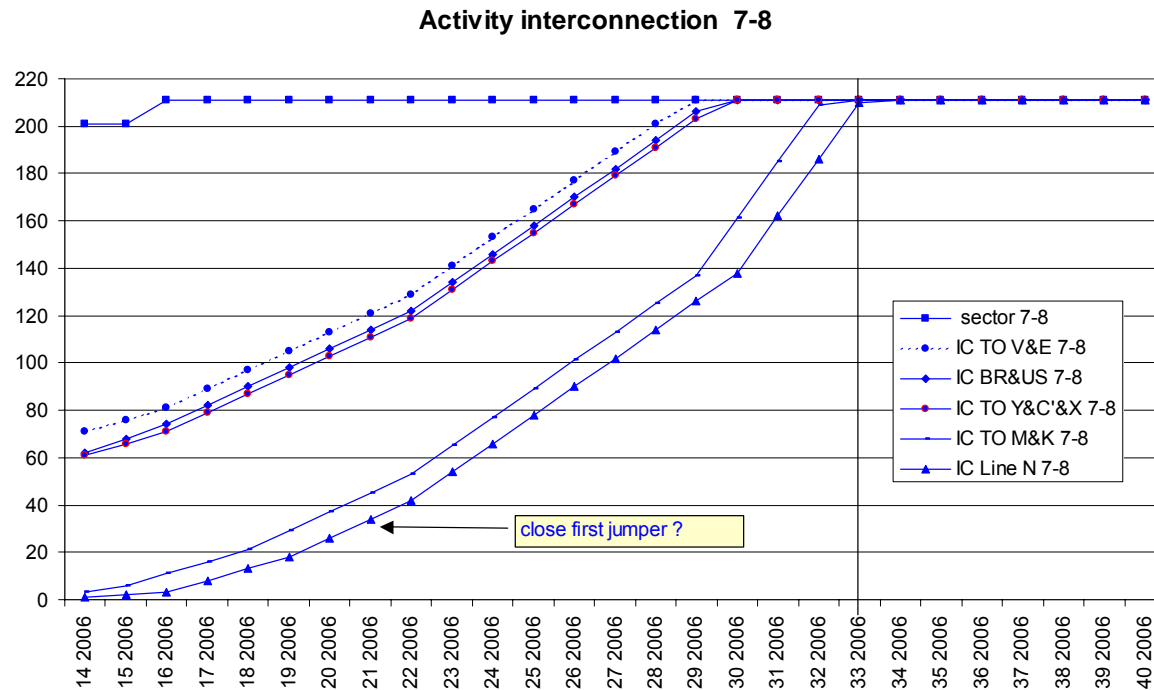
7-8 & 8-1 current best scenario (i/ii)

Conditions:

- avoid all coactivity with transport starting week 17/06,
- regularly leave all IC equipment in working position after work hours,
- “sufficient” workload ahead (i.e. magnets surveyed, closure of NC):
(≤week 12/06: ~ 5-10 available IC ahead;
week 14/06, i.e. today: ~ 20 available IC ahead)
- Consolidation - technical and productivity – from 5 to 8 activities/week-team:
e.g.: specialise welding (assembly& tacking, orbital welding);
adequate tooling (2 motors for V1/V2/E orbital welding);
ensure quality plan is actually followed (test welds, statistical analysis)
- Introduce new personnel for welding, 2nd shift starting May 2006
~ 3 additional tackers/welders per team 
- “end” activities are the critical path: start them ASAP (welds M and K, line-N, jumpers)
 end line-N week 42/06

To improve this:

- transfer resources 4-5 to 7-8 & 8-1 end May 2006 



➔ end line-N week 33/06



... but no margin (e.g. leaks in V1/V2 lines)

... beyond 7-8 & 8-1 ...

Also necessary:

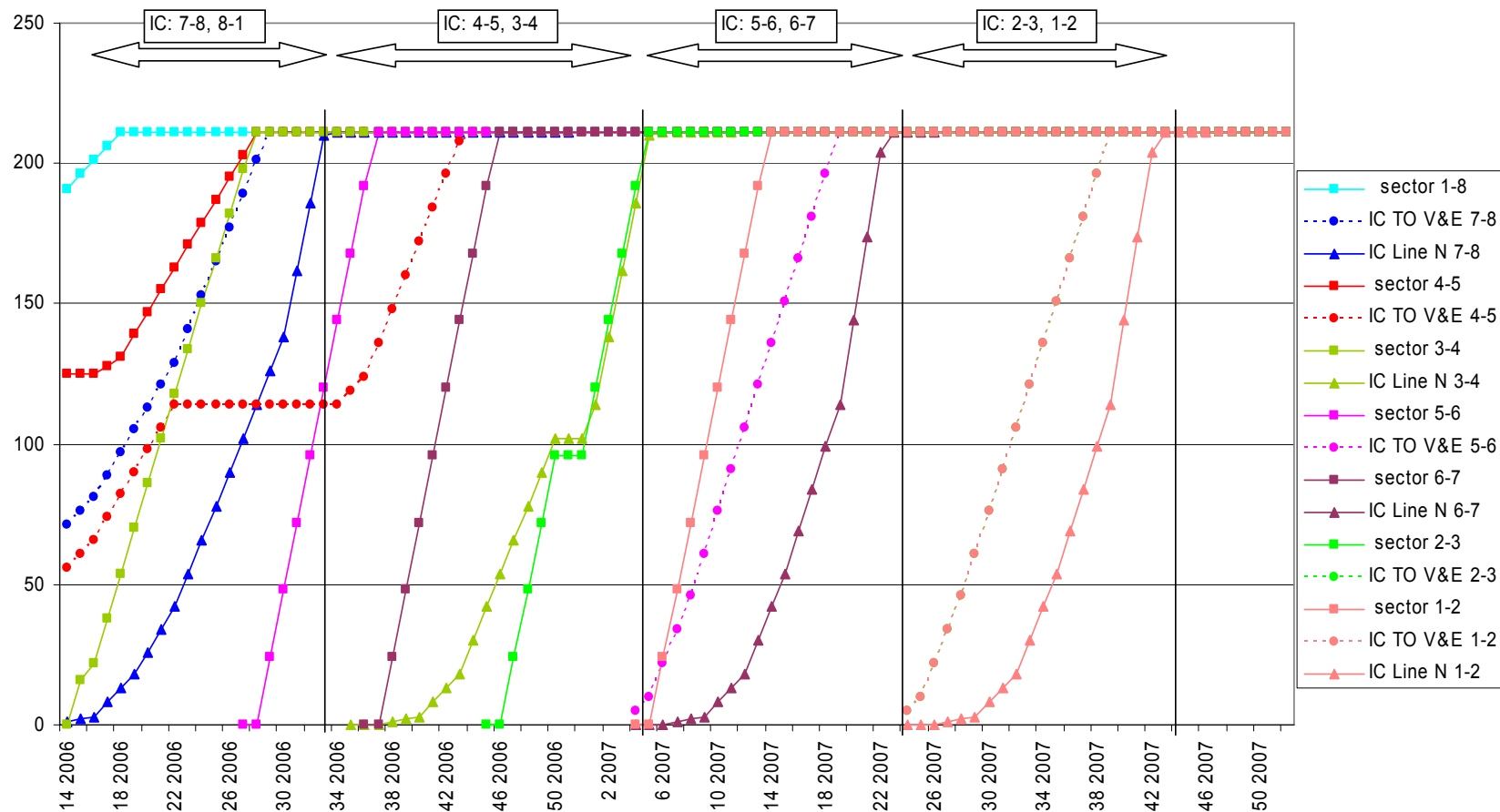
- Transfer to “lump sum” invoicing, WP 1A & 1B:
after consolidation to 8 activities/week-team for 3 consecutive weeks, i.e. end May
- need to use 4-5 until end May 06 for consolidation work

Further Conditions:



- starting week 34/06 interconnect work in 4-5 & 3-4
IC teams access from 3 pits 3, 4 and 5: transport 100% finished.
- no coactivity: all transport to 5-6 & 6-7 via 7-8 (!!!) 
- recommend – if possible - earlier start of transport in 5-6 (mid June)
- maintain interconnect work concentrated in two sectors at a time
(5-6 & 6-7 then 2-3 & 1-2)
- final increase in productivity starting January 2007 
from 8 to 10 activities/week-team
Friday work?
additional teams?

Overall scenario

Magnets transported and IC work finished



Conclusions

- Conditions for increase in productivity are becoming available now;
- plan for no coactivity with transport
specifically commitment during 7-8 startup end 2006 
- increase size of IC teams, 2nd shift for welding;
- planned increase in productivity is ambitious but realistic (but no margin);
- urgently start “end” activities;
- concentrate resources: 3 teams in 2 sectors (more is not realistic); 
- AT-VAC and AT-MEL “on board” (and others e.g. AT-ACR).

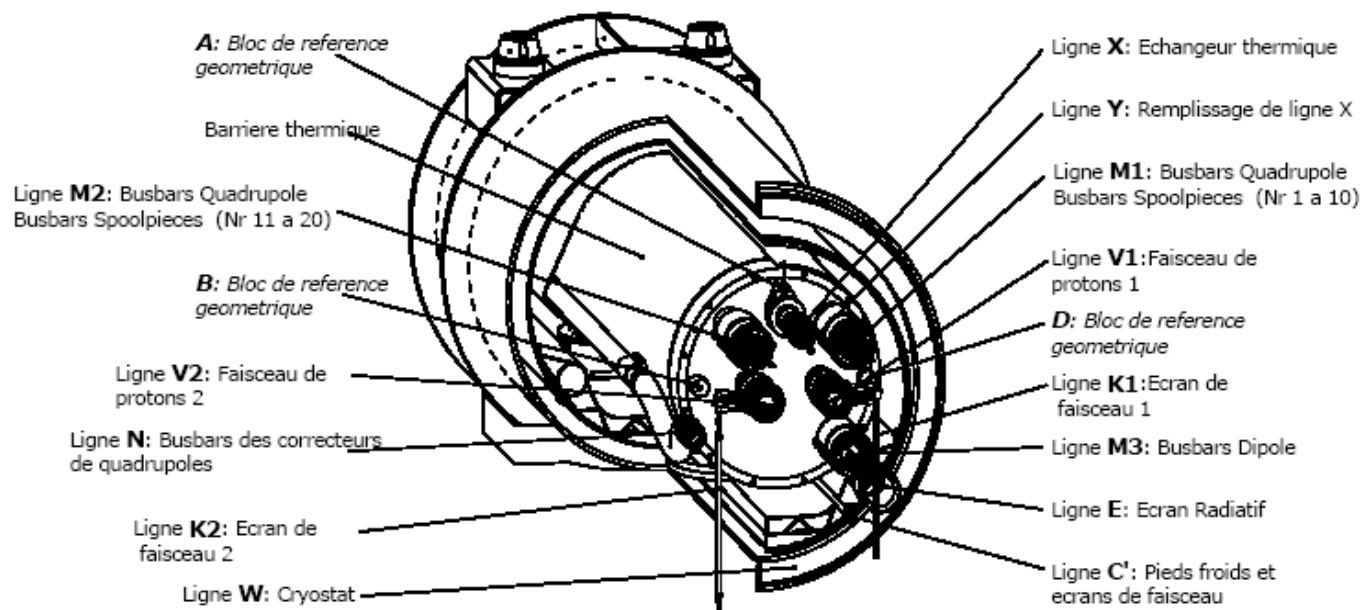
Thanks to: P. Fessia, J.P. Tock

TS/IC: P. Ponsot, S. Weisz

IEG: R. Menolascina, L. Vaudaux

Definition of lines

EXTREMITE DOWNSTREAM D'AIMANT DIPOLE LIGNES D'INTERCONNEXION



From A. Jacquemod