
TTC STATUS

- LEADE - 02/08/2004-
Sophie BARON
PH-ESS

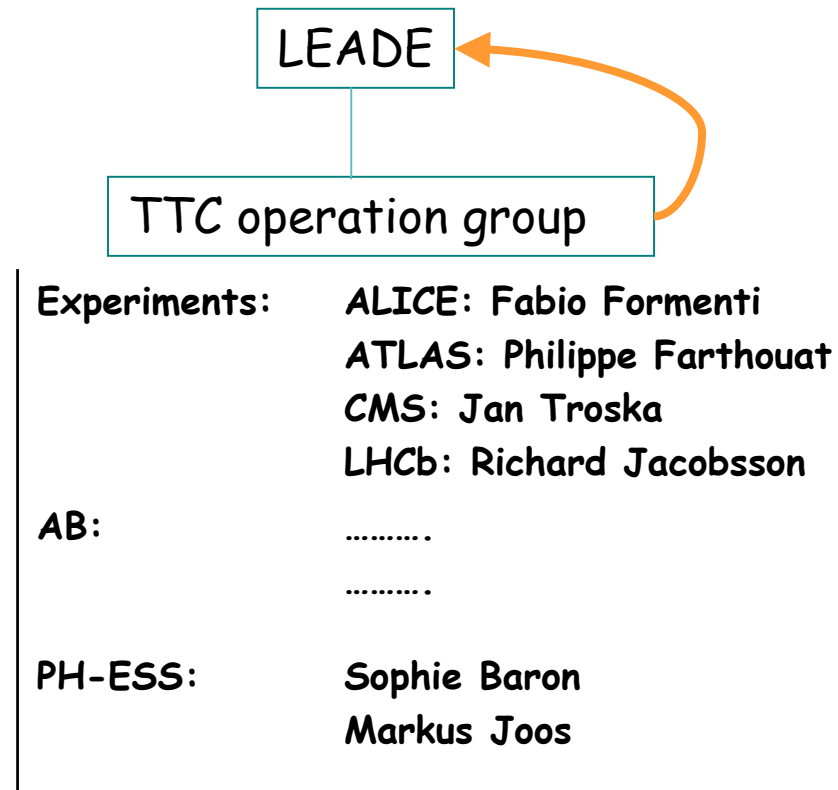
- Proposal for the support organisation
- Technical report
 - TTC modules
 - TTC global maintenance
 - TTC future plans

Organisation proposal - 1/2

- Hardware procurement and testing:
 - PH-ESS: M. Joos and S. Baron
 - PH-ATE: P. Gallno, P. Donnat
- TTC signal distribution from PCR to the experiments:
 - Timing signal provision to the PCR : AB-RF
 - Fibers: TS-EL
 - Encoders, transmitters, receivers & signal quality at the input of experiments: PH-ESS
- Support of TTC distribution within the experiments:
 - Experiments themselves

Organisation proposal - 2/2

- Technical discussions:
 - Lightweight group reporting to LEADE:



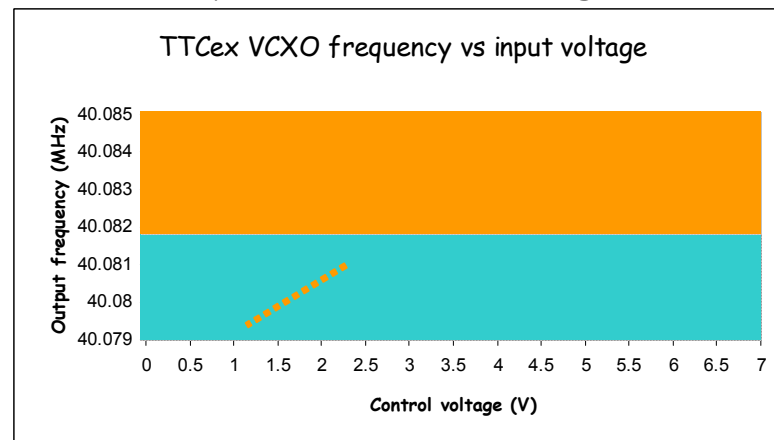
Technical report - modules 1/2

- TTC Modules:
 - TTCrq
 - Test System stability
 - Work with Paulo Moreira on stabilization of the system (add extra delays due to Qpll)
 - Yield improvement
 - ~11% failure in the last batch
 - 1/3 of the failure rate due to Qpll (soldering? Default?)
 - New batch of 2000pces in September

Technical report - modules 2/2

o TTCex

- Test setup installation
 - Use of Bruce's scope for jitter & phase measurement
 - Test procedure
- TTCrq/ex compatibility
 - Current stand-alone frequency: 40.0845MHz => out of the Qpll locking range
 - Replace the zener diode controlling the VCXO: 6.2V => 2.4V
 - » CLK = 40.0811MHz,
 - » Just inside the Qpll range ~ [40.0757;40.0816] (40.078686+-3kHz)
 - » Frequency track test is running



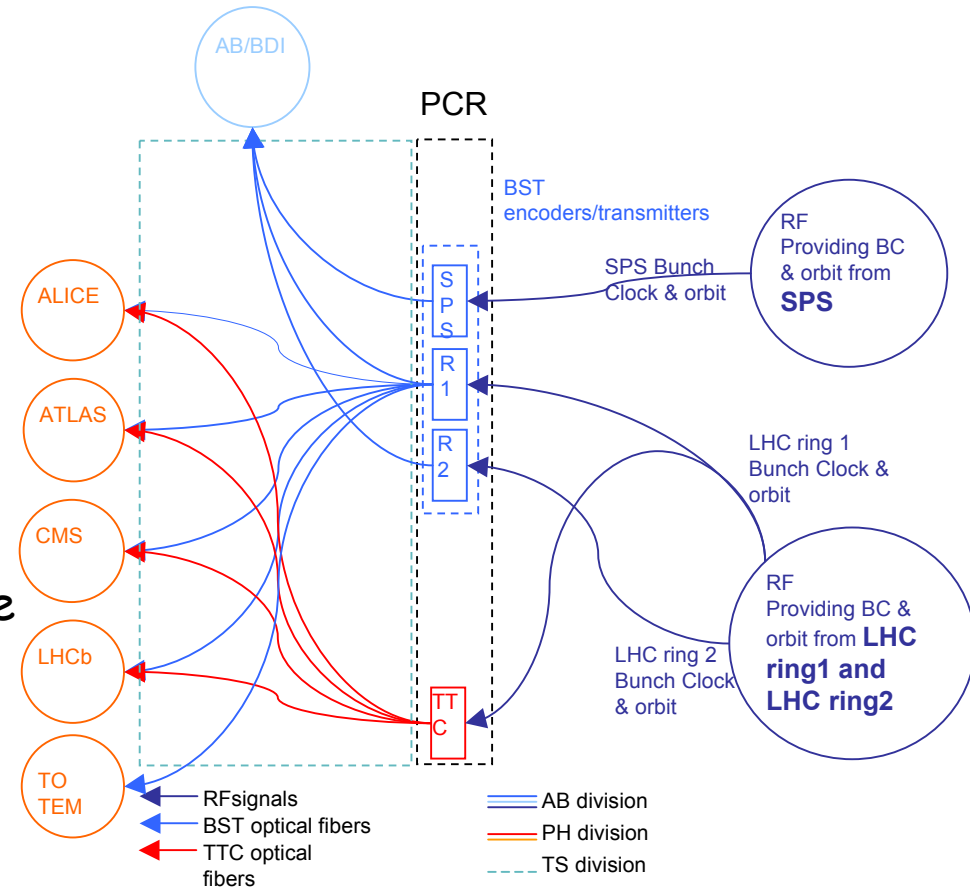
Technical report - global system 1/3

- TTC global system
 - 25ns run story (June 04)
 - Optical fibers were cut in BA81 => no signal at H8, H4 and H2
 - Many days to discover the origin of the problem
 - Conclusions
 - lack of diagnosis tools
 - coordination was really missing

Technical report - global system 2/3

o BST/TTC

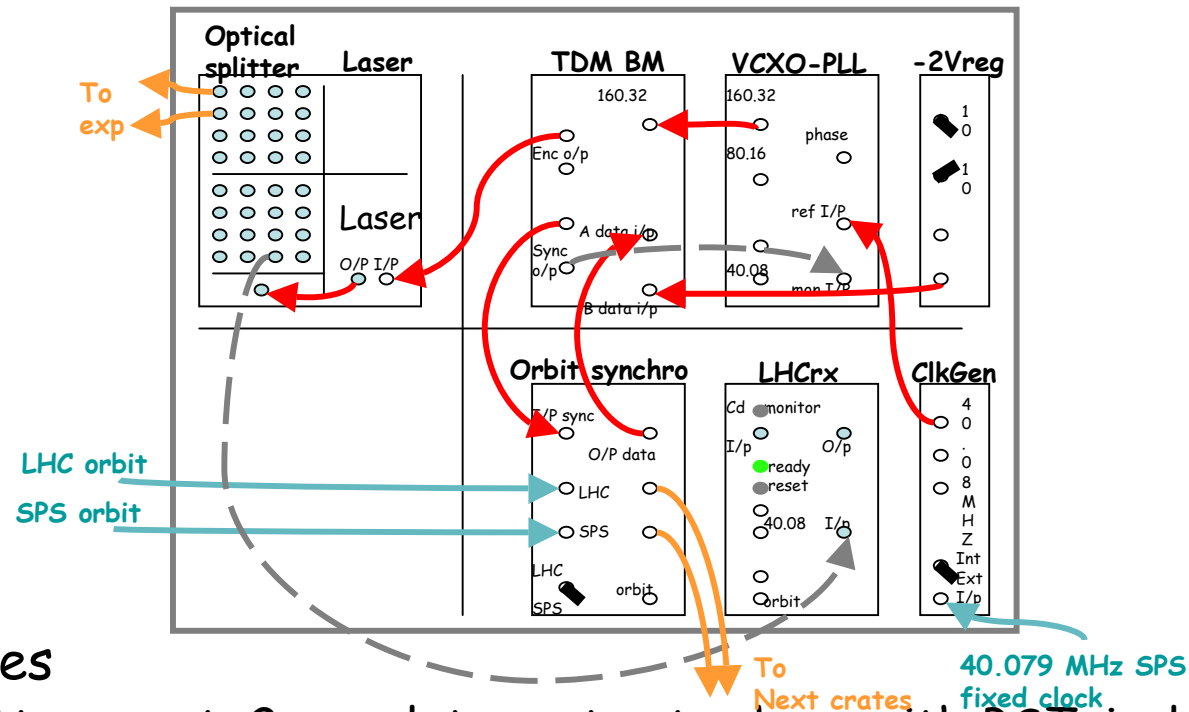
- 2 systems in parallel
- Same transmission protocol...
- Different needs in term of jitter
- BST upgrade in progress
 - 3 BST crates will be released soon
 - Collaboration with BST people would be very helpful



Technical report- global system 3/3

o PCR status

- Crates connectivity - well understood



• Spares

- At present: 2 complete crates to share with BST, including Hi-power laser
- Autumn: BST upgraded => no use of these crates anymore

Technical report - future plans 1/3

- Re-installation of the fibers patch panel in B4 => available mid-September (before the next 25ns run)
 - 4 single-mode, 4 multi-mode, from PCR to Build4
 - Support during the runs (mirror of signals received by experiments)
 - jitter measurement for TTC and BST
 - Evaluation of new developments
- Map of the overall optical connections
 - To be updated this week by TS/EL (Oystein Olsen)
- TTC mailing list
- New oscilloscopes for jitter measurement (Lecroy Wavepro 7100)
 - 1 GHz, 20/10 GS/s, 1Mpts/ch, 2ps jitter noise floor, jitter option
 - Purchase in progress,
 - 1 at ESS, 2/3 at Pool => contact Catherine Moine

Technical report - future plans 2/3

- Next 25ns run (5-8 October 04)
 - run with the current modules with the current spares
 - Coordination :
 - Correct diagnosis must be made by experiments
 - Check list to help them will be prepared
 - Spares will be available - to be shared with BST if not upgraded
 - Short term: S. Baron on call (160494) during the run for the TTC from PCR to experiment areas
 - Longer term: to be defined in the light of future hardware developments (local/remote diagnosis tools and procedures)

Technical report - future plans 3/3

- TTC system upgrade => discussion needed
 - Needs:
 - Remote diagnosis
 - Maintenance & support. No piquet available => need some intelligence in the system
 - Production of enough spares - technical support
 - 3 modules could be developed...following Bruce's philosophy...but with some remote control
 - Encoder
 - Transmitter
 - Receiver with TTCrq & diagnosis for maintenance
 - Collaboration with the BST people (AB/CO- AB/BDI)
 - BST system : an example of maintained system
 - Homogeneous equipment as much as possible
 - Common maintenance procedures/tools for persons on shift