LHC slow timing
implementations

LHC timing working group

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LHC slow timing

Possible ways to implement LHC slow timing

- Classical
- BST based
- Based on absolute time
- replaced by RT system

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Classical

- Standard MTG and TG8's

- Timing distribution into the alcoves (Cabling)
- Equipment groups to sort out how to distribute timing into the tunnel (if at all needed).
- Minimal software effort
- No hardware development

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BST based

- Use BI-BST distribution system to distribute slow timing

- New HW development to feed MTG events into BST
- Pickyback on BST timing cable
- Use BI developed equipment to pick up BST signals
- Some software effort
- New hardware development

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Based on absolute time

- GPS absolute time, Ethernet, WorldFip fieldbus

- PC group will solve the problem?
- Some HW development to create new timing receiver modules that work on the WorldFip bus.
- Major software effort (due to reliability)
- New hardware development

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Replaced by RT system

- Best solution: No more problems for slow timing*

- Do we need an RT system anyway for feedback?
- Or will we use slow timing for feedback?

* Note during the meeting it was mentioned that injection related slow timing signals can be generated by the SPS slow timing system. It is already foreseen to distribute these signals to the LH-RF.

LHC conclusions

- If you are going to do something fancy, try the slow timing ‘irradication’ first (use of RT system).
- BST options seems to be very promising, it has the advantage to distribute the events signals also to the experiments.*
- Otherwise, best bet is the classical system.

* Note: This point was made verbally and was not on the original slide.