Pixels' Preparation for Participation in Our
First Global Run

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Prerequisites for Participation in a Global Run

- ✔ **Pass the TTS Test with Global DAQ**
  - 25 October 2007

- ▪ **Pass the SLink Test with Global DAQ**
  - Scheduled for ??

Legend:

- ➔ **TTS** = Trigger Throttling System. If the FEDs begin to receive too many triggers and Slink overflows, these lines will be used to send signals to the Global Trigger to slow down triggers for us.

- ➔ **SLink** = The fibre bundle on which data from the FED comes.

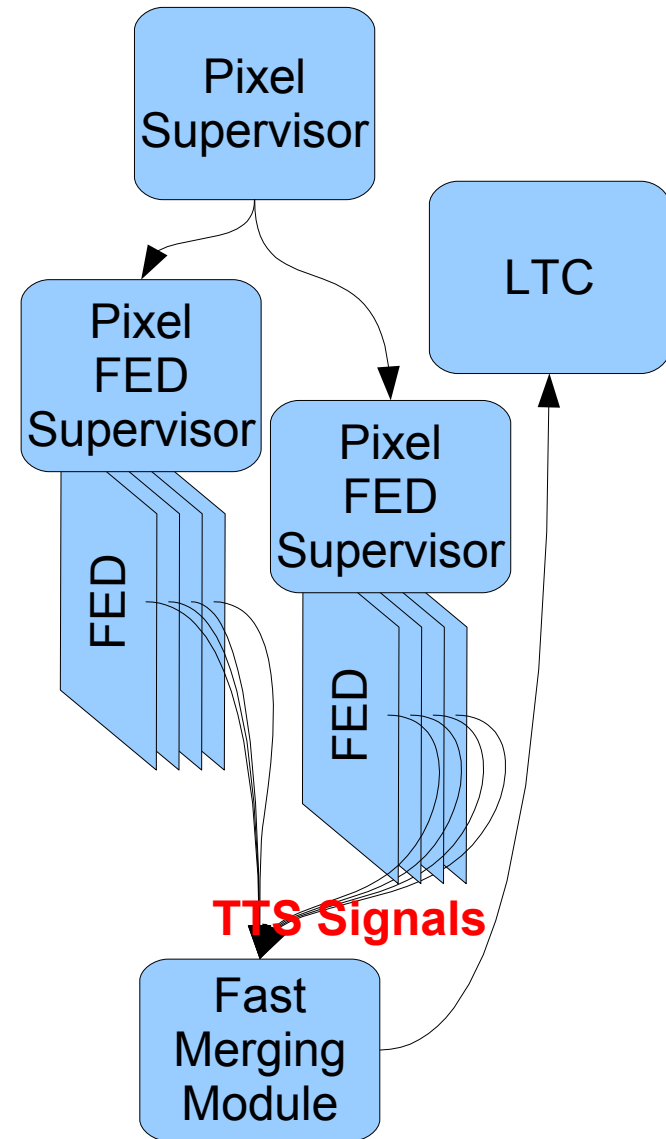# The TTS Test (aka the Connectivity Test)

- **Local TTS Test**
  - Two PixelFEDSupervisors could be used to fire TTS states of all 32 FEDs.
  - Monitor TTS states of all FEDs using the FMM Controller. FED ID 22 was seen to be broken. (Replaced now.)
  - Made sure that the merged TTS signal was reaching the LTC.
  - PixelSupervisor could be used to control both PixelFEDSupervisors. TTS states in all 32 FEDs could be fired from PixelSupervisor.
  - PixelFunctionManager could be used to spawn XDAQ Executives on 3 CPUs, load PixelSupervisor and two PixelFEDSupervisors in the appropriate CPUs. PixelFunctionManager could hence control PixelSupervisor and fire TTS states in all 32 FEDs. (At this point a DAQ Configuration had been created in the *Resource Service* Database.)

Pixel Supervisor

LTC

Pixel FED Supervisor

Pixel FED Supervisor

FED

FED

TTS Signals

Fast Merging Module

The TTS Test (aka the Connectivity Test)

- **Global TTS Test**

  ✔Registered our DAQ Configuration as part of the Global DAQ Configuration in *Resource Service* Database.

  ✔Allowed Global DAQ's Level 0 Function Manager spawn our PixelFunctionManager, PixelSupervisor and PixelFEDSupervisor.

  ✔Level 0 FM could send all possible permutations of TTS signals to all the 32 FEDs except # 22 and verified that TTS signals were seen at the FMM.

  ✔Pixels were certified to have passed the TTS Test.

Level 0 Function Manager

Pixel Function Manager

Pixel Supervisor

LTC

Pixel FED Supervisor

Pixel FED Supervisor

FED

FED

TTS Signals

Fast Merging Module

The SLink Test

- **Local SLink Test**

  ✔PixelFunctionManager now spawns PixelSupervisor, 2 PixelFEDSupervisors and a PixelTTCSupervisor on appropriate computers.

  ✔We can Configure and Start a "Physics" run from PixelFunctionManager.

  ✔We can send random triggers from the LTC (which will be controlled by the Trigger Group later) and immediately see data coming on all 32 FEDs with valid SLink Headers and Trailers.

  ✔We increased random triggers > 500 Khz to see if we can get TTS lines to fire, but in vain.

  ✔Working towards getting a payload with fake pixel-hits. Involves reviving the Baseline and Address Levels calibration using test-DACs. ~ 1 or 2 Days.