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The L0 system

L0 operational info. (Pixel chip, LV) can be found [here](#)

Recent L0 problems and solutions

- HV effects (especially ramping) often induces upsets in the L0 configuration. The symptoms are typically missing hits on the event display, vertical bars on the event display, FSM transition to ERROR or increase or decrease of column LV current. In some cases it is possible to recover by reconfiguring the affected boards, in other cases it is necessary to cycle the power on the affected boards. This sort of upset usually becomes less frequent once the HV has been stable for some time.

The L1 system

Team responsible for the operation of the RICH UKL1 system are Gareth Rogers, Hugh Skottowe and Steve Wotton. The number of the RICH readout operations mobile is 163837 From here you can find more information on the UKL1 system including:

- UKL1 controls (PVSS, FSM)
- The UKL1 hardware and firmware
- UKL1 tools and diagnostics

⚠The UKL1 crate may remain on overnight during the week but should be switched off when not in use for extended periods.

Here you can find the list of UKL1's together with the column positions to which they are connected in spreadsheet form.

Recent L1 problems and solutions

- [Believed to be fixed. Nov. 2007] Sometimes a GBE card will not initialise correctly after power up and no data will arrive from the corresponding L1 module. The symptoms are no data packets from the offending module which will probably result in "Incomplete event" messages that implicate a single L1 module whose status is otherwise OK. To fix the problem run the program ukl1-cfg on every L1 board after the power is switched on and you are able to log in. You should then reload the FPGAs on each board and reconfigure. Please try to contact the expert first before trying this as there are other possible reasons for "Incomplete event" messages.

Run control

Standard PVSS recipes

System	Recipe	Notes
TFC	R2_2HLT	Send MEPs to two farm nodes
TFC	RICH2V3	Send MEPs to one farm node
L0	PHYSICS	ALICE mode
L1	PHYSICS	ALICE mode

Special operating conditions for data-taking in ALICE mode:

- MEP packing factor (UKL1 control and ODIN control) must be set to 1
- L0 gap generator gap length (ODIN control) must be set to its maximum value (presently 15, for normal data taking the gap length should be 1).

Note that in ALICE mode, the throttle will be briefly asserted on *every* event. This is normal.

DAQ infrastructure

In case of problems:

- Try here for information about the DAQ infrastructure specific to Rich operation.
- 163837 for RICH DAQ problems
- 163730 for TFC (eg ODIN) problems
- 160703 or <mailto:lhcb-online-admins@cern.ch> for general DAQ infrastructure problems at IP8

Online monitoring

To start the presenter:

- Check that an X-server (eXceed) is running where you want to see the display (e.g. lb016w)
- Log in to the processor running the event builder (presently hlte0403).
- `export DISPLAY=lb016w:0`
- `source /group/rich/sw/scripts/Online_v3r3_Setup.sh`
- `HPDMonitor`

For more details see [here](#).

Running your own rich algorithms on mdf data offline on LXPLUS

for info click [here](#)

-- StephenWotton - 22 Nov 2007

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