Data validation: status report

- **Intro to consumer framework**
  - Why we use it
- **Organisation of silicon information (plan)**
  - Raw info
  - Cluster info
  - Track info
- **Work plan**

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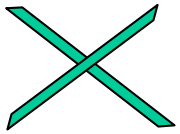
Consumer Framework

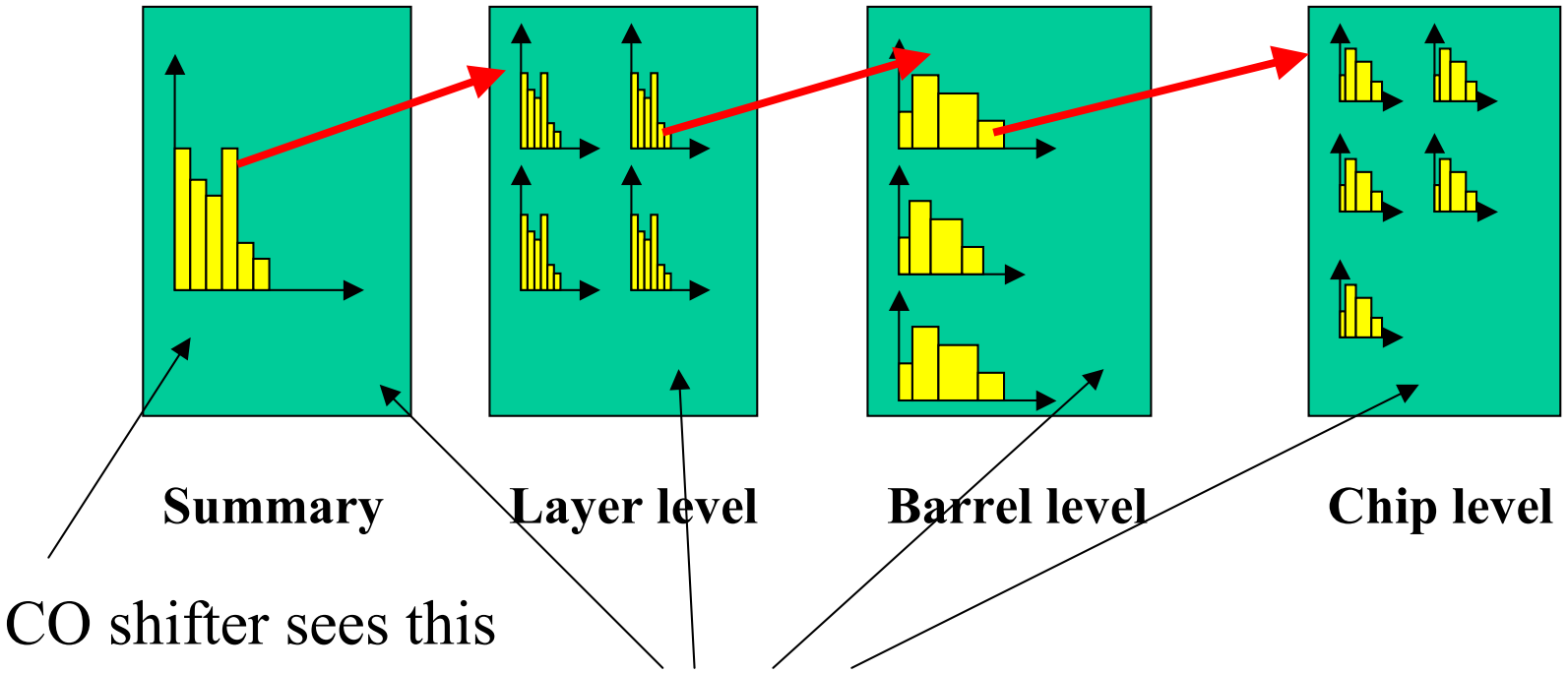
- **Provides method of accessing data online**
  - Make, fill histograms
- **Provides basic (root based) display package for viewing histograms**
  - Can be run anywhere and link to online histos via sockets
- **Provides basic checking (via CO shift)**
  - Make summaries, document

- **Display is basic**
  - Cannot implement logical organisation of information
- **Code can't be directly reused in validation job**
  - Cut and paste + offline coding issues



Organisation of information

- Foresee series of summaries of quantities:



Raw SI information

- Use output of SiStripSet
- Summary:
  - Mean ADC count / chip in each layer (8 histos)
- By Barrel :
  - Zoom in on one layer, see mean ADC count / chip by side and barrel
- By chip:
  - ADC counts + rms for each chip (128 channels)

Cluster information

- Summary:
  - Occupancy, extent, charge (all by layer), hitmap
- By layer:
  - As above, 2-3 chips/bin
- By barrel:
  - For each layer, barrel, side, 1 chip / bin
- By chip:
  - Channel occupancy, extent, charge

Track information

- Summary:
  - # tracks / event, # tracks with SI hits, pt, hitmap, charge
- By layer:
  - # SI hits / track, pt, hitmap, charge, residual
- By barrel:
  - # Si hits / track
- By ladder:
  - Residual
- By chip:
  - # SI hits / track (occupancy)

Work Plan

- **Finish filling histograms in this format**
  - Test CO shifter canvas, need feedback when ready
  - When done, put code into **production** module
- **Want to implement IFIX/ ORACLE monitor**
  - Voltages, currents, temperatures
- **Install online**
  - Test consumer on data stream, document CO shift actions
- **Expert display under development**
  - Root macros to allow easy expert navigation through histograms