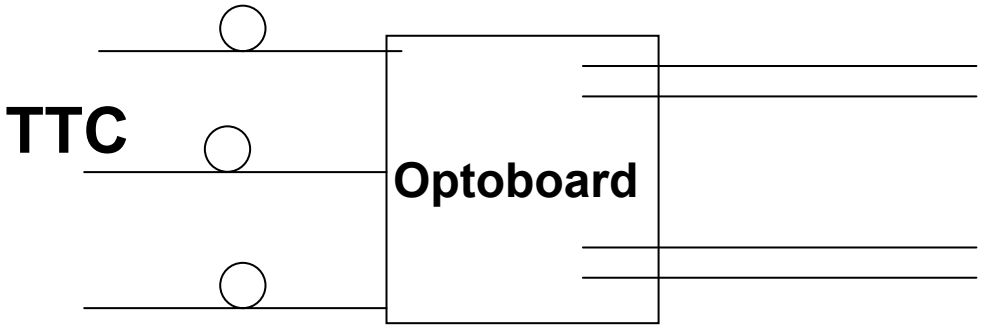
Speed & Number TTC Links for SLHC Tracker

- Questions to provoke discussion, no answers.
- What is possible?
  - Use Si PIN diodes for radiation hardness ➔ rise/fall time ~ 1 ns ➔ speed <~ 250 MHz ???
- What is required?
  - Trigger and Control data for each module
  - 40 MHz BC Clock

Parallel TTC Links

- **Scale up existing ATLAS Pixel architecture**

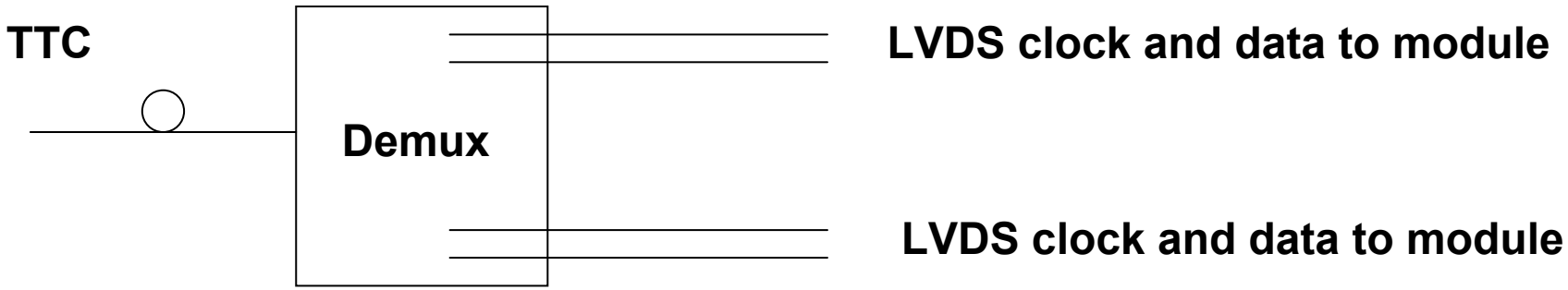


Advantages: simple low speed links ➔ decreased sensitivity to SEU, SEU will only change one bit of data.

Clock phase adjustment in counting room ➔ immunity to SEU

Disadvantage: large number of fibres ➔ cost and space problems ➔ not practical ?

High Speed TTC Links



Advantages: fewer links (cost and space)

Disadvantages:

Need n* 40 MHz (how big is n?)

Increased effect of SEU, could cause multiple bit errors ➔ error correction more difficult.

Need to adjust 40 MHz phase on detector ➔ sensitive to SEU