Phase II DAQ and "Scouting" Option

UXC

SXC

Level-1 Trigger & Event Manager

Passive optical splitters

Detector Front-Ends

~50,000 x 1-10 Gbps (xGBT links)
Trigger and detector data

Detector Back-Ends

DTC

DTH

L1 Input 100 Gb links

L1 Output Data

200 x 200 Gbps links
0.5-1 Tbps bundles

200 I/O processors
Real-time reconstruction and indexing

40-80
I/O Processors

~40++ Tbps Event Network

Large NV mem allows buffering ~10 min of data
Event network traffic limited to federation metadata

Processing cloud

HLT Farm

Offload farm

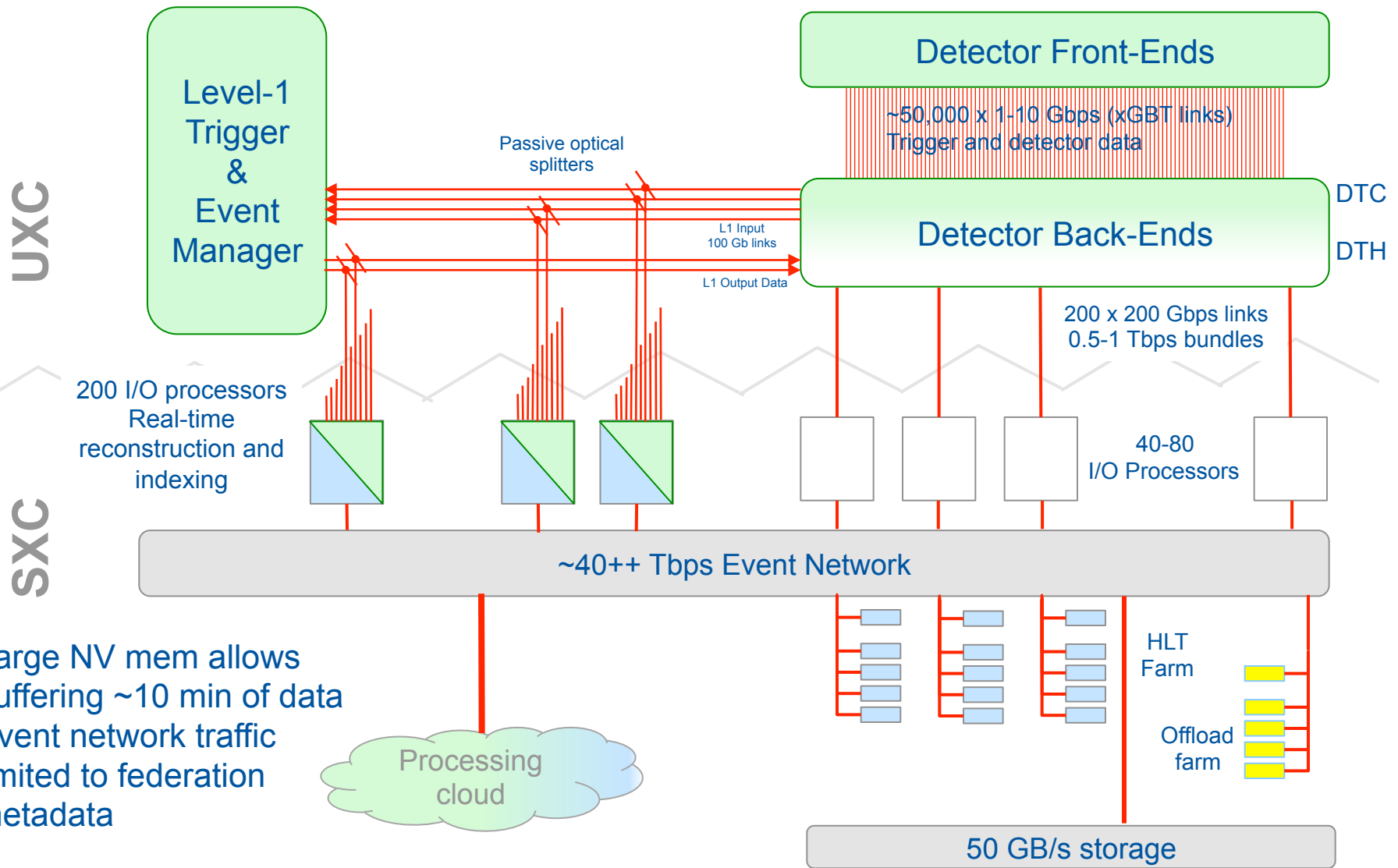50 GB/s storage

Final Remarks

- Baseline DAQ architecture for Run4 feasible with readily available technology

- Reduction of complexity and cost may result from tracking and late adoption of maturing technologies

- "Scouting" at 40 MHz may offer interesting physics opportunity

  - No need to build anything for day 1