

CODA SRO DAQ & DP

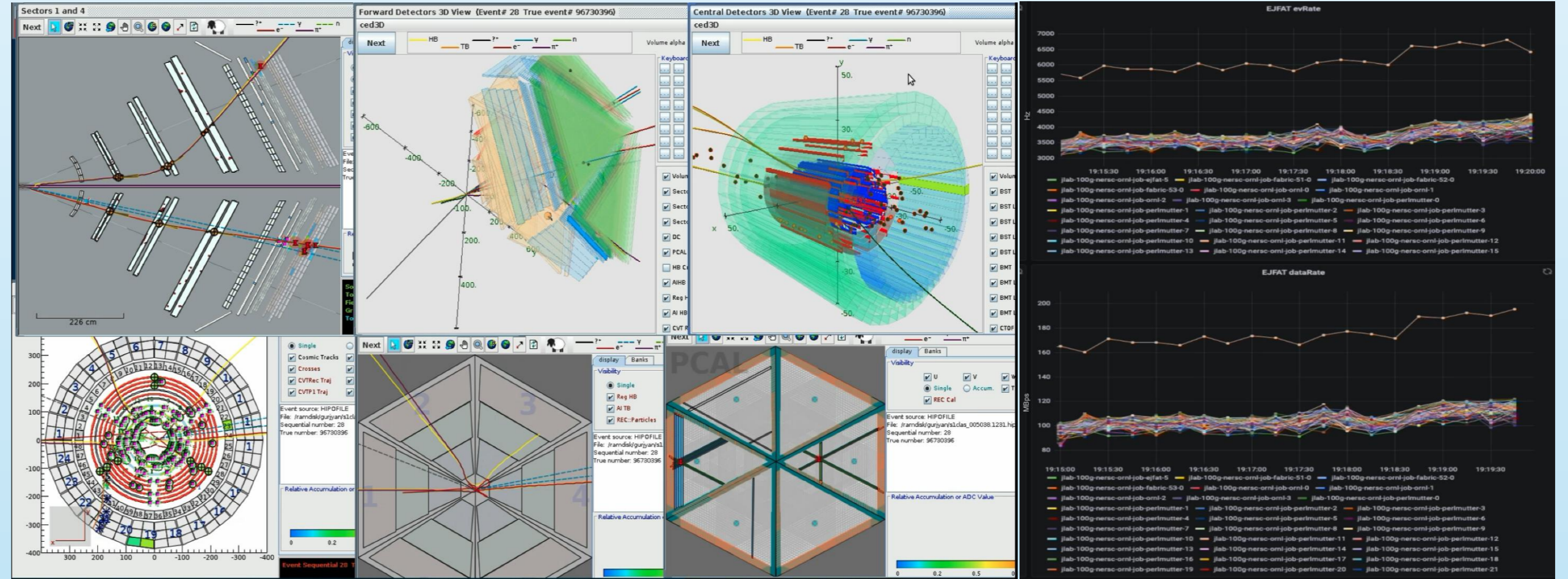
Data Acquisition and Data Stream Processing for NP Research

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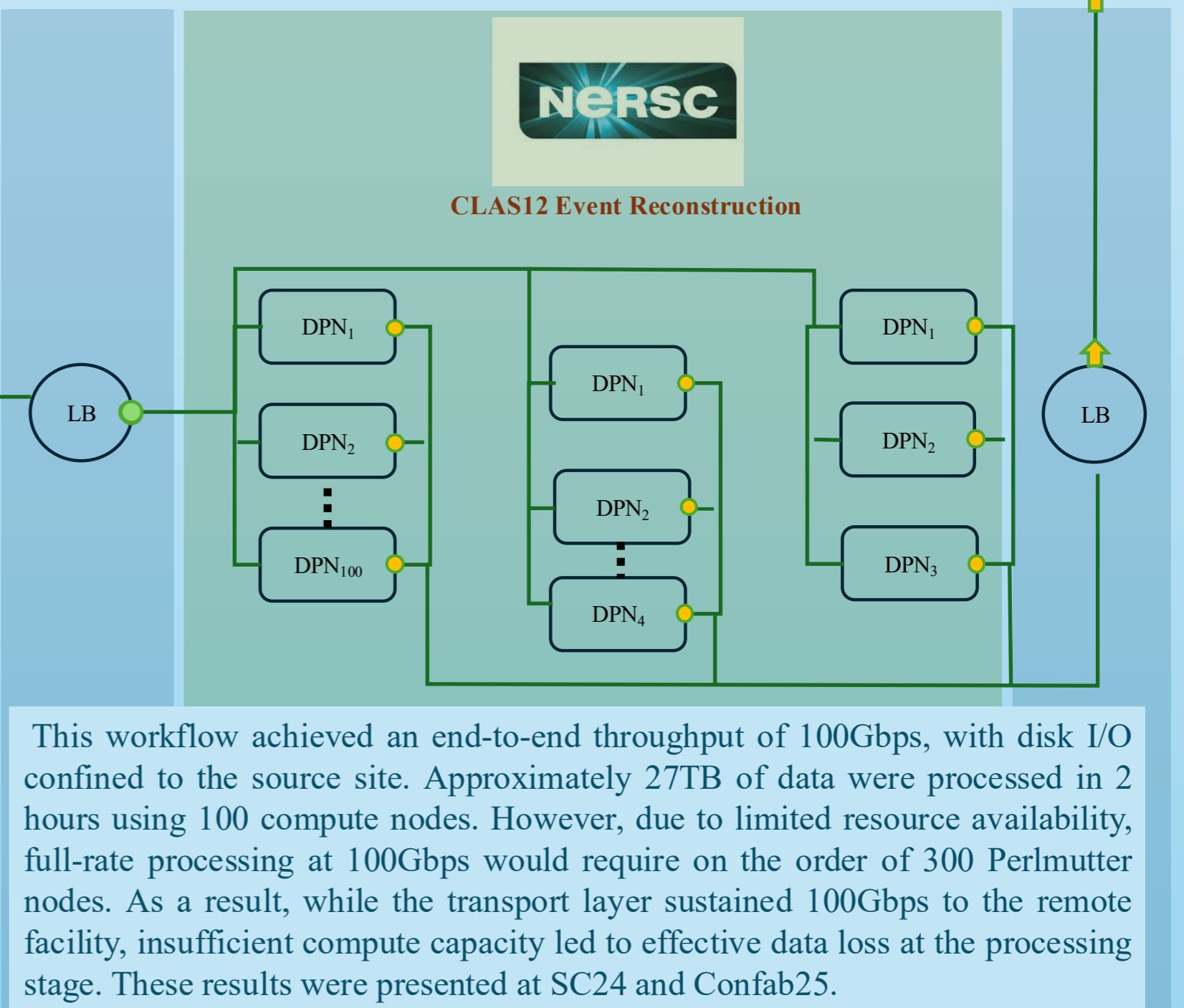
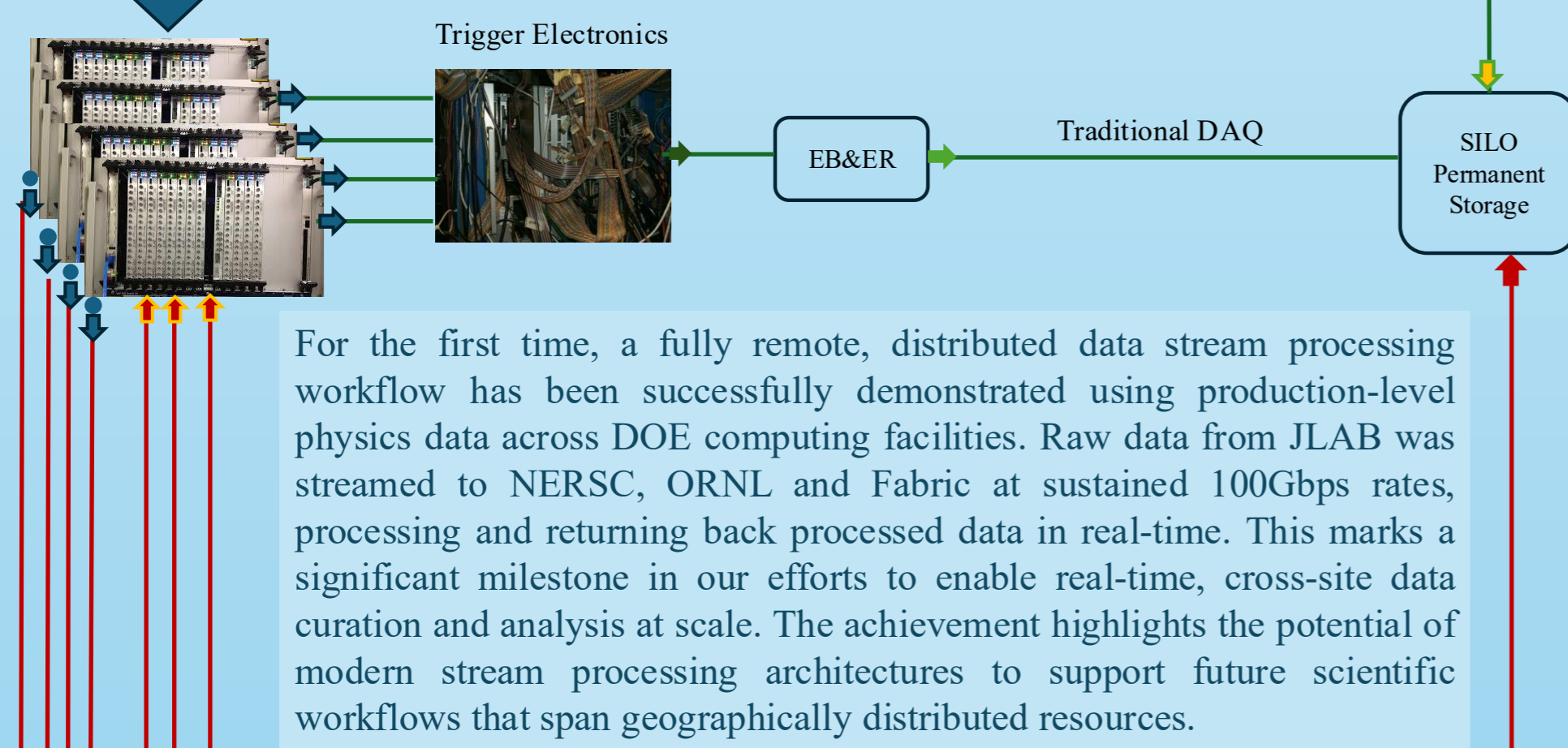


Software Stack

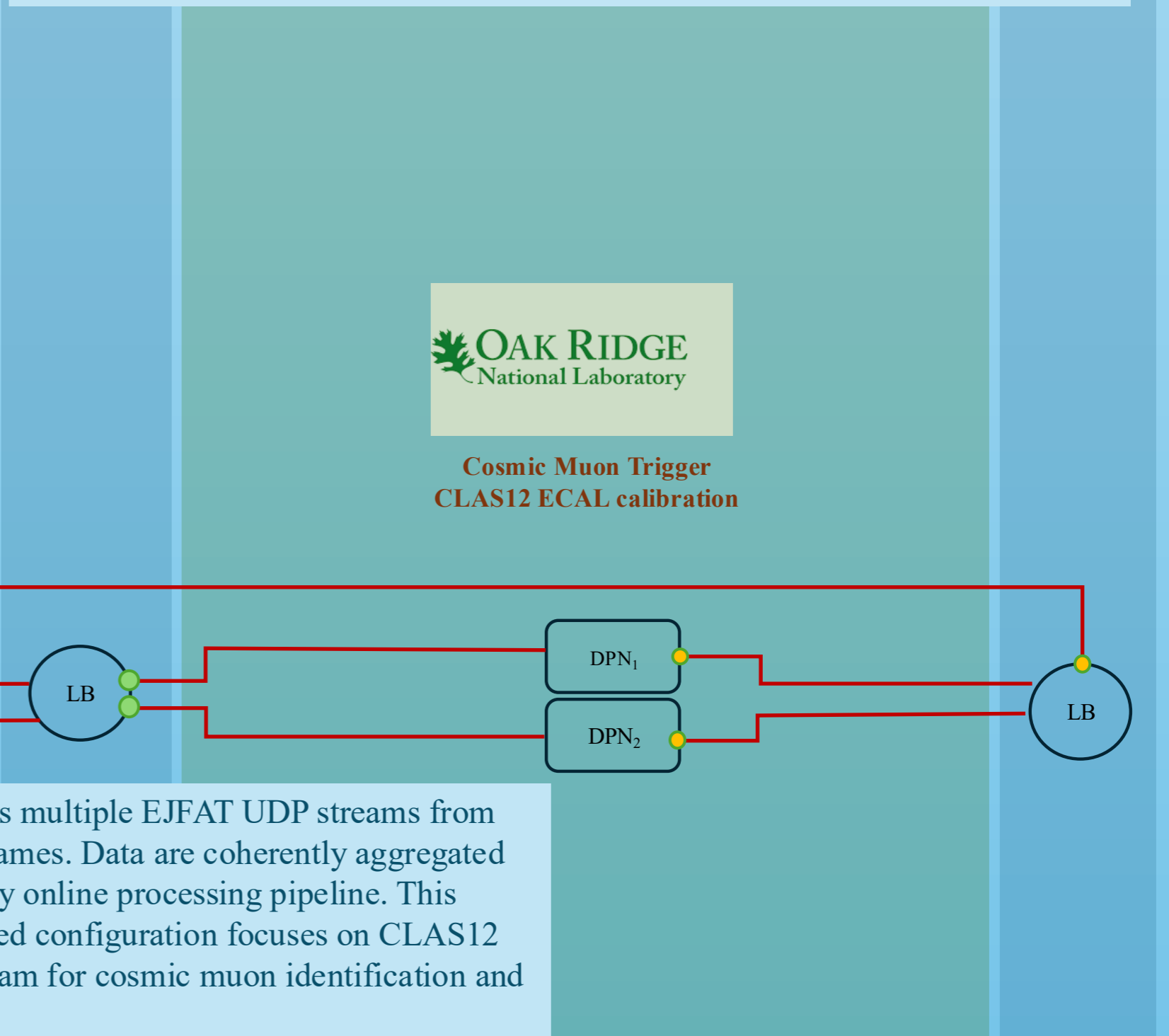
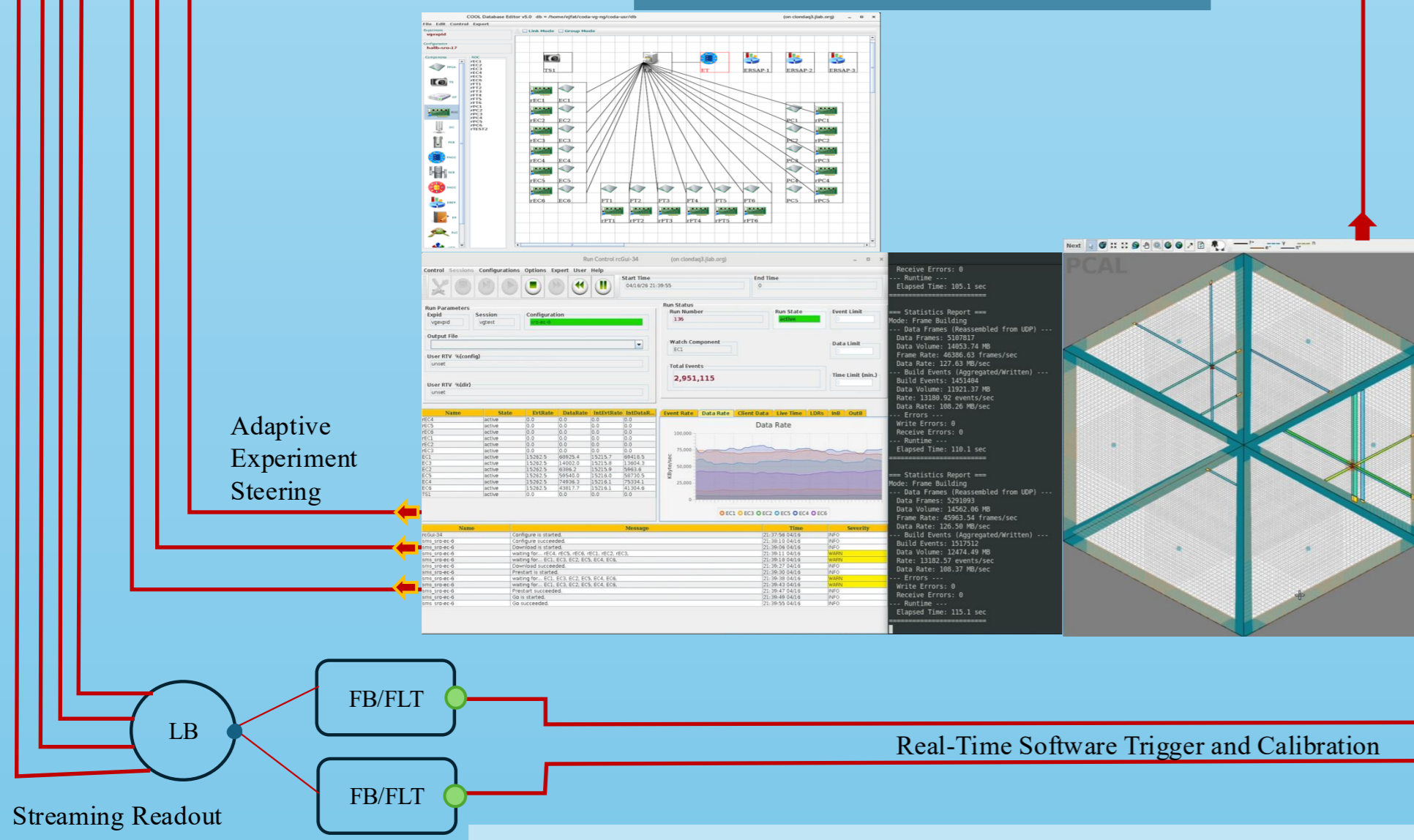
- CODA Data Acquisition
- AF ECS Run Control
- JCEdit CODA Designer
- ERSAP Data Processing
- E2SAR Transport LB
- JIRIAF Resource Manager



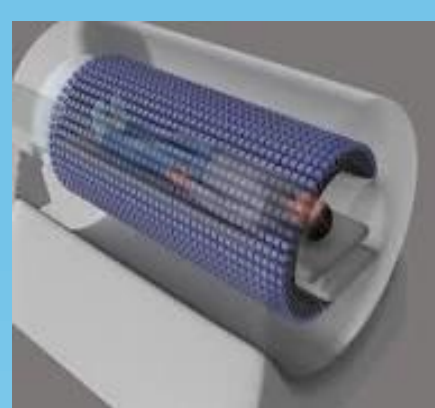
Online Distributed Data-Stream Processing Pipeline



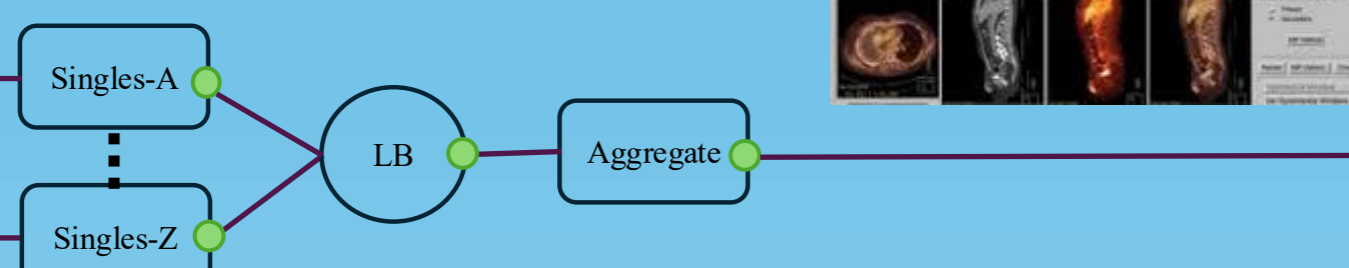
SRO and Online Calibration Pipeline



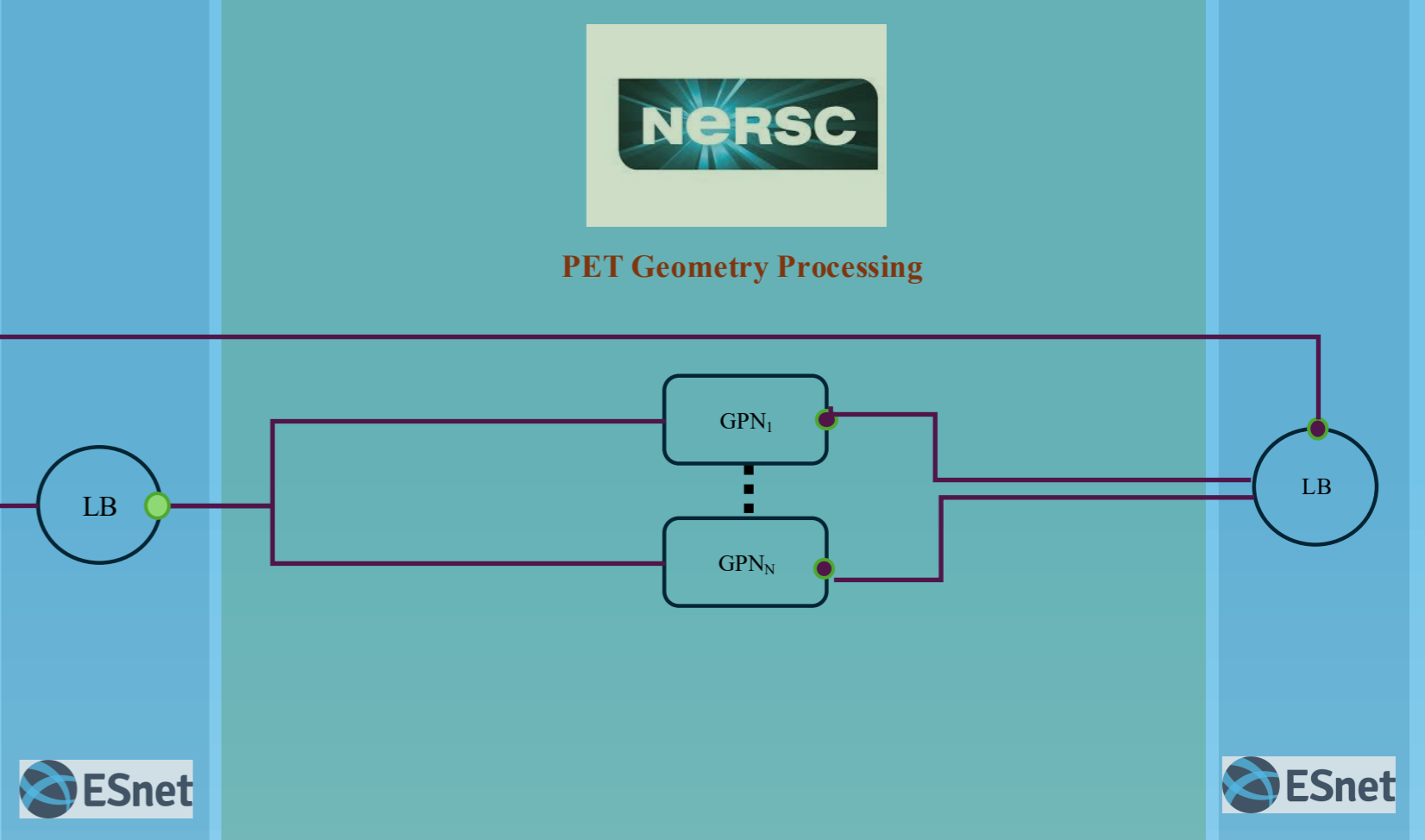
Whole-Body PET Detector Readout and Image Reconstruction



Whole-Body PET Imaging



PET Image Stream-Processing



Summary

The CODA data acquisition toolkit has been extended beyond traditional readout to incorporate high-performance data transport, load balancing, and a reactive actor-based processing framework. This enables the construction of end-to-end data acquisition pipelines, including acquisition, streaming, load balancing, and processing components, that can be deployed flexibly across local and remote computing environments within a unified, coherent dataflow architecture.



AmSC/Genesis Compute Infrastructure

