

# Streaming DAQ and Computing Milestones

## Streaming DAQ Release Schedule:

### PicoDAQ

FY26Q1

- Readout test setups

### MicroDAQ:

FY26Q4

- Readout detector data in test stand using engineering articles

### MiniDAQ:

FY28Q1

- Readout detector data using full hardware and timing chain

### Full DAQ-v1:

FY29Q2

- Full functionality DAQ ready for full system integration & testing

### Production DAQ:

FY31Q3

- Ready for cosmics

## Streaming Computing Milestones:

**Start development of streaming orchestration**, including workflow and workload management system tool.

**Streaming and Data Challenges:** Start streaming and processing streamed data between BNL, Jefferson, DRAC Canada, and other sites.

**Support of test-beam measurements, using variety of electronics and DAQ setups:**

- Digitization developments will allow detailed comparisons between simulations and test-beam data.
- Track progress of the alignment and calibration software developed for detector prototypes.
- Various JANA2 plugins for reading test-beam data required. Work started on an example.

**Autonomous Experimentation and Control:** Establish autonomous alignment and calibration workflows that allows for validation by experts.

**Analysis challenges exercising end-to-end workflows** from (simulated) raw data.

**Streaming challenges** exercising the streaming workflows from DAQ through offline reconstruction, and the Echelon 0 and Echelon 1 computing and connectivity.

**Autonomous Experimentation and Control:** Exercising autonomous alignment, calibrations, and validation.

**Data challenges** exercising scaling and capability tests as distributed ePIC computing resources at substantial scale reach the floor, including exercising the functional roles of the Echelon tiers, particularly Echelon 2, the globally distributed resources essential to meeting computing requirements of ePIC.

# Support of Test-Beam Measurements

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- List of deliverables and milestones

# Streaming Orchestration

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# Streaming Challenges (E0+E1)

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# Distributed Data Challenges (E1+E2)

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- List of deliverables and milestones

# Analysis Challenges (E3, using services at E1+E2)

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- List of deliverables and milestones

# Autonomous Experimentation and Control (Alignment, Calibration, Validation)

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- List of deliverables and milestones