DAQ and control for bubble chamber (2018)

Selected NI Labview for its development simplicity.
Migrate/reuse parts of old Labview code.

Reasons for upgrading:

1) Performance improvement by distributing tasks across various hardware solutions
2) Performance improvement by using faster/newer hardware
3) Support higher resolution and frame rates
4) Image storage optimization > remove image compression
5) Implement remote control natively via ethernet (webpage, host computer)
6) Improve code readability by distributing tasks across different platforms
7) Replacement parts availability
8) Immediate storing/transfer of data to shared location
9) Maintain/improve code
10) *Online data analysis in host computer

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Technologies available

1) CompactDAQ (older technology)
   Inexpensive.
   Compatible with many third party products.
   Measurement with sensors.
   Excellent for development.
   Simple projects.
2) PXI (mature)
   Industry standard.
   Huge ecosystem
   Test and prototypes.
   Complex projects.
   Expensive.
3) CompactRIO (new)
   FPGA native
   Best for unattended execution.
   Complex control and monitoring.
   Affordable.
   Rugged. Best for harsh environments.
   Needs host PC for deployment and monitoring.
   Development more complex.