

DOE DAQ and Trigger Workshop (10-11-17, UNM)

Full charge: <https://indico.fnal.gov/event/14744>

Summary:

- *Identify future DAQ and Trigger needs, both in terms of long-term future experiments and in terms of providing tools to support short- and medium-term detector R&D efforts.*
- *Identify promising technologies and techniques to address the needs.*
- *Identify opportunities for collaboration between organizations in future research.*

Agenda: <https://indico.fnal.gov/event/14744/timetable>

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Technology Topics for Future Consideration

1. Common warm RF electronics control/DAQ for future CF experiments
2. Rad-hard, high-speed optical components
3. Wireless communication for data transfers
4. Optimum locations in the data stream for compression & filtering (closer to FE)
5. Coprocessor investigation and development (more from Jim K).
6. Deep learning on FPGAs/High Level Synthesis code methodology

Productivity Topics

1. Collaborative firmware development
2. Common IP libraries (community specific, not just vendor supplied)
3. Common test beam and test stand tools and support

1st Workshop on R&D for Exp. Techniques(3-16-18, CERN)

Working Groups Include (but not limited to):

- *ASICs and IC Technology*
 - *Close connection to FPGAs*
 - *Investment in training to get past 28 nm technology step*
- *High speed links (optical and electrical)*
- *Software*
 - *Evolution of existing massive code bases to seed future development*
 - *High rates require efficient high speed data reduction pipelines*
 - *Techniques from other fields (e.g. data science)*

- Agenda: <https://indico.cern.ch/event/696066/>