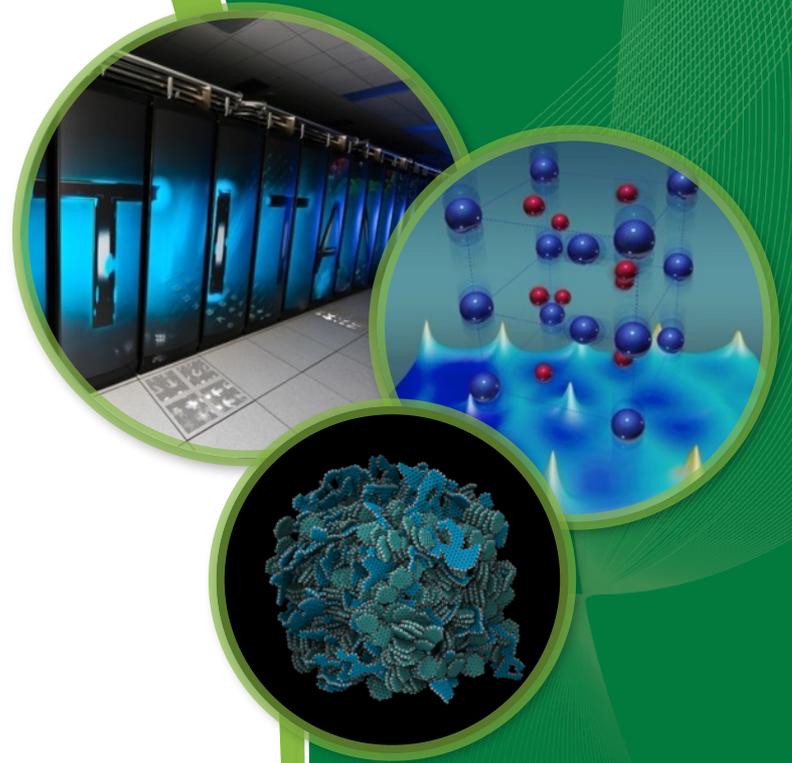


# 2016 DAQ Satellite Workshop - Introduction

Robert Varner



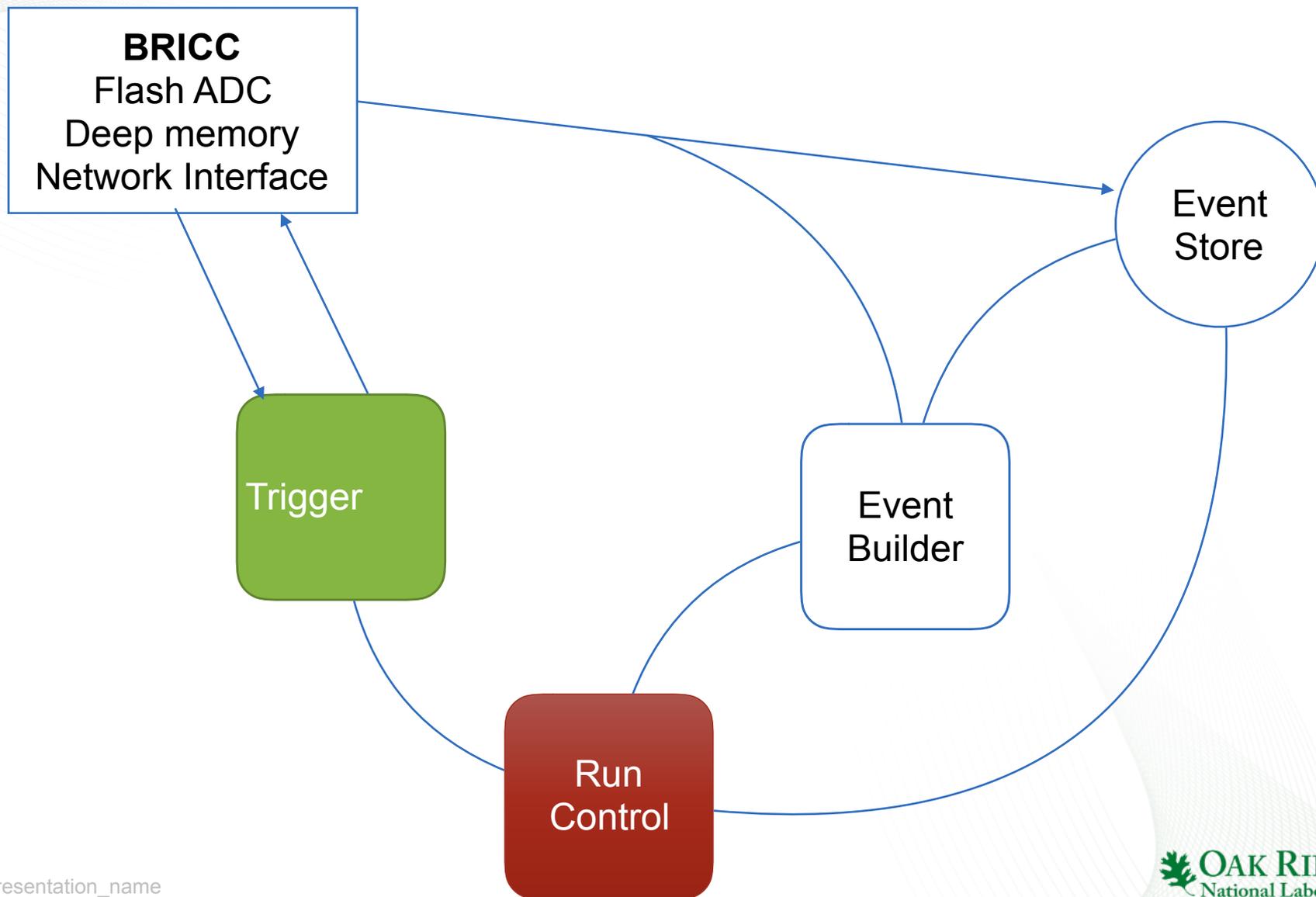
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# How the DAQ Working Group works

- **We are not here to prescribe how you take data**
- Outside the FRIB management - we seek
  - Community efforts
  - Consensus initiatives
  - Across all the working groups
- DAQ development is not funded by the construction project
  - 2 FTE's in the NSCL staff.
  - Evolutionary changes in network, computing, storage
- But we and researchers have new ideas!
  - What are the **requirements** likely to be in **five years**?
  - What are the **technologies** likely to be in **five years**?
  - Can we find shared interests to attract the resources needed?

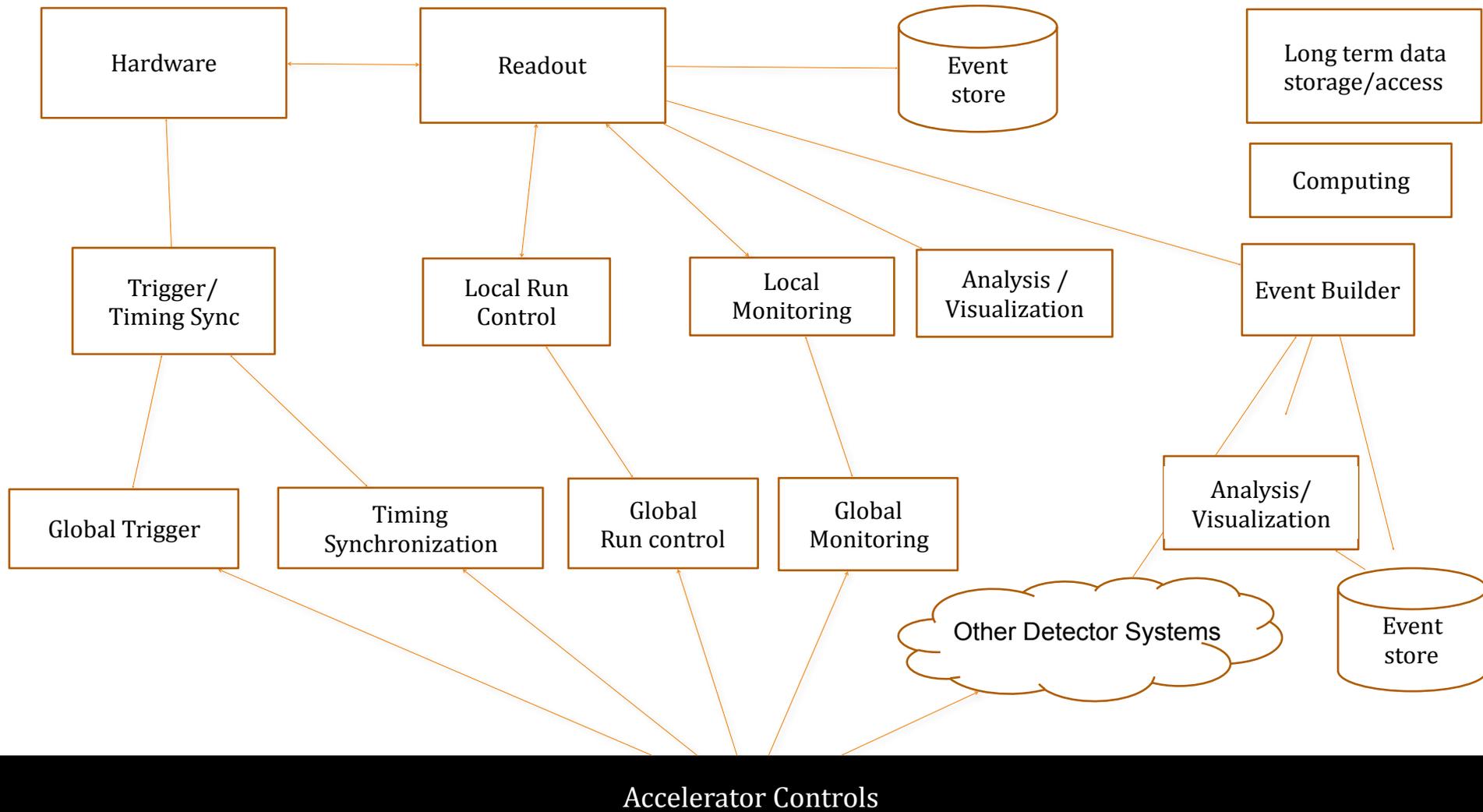
# Reference architecture



this architecture

- (1) synchronize clock phase across all channels to nanosecond or sub-nanosecond precision,
- (2) synchronize time stamps across all channels to 10 ns precision or better,
- (3) determine a global trigger from information transmitted by the individual digitizer elements with minimal latency,
- (4) notify the digitizer elements of a successful trigger, in order to locally store the validated data;
- (5) collect event data from the individual elements to be assembled into events; and
- (6) develop software tools to monitor and validate the synchronization, triggering, and event building during normal operation.

# FRIB Conceptual Experiment Diagram



# How does this meeting work - Agenda

- <https://www.phy.ornl.gov/fribdaq/> -> Workshops tab

Topic	Speaker	Time
Introduction	Robert Varner	1:00
Summary of July 2015 DAQ workshop and user community input	Robert Varner	1:10
<b>Working panel updates</b>		<b>1:30 PM</b>
Beamline and accelerator controls interfaces	Jeremy Tompkins	1:30
Timing and synchronization	Robert Varner	2:15
Discussion of future panels	TBD	2:45
Break		3:00
<b>Community contributions</b>		<b>3:30 PM</b>
"High Performance Digital Electronics with Embedded ARM and Linux"	Wojtek Skulski (U. Rochester)	3:30
"An Overview of UTK Software Development"	Stan Paulaskas (U. Tenn)	3:40
"DAQ and Data Analysis needs for the SpiRIT TPC"	Betty Tsang (NSCL)	3:50
<b>Computational, network and storage resources for FRIB experiments</b>		<b>4:00 PM</b>
Introduction	Ron Fox	4:00
Discussion	Jeremy Tompkins	4:10
<b>Planning for data analysis in the FRIB era</b>		<b>5:00 PM</b>
Introduction and discussion	TBD	5:00
<b>Connections with Commercial Vendors</b>	<b>TBD</b>	<b>5:45 PM</b>
<b>Adjourn</b>		<b>6:00 PM</b>

# How This meeting works

- Every presentation is open to questions and discussion
- The meeting is designed to highlight what we
  - Have done
  - Plan to do
  - Need to do
  - Did not yet realize we should be doing....