

MicroBooNE Status

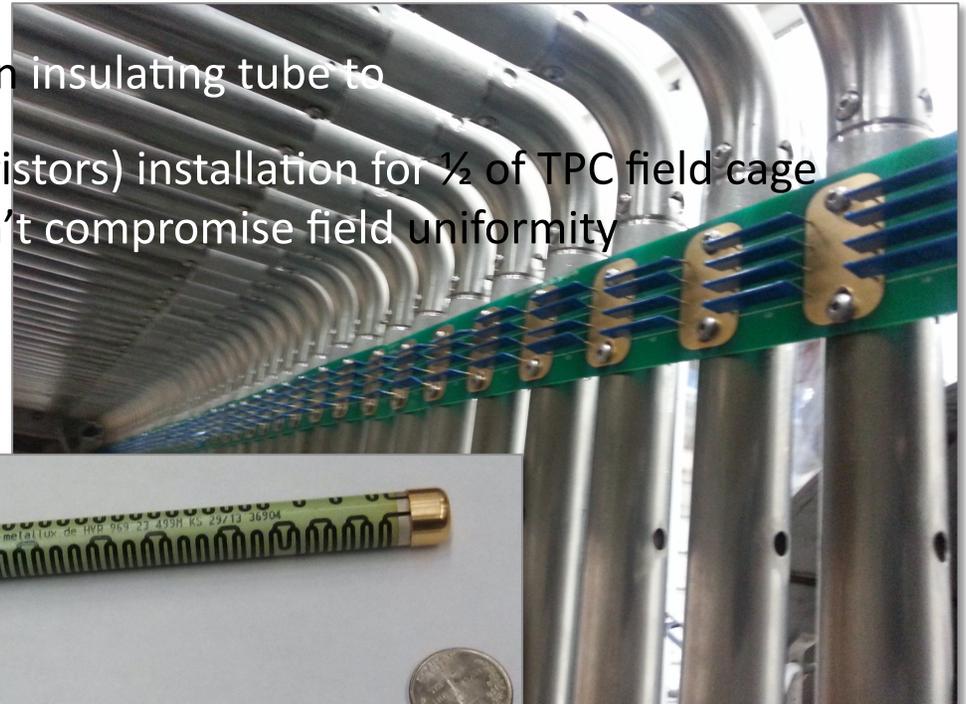
Georgia Karagiorgi, Columbia U.

Fermilab AEM

April 14, 2014

Current MicroBooNE status

- Awaiting cryostat/TPC completion and installation at LArTF
- At DAB: Tests are progressing to implement recommendation to address risk of potential failure of Slim-Mox field-cage resistors:
 - Potential risks due to HV breakdown
 - Recommendation:
Replace each Slim-Mox resistor for $\frac{1}{4}$ of TPC field cage with two 500M Ω Metallux 969.23 “Zebras”
 - Considering encasing the zebras in insulating tube to prevent tube-to-tube sparking
Considering surge-protection (varistors) installation for $\frac{1}{2}$ of TPC field cage
We need to establish that we don't compromise field uniformity
 - Will weld cryostat endcap once we are satisfied with implementation of above recommendation(s)

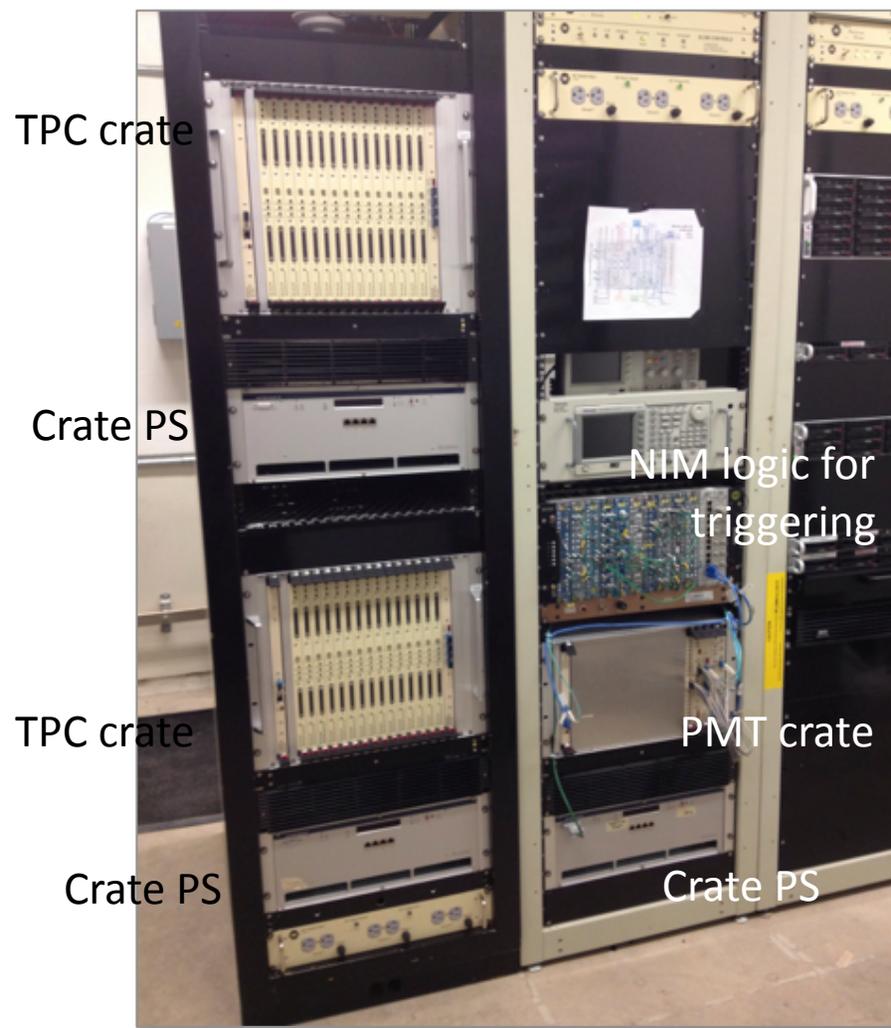


Current MicroBooNE status

- At LArTF:
 - See AEM talk 3/10 for Cryo System operations
 - DAQ installation almost completed
 - Preparing for electronics and readout hardware installation, which follows cryostat installation



Readout Test Stand at LArTF (DAQ room)

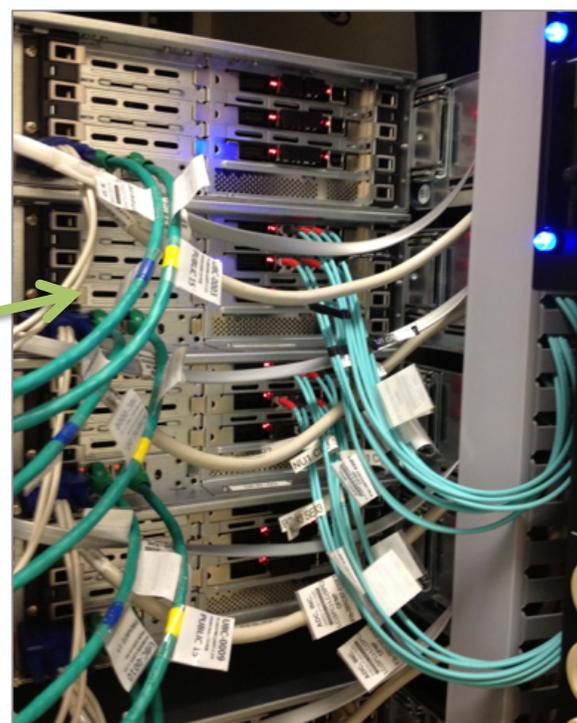


Readout Test Stand at LArTF (DAQ room)

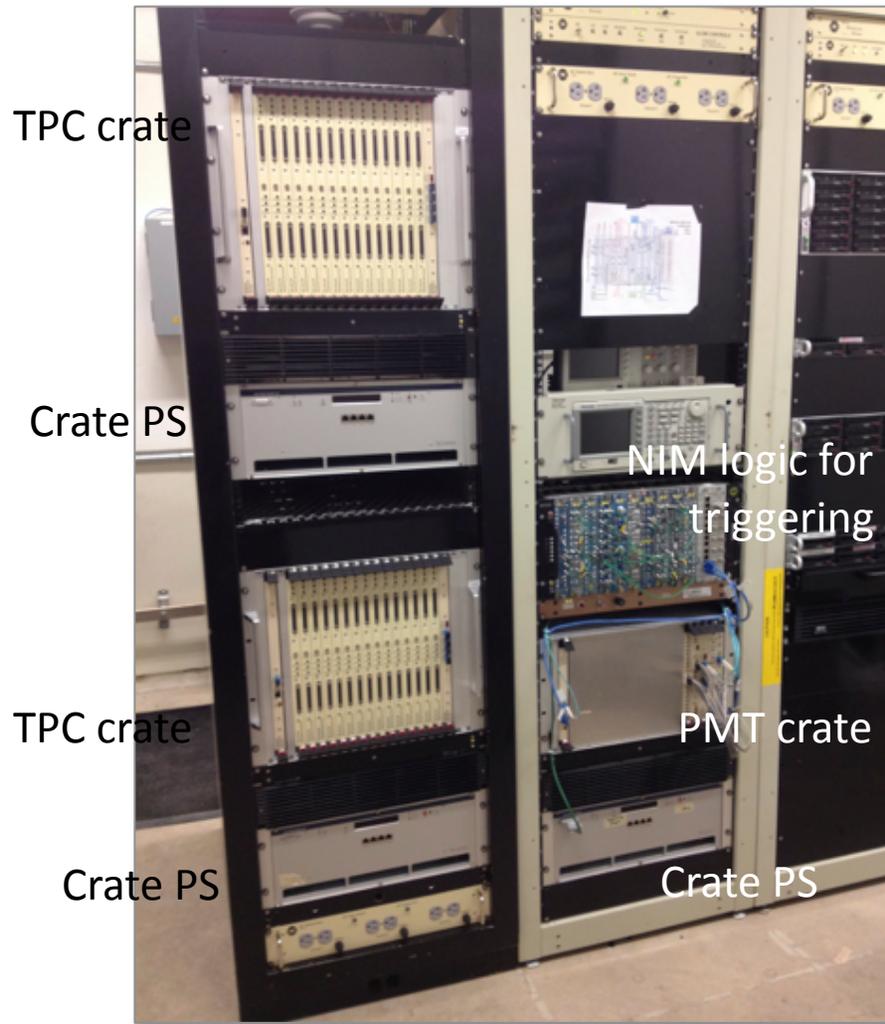
Each one of TPC/PMT readout crates...



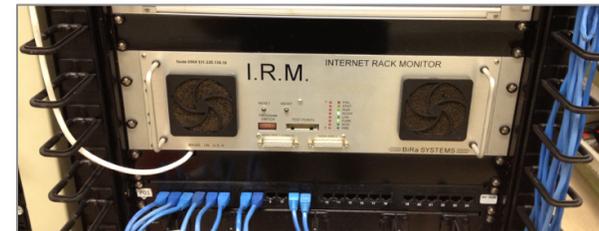
is read (optical data) by a dedicated DAQ machine



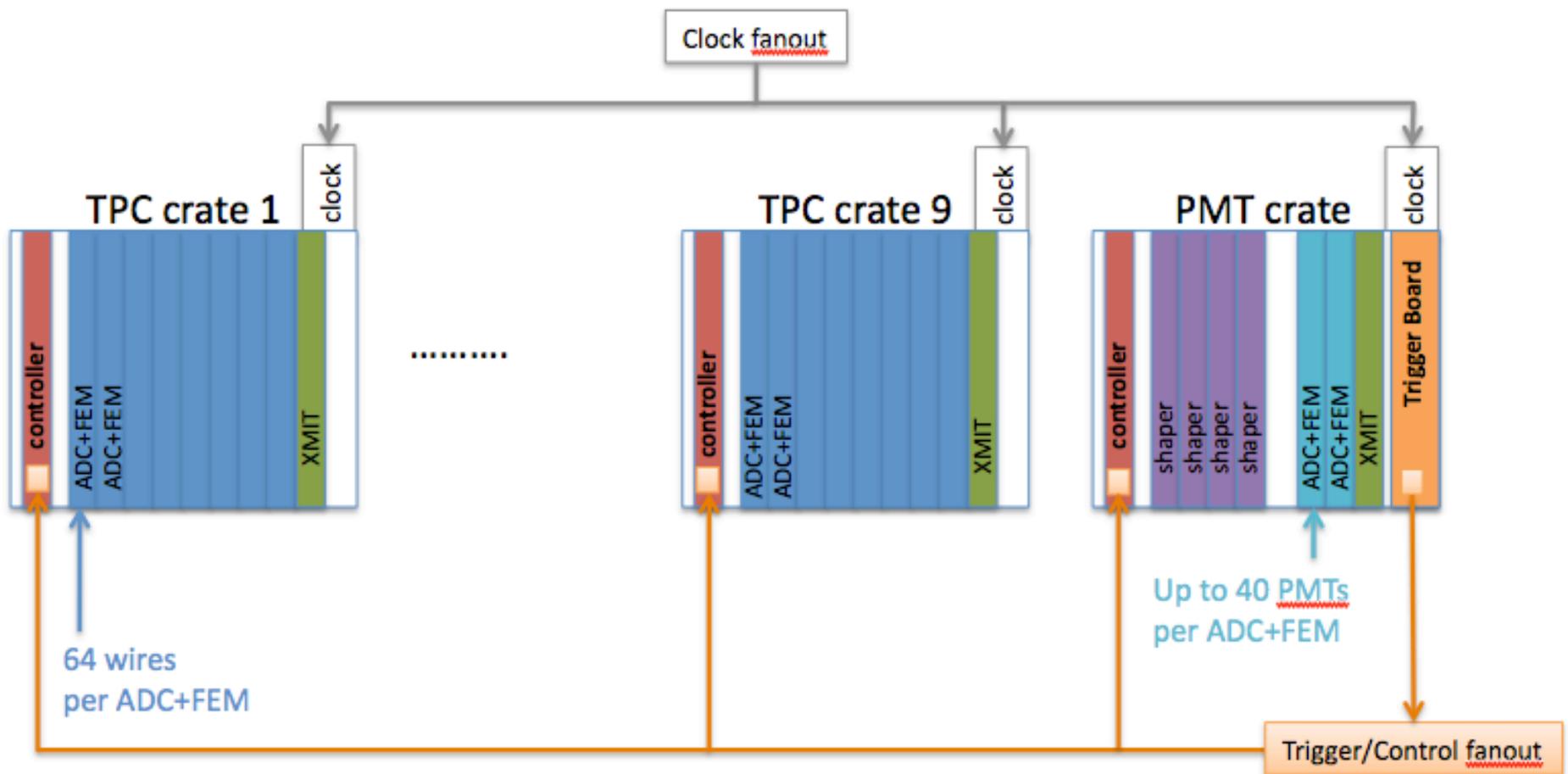
Readout Test Stand at LArTF (DAQ room)

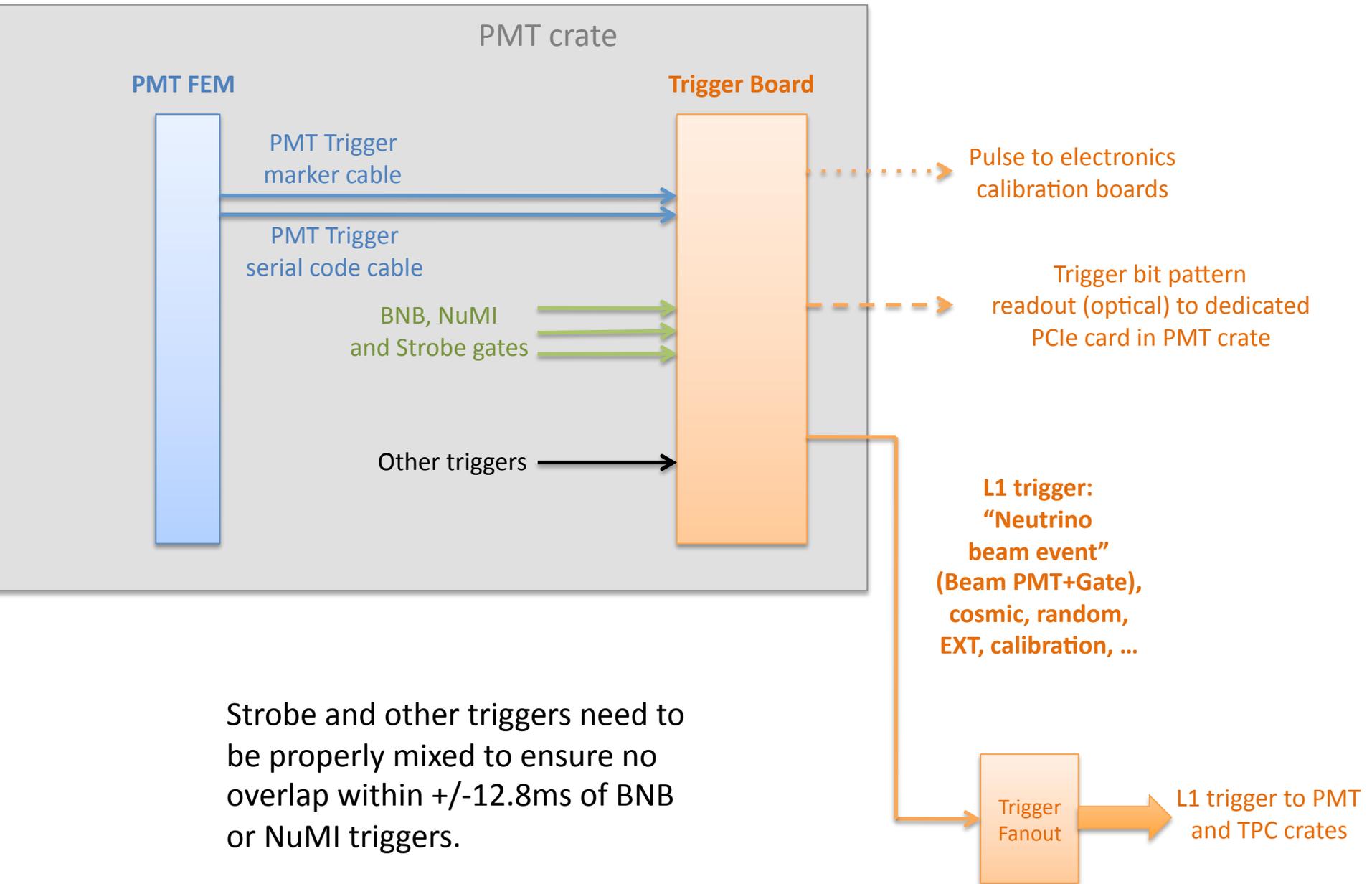


Motivation: Verification tests/studies for:
IRM beam timing
Trigger timing
Synchronous multi-crate
readout in DAQ and event building



MicroBooNE Readout System (TPC and PMT/Trigger)





Strobe and other triggers need to be properly mixed to ensure no overlap within +/-12.8ms of BNB or NuMI triggers.



Strobe and other triggers need to be properly mixed to ensure no overlap within $\pm 8\text{ms}$ of BNB or NuMI triggers.

Verification tests: Making use of BNB



BNB Trigger = 1D+1F coincidence

D. Caratelli, Columbia U.



“1D early” provides a 12.8ms veto for random (strobe), cosmic and other triggers

D. Caratelli, Columbia U.

Verification tests: Making use of BNB

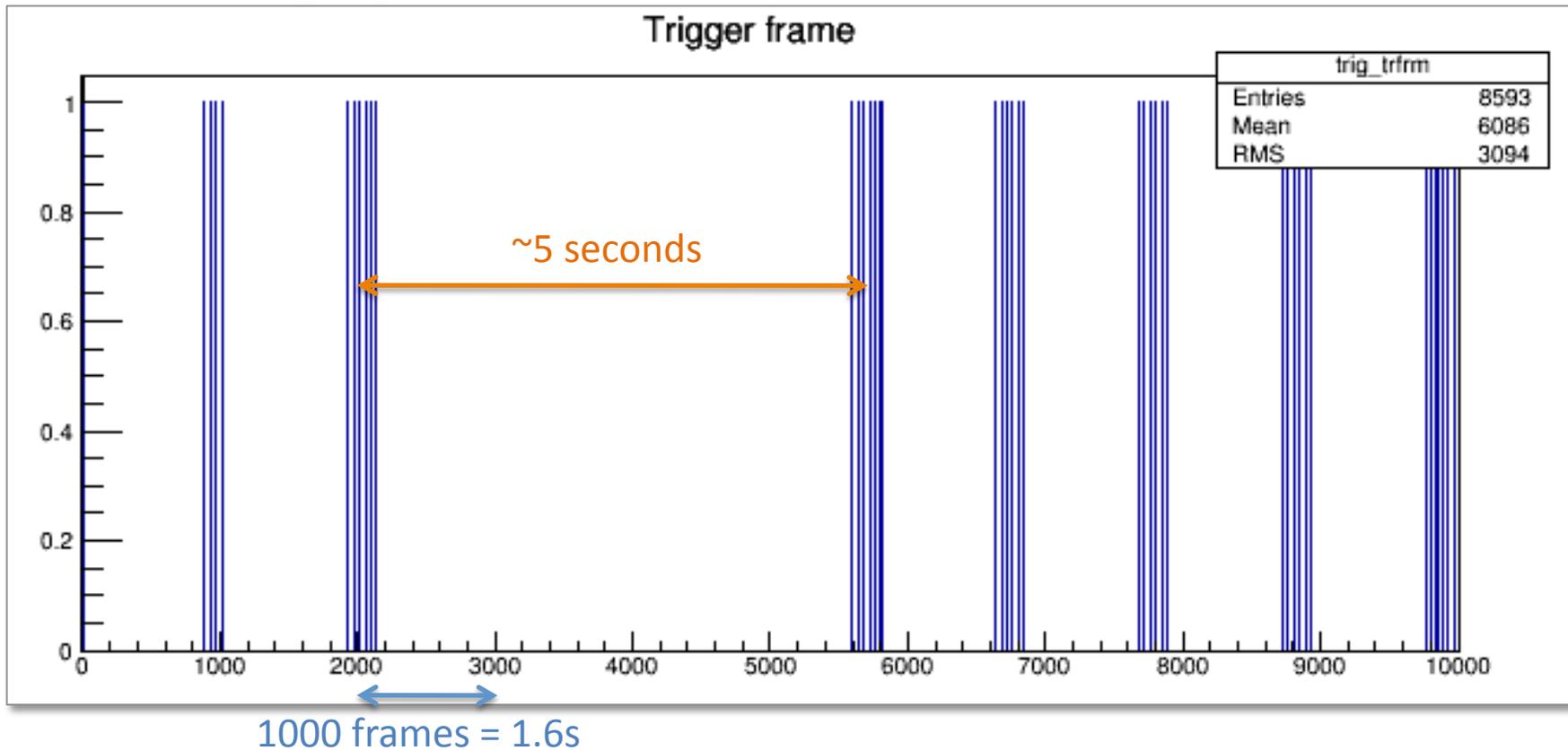
BNB Trigger Run; no PMT coincidence.

Able to handle effectively ~few-Hz BNB trigger rate

Trigger timing consistent with beam profile

More studies ongoing

Actual MicroBooNE readout data!



Verification tests: Making use of BNB

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