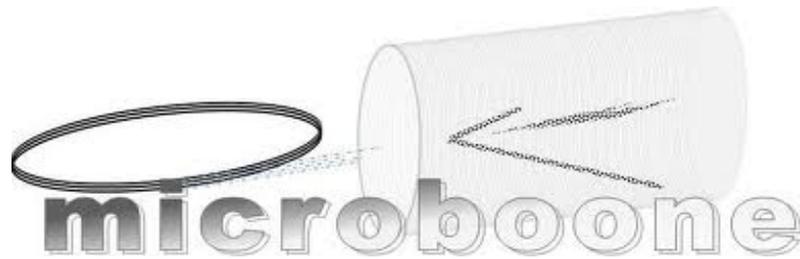


First ideas and steps towards the MicroBooNE online system



Leonidas N. K. and Camillo M. (Virginia Tech.)
MicroBooNE collaboration meeting, March 2013

Online system

- During our last collaboration (January 2013) meeting the need for an online monitor system raised by many.
- A LArSoft built software that could access the data “on the fly” and would extract some basic, primitive information is necessary but,
- ... a monitor that could give access and information about the basic detector quality parameters is also imperative.
 - Information on the TPC; i.e. voltage on the wires,
 - The properties of the optical system or the cryostat,
 - etc, ...
- Virginia Tech. experts volunteered to take up this effort.

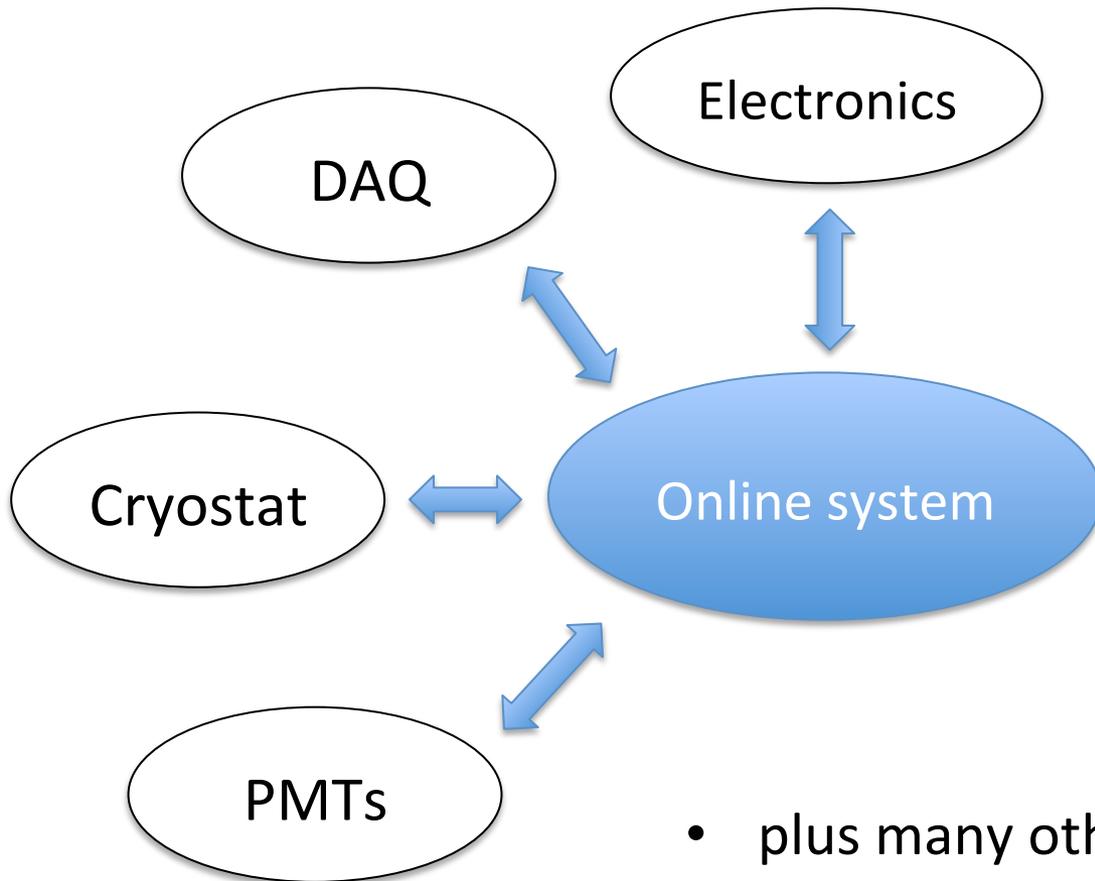
Towards the implementation

- The first step (step zero) in this initiative will be the common decision of what variables we would like to propagate in the online.
- That will require a fruitful discussion among experts; major input from the DAQ group.
- Proposal: after this first meeting we should start putting together the basic elements for the online monitor. We will build it based on experience acquired from a similar effort in Double Chooz.
- In due time (as we progress) we could start integrating more and more information according to our needs.

Database/Storage

- All the relevant information will be stored (naturally) in an SQL database that could be easily accessed.
- This will allow quick, instant access as well as long term storage.
 - The latter will be useful for stability plots and long term monitoring.
- Every subgroup will have to provide a list of variables to be displayed or plotted, together with documentation on what is stored and how it is stored on the database.
- We will then build the framework on which the online system will be developed.

A multi-group task



What we need :

- A brief summary from every working group (or system) on the variables required and,
- The proper way to access these databases and acquire the information.
- Better would be a representative from each subgroup
- plus many others ...
- Sorry, if I forgot to mention any group in particular (this was a quick illustration).

Further comments

- Of course, we are not going to point out to each group which variables should be propagated; the **experts know better**.
- The **online system must be simple**: as simple as possible since shifters are not expected to master all the components in the detector.
- It should be **easy to diagnose a problem** but the system should have the required substructure to allow the experts to intervene and resolve any problem when necessary.
- Another requirement along simplicity is the **uniformity of the system**. This will reduce the number of panels and computers needed and will facilitate shifts. **Shifter need to learn quickly the monitoring system**.

Schedule

- The rough plan is to start putting the various pieces together soon; in the following months. **Understand first what we need** following the requests from the different subgroups
- Camillo and I will dedicate a big part of our time and work on this (including my stay at FNAL from May).
- A **careful coordination between the various experts** is indeed needed. Try to prepare documentation and have few dedicated meetings if needed.
- **Support from CD is available.** That will make things easier for us.
- We want to start using the monitoring system during filling.

Requests

- Comments are always welcome: the online monitoring system is a MicroBooNE system.
- Each subgroup should provide:
 - documentation on how they are going to readout and store the critical variables from their systems
 - list of preliminary variables that they would like to monitor (this can be updated in future) from a shifter point of view and from an expert point of view, frequency, space needed
 - reference person
- Online monitor can be divided in fast (seconds or less) and slow (minutes).
- Offline monitor: history plots and so on. Take this into account in your list.`

Thanks !

Questions or comments ?