

# DAQ Run Control Tools Status (and plans)

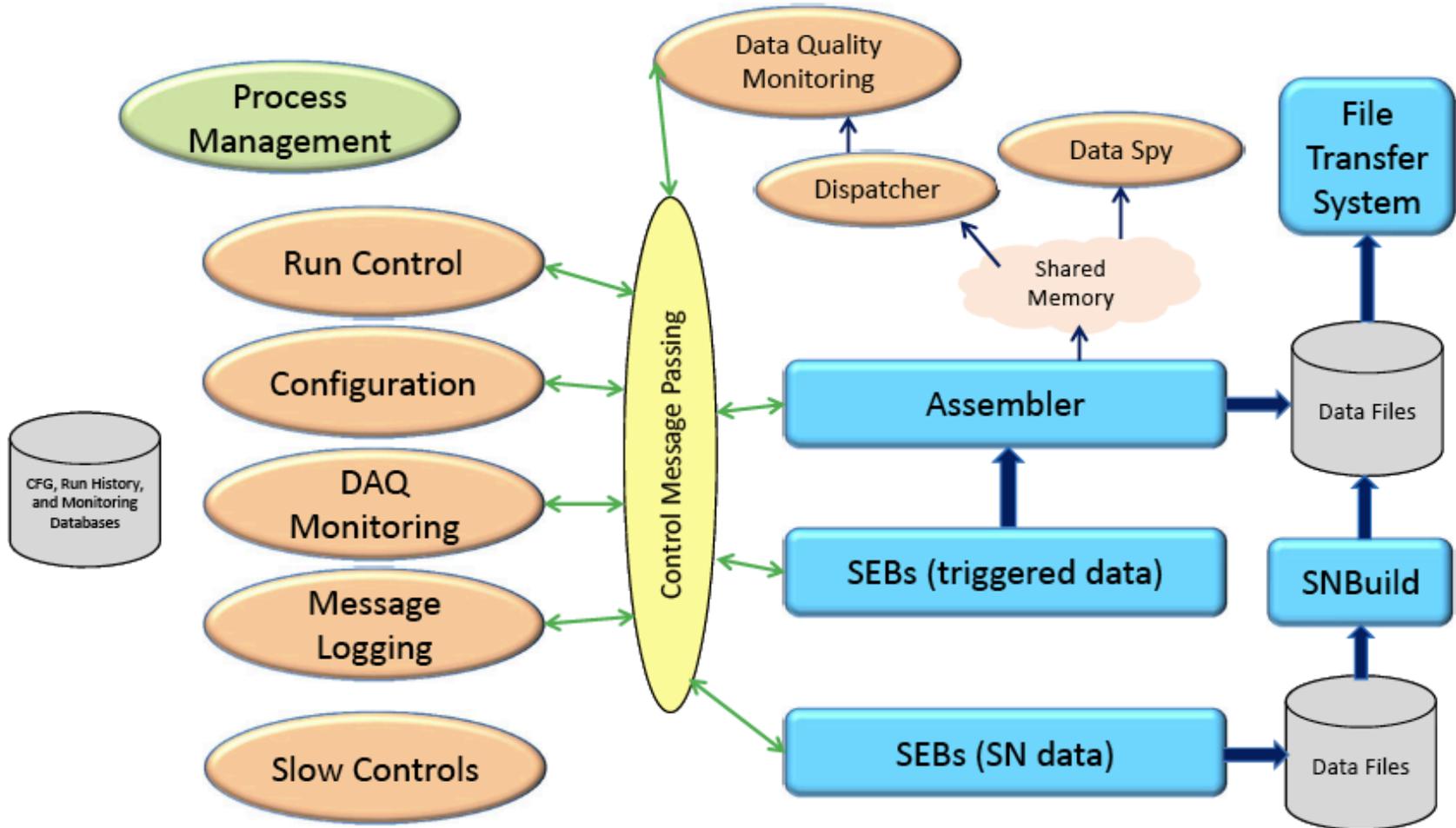
Rashid Mehdiyev,

UT Austin

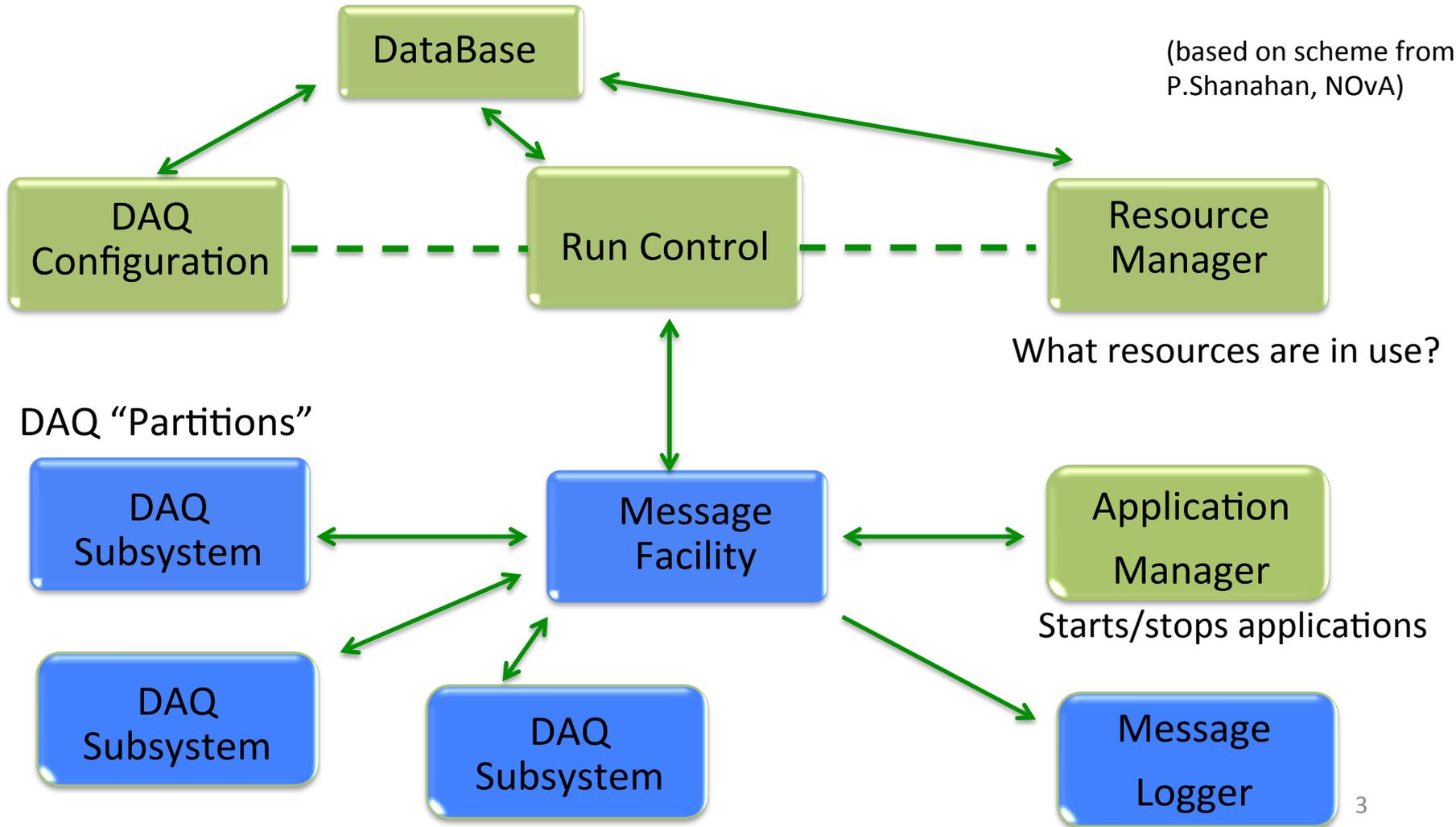
June 27, 2013

# Big picture

## DAQ Functions & Simplified Data Flow



# DAQ Control and Monitoring



# Ported packages (from NOvA DAQ)

- DAQDataFormats
- NovaRunControlClient
- ResponsiveMessagingSystem
- DAQMessages
- DAQOperationsTools
- NovaDatabase
- DatabaseUtils
- EventDispatcher\_CommandSet
- DAQApplicationManager
- DAQMessages
- EventDispatcher\_Server
- DAQNetworkUtils
- DAQSimulationManager
- NovaDAQConfiguration
- NovaResourceManager
- NovaRunControl

- The task was to port useful NOvA DAQ packages  
Use newer compiler (gcc 4.7.1) and CETBuildTools (cmake)  
(as opposed to SRT what NOvA uses).

- It's turned out to be a non-trivial task taking into account the amount of code in NOvA online domain and multiple (x)-dependencies.

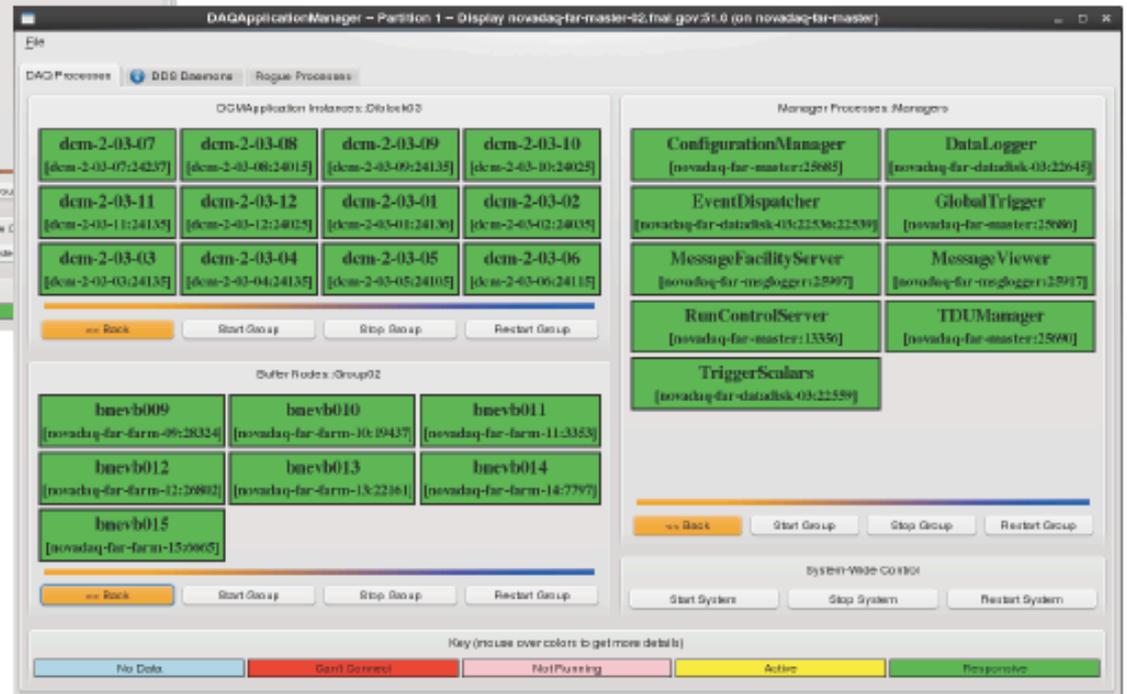
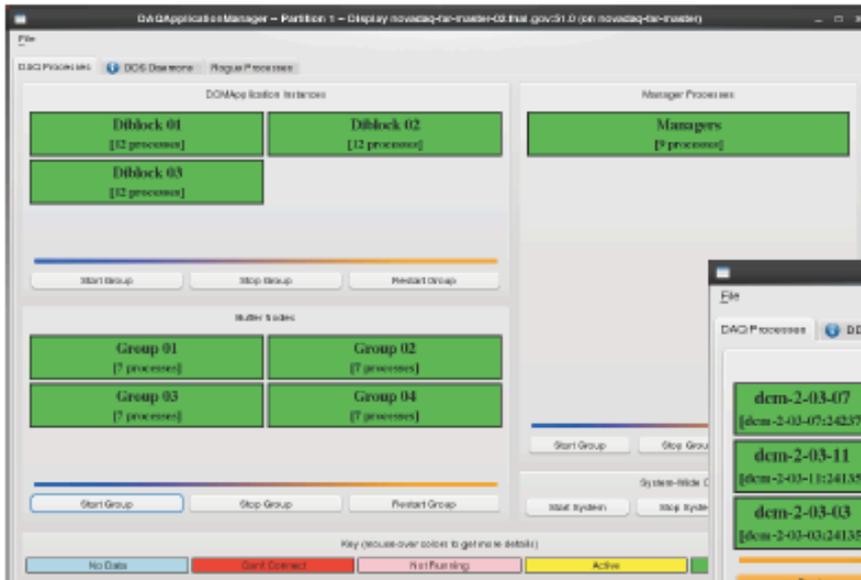
- New compiler is more restrictive – fixing some coding issues.

- Along the way: needed to build “new” uboone UPS packages: including Ganglia monitoring tool and many others.

# (NOvA) Application manager

Used for process management

This is NOvA screen image for now!  
To be replaced by  $\mu$ boone version.



Application Manager  
starts/stops/monitors  
applications and Message  
Service Daemons

# μboone Run Control GUI

The screenshot displays the μboone Run Control GUI on a Linux desktop. The GUI is titled "Unknown Detector Run Control" and features a grid of yellow buttons for resource management and configuration. A blue arrow points from the "Discover Resources" button to a list of actions on the right. The background shows a terminal window with a file browser and a system tray with various application icons.

**Discover Resources**

**Select Resources**

**Select Configuration**

**Prepare configuration**

**Load Connections**

**Make Connections**

**Load Hardware Config**

**Load Run Config**

**Configure Run**

**Begin Run**

**Pause Run**

**Stop Run**

```
[rmehdi@uboonedaq-evb build]$ ./bin/rcClient &
[2] 26071
[rmehdi@uboonedaq-evb build]$ WARNING: RCClientGUI::CreateSHTunnel(), NOVARSCHOST env. variable undefined, defaulting to localhost.
WARNING: RCClientGUI::CreateSHTunnel(), NOVARSUSER env. variable undefined, defaulting to rmehdi.
Permission denied (gssapi-keyex,gssapi-with-mic).
```

Compiled and build and loadable now.

# Summary and work to do

- The DAQ Run Control GUI system is compiled and built – it is an important step before making it to be fully functional for  $\mu$ boone.
  - need to move to newer version of cetbuildtools (3.04.04).
  - to make UPS products for completed packages.
  - Application Manager requires some few fixes.
- Need to set up configuration scripts and environmental variables properly to ensure specific  $\mu$ boone settings/variables.
- Make it work with control message passing facility (OpenSplice DDS).
- Need to be interfaced with  $\mu$ boone DBI (Andrzej).
- Change configuration via xml file (NOvA)  $\rightarrow$  fhicl for  $\mu$ boone
- Get # of events from assembler, record it.
- Setup a message viewer/logger to monitor statuses online.
- Need help to make transition from this prototype to a fully working system: D.Kaleko?