

# MICE DAQ Update

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June 26, 2012

# Progress since the last CM

## Software

- General revision of the interface between MAUS and DATE (InputCppDAQOnlineData).
- Test for the Maus Online Input.
- Software migration to SL 5.7 and DATE v7.34.

## Hardware

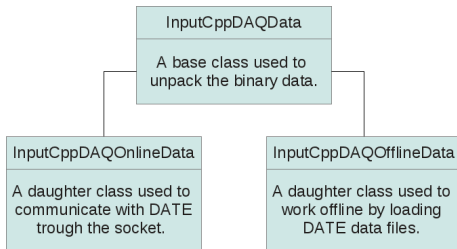
- The production of the EMR boards is completed.
- New Event Building machines are installed in MLCR.

## Work in progress

- Debugging of the system after the software migration.
- Development of new the trigger system.

## MAUS DAQ input

- The MAUS online input (`InputCppDAQOnlineData`) used during the December run was made on a hurry in order to demonstrate that MAUS can work online.

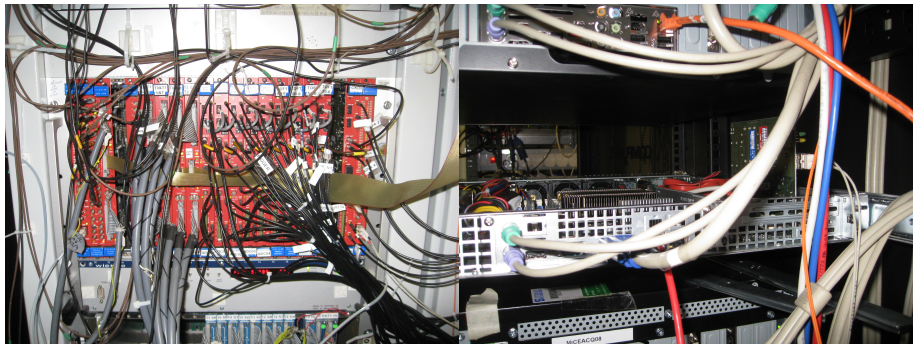


- The new revision of the code includes:
  - Better distribution and encapsulation of the responsibilities when working online or offline.
  - Tests for both online and offline inputs.

# Preparation for the software migration in MLCR

Small standalone DAQ system was build in order to test the migration without destroying the existing system in MLCR.

- miceraid5 - used as GDC.
- miceraid4 - connected to TOF crate and used as LDC.



# Preparation for the software migration in MLCR

## Migration from CENTOS to SL

- The old scripts for automatic installation of the software, need by the DAQ computers have been revised and modified in order to work in SL 5.7.
- The original ALICE software repository can not be accessed from MLCR. A local mirror of the repository has been made.
- Most of the work done by Matt Robinson.
- All the modifications are proven to work in the test stand-alone DAQ system.

# Preparation for the software migration in MLCR

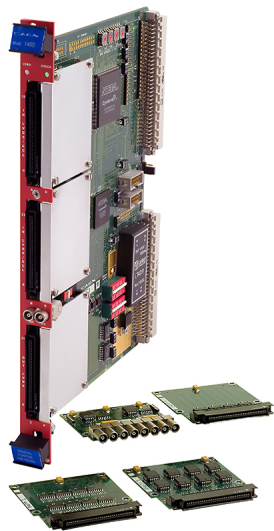
## Migration from DATE v6.49 to DATE v7.34

- The existing (Date v6.49) Configuration Data Base has been transferred, modified and upgraded and can be used in DATE v7.34.
- The old equipment list code has been modified in order to be compatible with the changes in the data format and readout loop in DATE v7.34.
- Additional modifications of the equipment list code have been made in order have better separation between the DATE implementation of the readout loop (made in C) and the implementation of the code of the MICE DAQ equipments (made in C++).
- All the modifications are proven to work in the test stand-alone DAQ system.

# Migration done

- The old DAQ system is destroyed. No way back.
- All DAQ computers have SL 5.7 and DATE v7.34.
- Not all of the feature of the old system are 100% resurrected.

# Development of new trigger system



## CAEN V1495

- General Purpose VME Board;
- User customisable FPGA Unit;
- 64 inputs, expandable to 162;
- 32 outputs.



## New trigger system

We started the development of a new trigger system based on CAEN V1495 - General Purpose programmable VME Board.

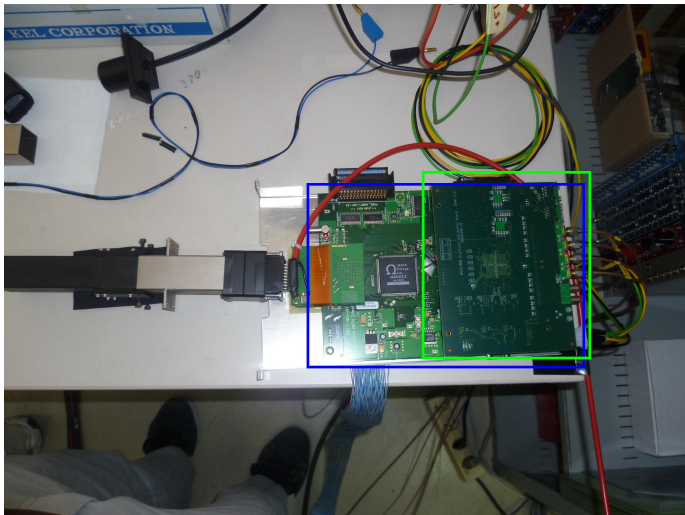
- All the hardware we need is in place.



- I am doing my first steps on programming in VHDL.

# EMR electronics

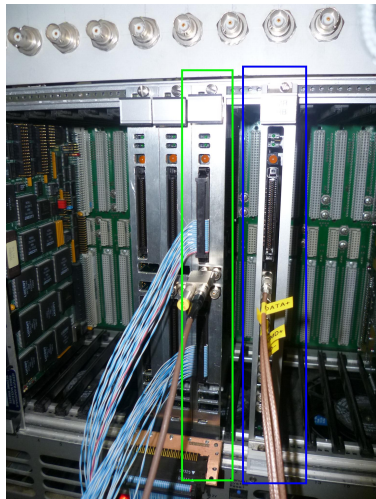
FEB and DBB



# EMR electronics

## VME Readout Board (VRB) VME Configuration Board (VCB)

- Production of the boards is completed.
- The VCB firmware is ready.
- **The VCB firmware is still under development!**



# Conclusions

- The interface between MAUS and DATE is now in a good shape.
- Software migration is almost completed.
- Production of all EMR boards is completed, but the VCB firmware is still under development.
- New trigger system is under development.