Online Group Update & Plans

25th June 2014
MICE CM39 Oxford

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on behalf of the Online group

Responsibilities

The Online group is responsible for:

Infrastructure

- Computers in the rack rooms and the MLCR
- Spares and Maintenance
- Overview of MICE-Net and Network Switches

Oversight of

- DAQ
- Online monitoring
- Data Mover
- E-Log

Interface with Operations, RAL Networks and MICE Computing

Controls and Monitoring is now its own group but we keep close ties.

Responsibilities – Step IV Readiness

It is the online groups responsibility to ensure that the machines are ready for data taking at Step IV. Additionally we are required to be in a position where we can respond quickly to any problems, minimising the possibility of the experiment suffering significant downtime due to machine/network problems.

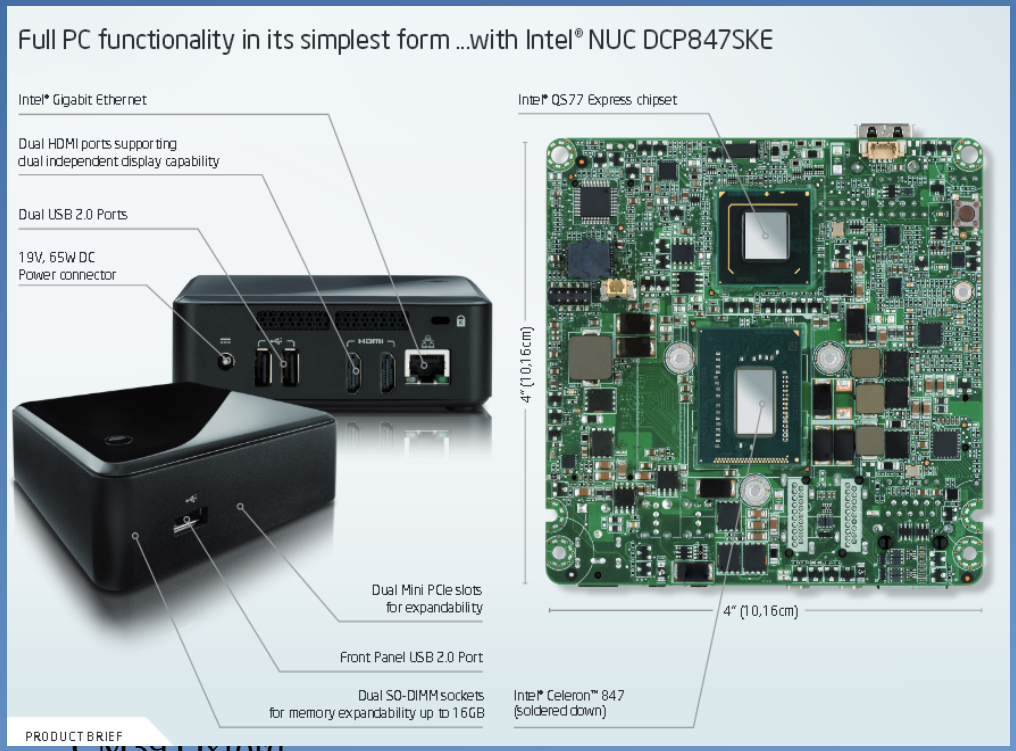
- **Integration** – Ensuring the smooth integration of computers onto micenet. This requires planning. It also required co-operation from other groups.
- **Pro-active** – Trying to establish possible causes of failure/problems before they happen and to have plans in place. E.g. spares, backup of critical servers.
- **Staffing** – To ensure a suitable body of knowledgeable individuals are on-call to provide assistance when required.
- **Documentation/Procedures** – To improve the user documentation so that a trained MICE user can ensure that the computers are both in a healthy and functional state and that minor problems can be resolved quickly.

Infrastructure – Computers

All the machines are being migrated over to SL6.4. SL6.4 is a LTS release and we foresee this OS being utilised until the end of the experiment.

Miceecserv – This machine has been replaced and installed back into the MLCR. Miceecserv acts as an EPICS client server pc and is deemed as critical. Miceecserv2 acts as a backup in case of its failure.

Installation of Intel NUC (New Unit of Computing) machines in the MLCR as new operator interfaces to the servers is going to wait until after the activation study. Time scales for this have yet to be determined – I'll say more later however: we already have one NUC machine 'micethin00' installed for testing.



Infrastructure – Spares and Maint.

Craig is going to speak about the spares list and what he needs from us all to complete this so I won't say any more about it here.

We are also looking at the computers and ascertaining what machines have support, what is old and likely needs replacing. Where possible we are currently replacing desktop machines with server class machines that will withstand the rigours of extended use and give improved reliability through redundancy.

For the online group we shall be systematically going through the existing machines to determine what backups and spares we need – I have already had some help in starting this from a couple of members of the group.

For key machines we are trying to ensure that we keep service contracts on them as we replace them so that components can be replaced next business day.

Infrastructure – Networking(1)

On the 27th May an attempt was made to reconfigure the gateway to micenet so that access could only be made through mousehole. This change caused a number of problems.

Initially Outbound connections could not be made. This was resolved but it was still not possible to access PV on EPICS through the PPD gateway. This problem could not be resolved and so the system was restored back, however it was still not possible to access the PV's through the gateway.

After some investigation these issues were resolved a day later – see mice log for details.

This attempt at changing over the network has highlighted a few problems:

It identified a number of procedural issues that need to be addressed. Eg lack of documentation, check-list of processes on machines.

There are plans to repeat the process later on in the year but after first having a dry run with a test gateway machine. This is being arranged with RAL Networks.

Infrastructure – Networking(2)

On the 3rd June Network Switch (1) was changed over for a spare after it was noticed that the network switches were occasionally dropping out.

If this behaviour continues then it will be necessary to buy a new network stack. (Note several £k) The stack that we are currently using on MICE was bought second hand and is no longer supported by the manufacturer.

If the recent fix solves the problem then we will need to purchase a spare network switch to replace the one that has been swapped out.

We have a few months to make a decision as to whether the current stack is stable or if we wish to swap it out.

There is some evidence that the network switch changeover has made no difference but I understand that there are a few other minor changes we can try to the switches.

Step IV Readiness: Integration

We need to ensure that the machines are available for the experiment to go ahead.

If you have machines that need to be added or a requirement for machines for Step IV it is imperative that you contact the online group asap so that we are aware of your requirements.

Step IV Readiness: Staffing

There is a need to create an On-Call rota for the Online Group:

During experimental running we will need an on-call expert for the online group in the same way that we have the BLOC, TROC etc. There will be a requirement that the Online On-Call will need to be close to site for this role as there may be a need to come into the MLCR to solve problems (remote access may not always be possible!)

Ideally this role can be combined with other duties such as shift taking or other on-call duties to lessen the burden. Chris and I can see a list of approximately 15 potential names...

I expect that we will also need to recruit from the general MICE population to help reduce the amount of time any individual has to spend on-call.

You will be hearing more about this in due course and we can discuss this during the discussion session if desired.

Control Room Upgrade

There has been some discussion about progressing with a control room upgrade. I can now report that we are now actively putting a plan together to make this happen over the summer. Some of the details of this upgrade are on these slides, further details are in documentation that has been produced.

The finer details of the pricing and a timetable have yet to be worked out.

Desks

We have ordered new desks for the control room. These desks are narrower (600mm) and remove the curved section near the entrance to the MLCR. This will increase the amount of floorspace in the MLCR. The desks have been manufactured and are ready for installation.

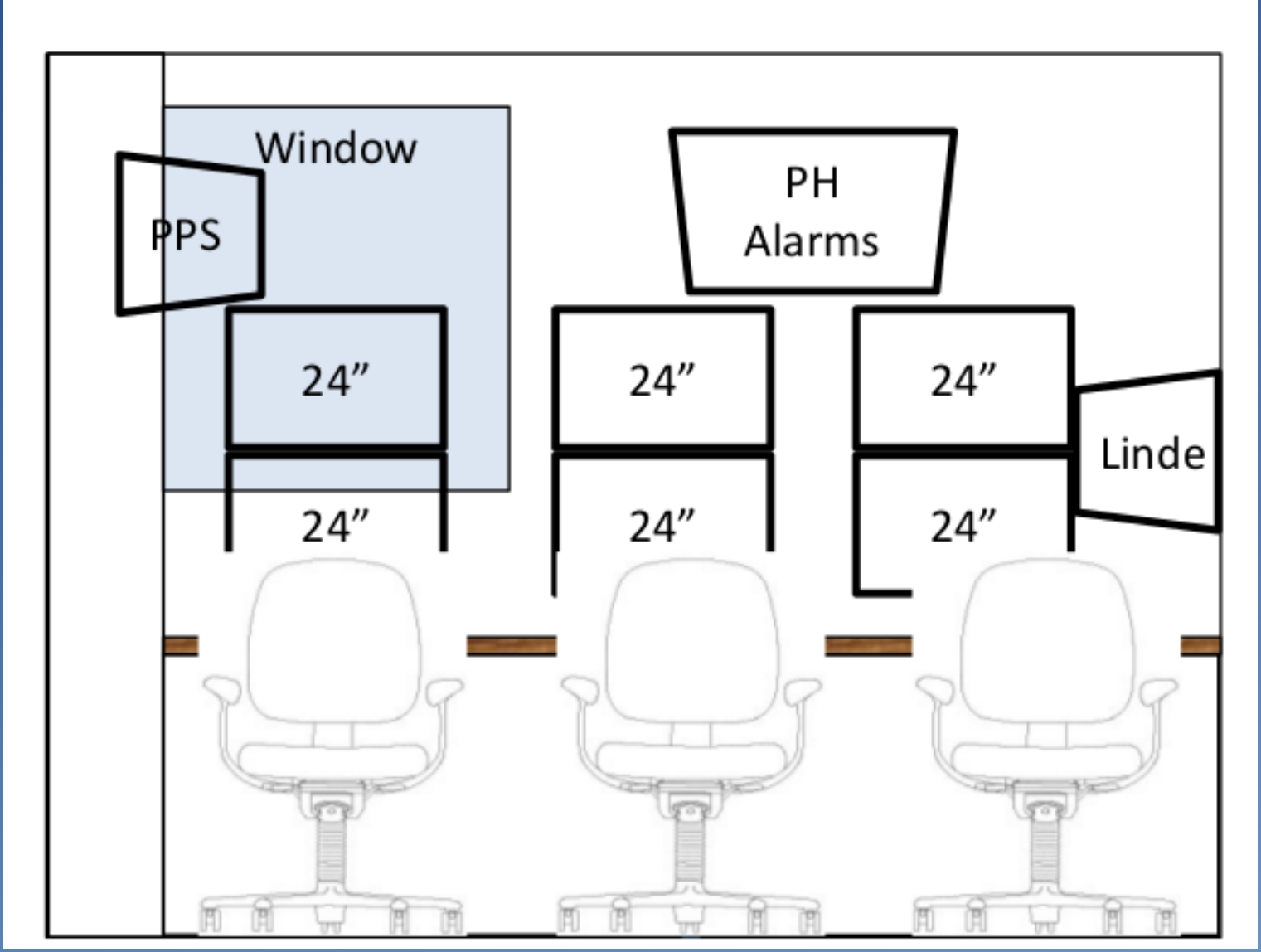
Computing

We are introducing a number of very small Intel NUC devices into the control room. These will serve as the operator PCs. They will provide a uniform and flexible interface to the server PCs in the rack room by enabling any NUC to access any server. Each NUC will also permit connection to two high resolution displays, increasing the amount of usable screen space in the control room.

Cor

3 seating positions - shorter desks and remove curved section
Double HD monitors at each desk (1920 x 1200)
Large monitor/TV on Wall for alarm handler and other status information

Control Room Upgrade



Cor

3 seating positions - shorter desks
Double HD monitors at each desk (1920 x 1200)
Whiteboard to be replaced with an electronic whiteboard (current whiteboard to be placed outside of MLCR)

Control Room Upgrade

Some of the other Considerations (but this isn't the entire list!)

One (or both?) of the monitors next to the door will be KVM'd to all the machines in the server room so that we have direct access to all of the machines.

The control room will be redecorated and tidied up. New keyboards, mice, monitors to give the room a facelift.

We will be moving to an electronic whiteboard system. This will be to notify shifters and hall staff/visitors of important information.

We are looking at utilising two of the existing desks in the current overflow space just outside of the MLCR. We will retain the old whiteboard on the wall outside there for all the doodlers!

We would like to add some more storage space. We are currently considering our options but they may be limited.

To move forward on this there are a few details to clear up and it needs costing.

…and we need to decide what colour to paint the control room. 8-)

Conclusions

I think that the main direction that the online group has to take is to ensure that the computing is robust enough that it can take whatever Step IV throws at it. Primarily I see the following as priorities:

Ensuring that we are fail-safe by having the spare capacity to react to unforeseen circumstances.

- Being able to deal with machine/parts failures (same for DAQ).
- Having the correct spares and backups in place.
- Detailed understanding of what machine processes need to be running.

Having the correct documentation so that there is a procedure in place when such failures occur.

Having suitable on-call expertise – Starting to put together the staff for the rota.

Integration:

Ensuring that the correct hardware (both DAQ and computing) is in place for Step IV. This is where fellow collaborators can help. We need to know what your Computing/DAQ requirements are now so that we can plan for its integration.