



MICE Online Group

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UCR

MICE CM31 UMiss October 2011

MICE Online 2011 – July CM



- **Group evolving**
 - New group leader – Linda
 - New DAQ leader – Yordan
 - New C&M leader – Pierrick
 - New sysadmin – Simon Fayer

- **Redefining/regrouping Online Effort**
 - **Specifying membership & roles/responsibilities**
 - MICE Online Group charter and subgroup structure – see micemine
 - **Dealing with the hand-over from Jean-Sebastien**
 - **Weekly Wednesday meetings**

- **Began developing plan for Step IV**

Online Group – Who Are We?



- **Linda Coney** – head and Online Reco
- **David Colling** – head of Software & Computing, contact for GRID PP
- **Yordan Karadzhov** – incoming head of DAQ, OnMon
- **Pierrick Hanlet** – head of C&M, connection to Config DB
 - **Daresbury Lab – C&M - Adrian Oates & Brian Martlew**
(head of DL group)
 - **Paul Hodgson** – C&M (target)
 - **Matt Robinson** – C&M (target,tracker), EPICs connection to Config DB
- **Mike Courthold** – Networking
- **Henry Nebrensky** – GRID, Data Transfer, MICE Data Manager
- **Janusz Martynikk** – MICE Data Mover – Data of Online System
- **Paul Kyberd** – GRID, Contact person for GRID PP
- **Simon Fayer** – SysAdmin for MLCR Computers
- **Craig Macwaters** – MLCR Network, Hardware, Computing
- **Antony Wilson** – Config DB, MICE PPD IT Contact
- **Chris Rogers/Chris Tunnell** – link with Software Group

Progress¹ – Where We Stand Now



- **Overall**
 - Brought the group together – including Daresbury Lab
 - Developed Step IV plan & milestones

- **Infrastructure**
 - **Developed plan and located hardware (computers & interface cards) for OS upgrade – Craig/Simon**
 - Facilities user wired network in Lab7 for tracker test – Antony/Craig
 - Finished installation of new rack – Henry
 - Fixed miceacq12 – disk failure put cosmic ray tests at risk – Simon
 - **“fixed” miceraid2 – Craig/Matt R.**

- **DAQ – more on this later...**
 - DAQ brought online & initial running for EMR – Yordan
 - Interrupted by target problems/replacement
 - **New unpacker written & implemented in MLCR – Yordan/JS**
 - **DAQ re-established w/o EMR – Yordan/MOMs**
 - **Used to take data for new target commissioning**

Progress² – Where We Stand Now



- **C&M**
 - Began new work on tracker C&M – Matt R./Pierrick
 - DL doing primary – see next talk
 - **Tested/Ran new HV control application - Pierrick**

- **Online Monitoring/Reconstruction/Data Quality**
 - **Tested OnMon with new unpacker – restored previous capability – Yordan/Linda**
 - **Tested Online Reco in G4MICE – restored previous capability – Chris R**
 - List of needed Online Reco plots officially with the Software Group – Linda/Chris R
 - Upgrade to new OS for Online MAUS test-bed computer - Antony

- **Data Transfer**
 - **New micestore (along path of data out of MLCR) installed, tested & used – Henry**
 - Summer 2011 data transferred to GRID (almost..) – Henry/Janusz
 - Tracker data (2008/2009) transferred to GRID – Henry
 - **Modified data-mover to work on new OnMon files - Henry**

- **Documentation**
 - **Updated instructions for DAQ, Online Monitoring, Set Particle Trigger, Set DAQ Spill Gate, Alarm Handler**













Next – Where We Need to Be

- Immediate Future
 - December Running (Dec 1-15)
 - Feb/Mar EMR run – May/June Run?
- Step IV

December Running - Milestones



Countdown to December running – December 1







Task	Baseline	Status	
Target T2.9 installed on ISIS - Long	14/9/11		
Fix miceraid2 – Coney – fixed, but a MYSTERY	21/9/11		
DAQ w/o EMR – Coney - COMPLETE	28/9/11		
EMR should be out -	15/10/11		25/10/11
Unpacking PID detectors - Rogers	1/10/11		1/11/11 
G4MICE OnRec ready - Rogers	15/10/11		
Step I C&M done - Hanlet	15/10/11		
Data-mover ready - Coney	22/10/11		
TOF spacepoints - Rogers	1/11/11		
OS upgrade done - Coney	1/11/11		
MLCR backups - Coney	1/11/11		
Prototype online histos - Rogers	1/11/11		
Work on proton absorber – Hanlet/Barber	1/11/11		
PPS must be commissioned – Hanson ask Macwaters – Done. PPS is on target.	7/11/11		
Power substations tests complete - Nichols	10/11/11		15/11/11
MAUS on OnRec01a - Rogers	15/11/11		
OnMon running - Coney	Done – want beam test		COMPLETE 
DK solenoid cool-down start - Courthold	14 days before run start		
Check that detectors can be turned on	17/11/11		
People	17/11/11		
Update documentation	23/11/11		
Config DB - Coney	1/12/11		
Computing access - Coney	1/12/11		

- Step I C&M – Pierrick talk
- DAQ
- Data mover
- OS upgrade
- MLCR backups
- Computing access
- MAUS online



DAQ Milestones

DAQ – Yordan Karadzhov


Task	Baseline	Status	
Migration to the new version of the unpacking software, including software review.	1/9/11		COMPLETE
Finalize the implementation of all EMR equipment in DATE	1/11/11	 1/1/2012	
Create cosmic test stand for EMR modules at University of Geneva, using the latest version of DATE	1/12/11		1/1/2012
Extend the information provided by the DAQ to EPIS, including scaler information	1/01/12		
Migrate LCR DAQ system to latest version of DATE	1/02/12		
EMR completely integrated in the MICE DAQ	1/02/12		

- **Migrate to the new unpacking software – DONE**
 - (barring final testing/integration Chris R mentioned)
- **Finalize the implementation of all EMR equipment in DATE**
 - Delivery date was 1/11/2011 – now 1/1/2012
 - Deadline moved because of the delay of the shipment of EMR back to Geneva, December running and associated lack of time
- **Create cosmic test stand for EMR at UniGeneva**
 - Deadline → 1/1/2012



DAQ Milestones

DAQ – Yordan Karadzhov

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Finalize the implementation of all EMR equipment in DATE	1/11/11		1/1/2012
Create cosmic test stand for EMR modules at University of Geneva, using the latest version of DATE	1/12/11		1/1/2012
Extend the information provided by the DAQ to EPIS, including scaler information	1/01/12		Stands
Migrate LCR DAQ system to latest version of DATE	1/02/12		Stands
EMR completely integrated in the MICE DAQ	1/02/12		1/3/2012

- **Migrate the MLCR DAQ system to the latest version of DATE**
 - Cannot be done before cosmic test stand done
- **EMR completely integrated in the MICE DAQ.**
 - Delivery date was 1/2/2012 – more realistically 1/3/2012
- **Extend information provided by DAQ to EPICs**
 - Yordan plans to make progress on this during his MOM shift in December.



DAQ

- **DAQ running with new target controller**
 - Need ability to run DAQ w/o target operating
 - Cosmic triggers – possibly fake trigger – debugging DAQ changes, OnMon, OnReco, DataTransfer
 - With old target controller – master DAQ trigger (Machine Start signal) came from ISIS, delayed in delay box, passed to target and DAQ
 - New target controller → delay box gone
 - New target operating – Machine Start signal goes to target control – gets delayed – controls target dip time and is passed to DAQ.
 - PROBLEM – no signal to DAQ w/o target running

- **Tried to test Online Systems – discovered inability to run DAQ stand-alone**
- **MUST understand this & ensure flexibility and correct timing for DAQ**










- **Develop DAQ-Tracker Step IV plan**
- **Improve the communication with the tracker group. DAQ group needs better understanding of the DAQ systems in Lab7.**
 - **Critical for Step IV**
 - **Cannot be done before cosmic test stand done**

- **Need backup for the Event Builder (miceraid2). Miceraid1**
 - **Ideally have for December running – ***Requires active sysadmin**



Online Reco

Online Reconstruction – Linda Coney

Task	Baseline	Status	
Visualization prototype/event display - EXISTS	15/9/11		
Resurrect 2010 G4MICE online capability	1/10/11		19/10/11 
Prototype of TOF profiles, time-of-flight in MAUS (start testing MAUS online - over the socket during Fall 2011 running)	20/11/11		CT Talk
Online Reco in MAUS - running smoothly online over socket in MLCR	1/01/12		
Production version of visualization	1/01/12		
MAUS EMR reconstruction - testing/development	15/02/12		

- **Can provide old G4MICE Online Reco for December – end of support**
- **Visualization will probably be modified/expanded**
- **Preparing infrastructure for MAUS in MLCR**



Top 10 Online Group Issues

- DAQ functional for EMR & Tracker
- C&M for Step IV
- Move to MAUS Online Reco/Data Quality
- Easy data access
- Equipment reliability
- MLCR Automatic & comprehensive backups
- Equipment reliability
- OS upgrade
- Agreement with RAL Networking for access to computing information & computers
- ?



Conclusions

- Better organized
- Going well – lots of activity

- Need
 - active sysadmin
 - reliable equipment
 - people at RAL periodically