

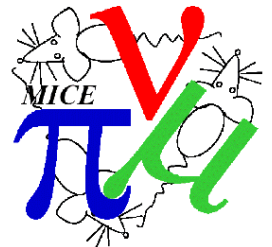


# Project Managers Report

CM38 – Napa

Roy Preece

24th February 2014





# Content

- Where are we
- Where are we going
- Project Oversight
- Communications





# Where are we

## *(Detail from the plenary speakers)*

- **Magnets are coming thick and fast**
  - Focus Coils have had some issues but two have been constructed
  - Spectrometer Solenoid
  - Coupling Coil magnet
  - Decay Solenoid, restart planned and underway
- **Detectors and Instrumentation**
  - EMR, completion of the Step I stage
  - TOF and KL, some work for the magnetic mitigation for TOF 1 cage
  - Tracker installation underway
- **Magnetic Mitigation**
  - Rack room being populated
  - West wall construction
  - Partial Return Yoke tender action
- **RF**
  - First amplifier tested in the hall
  - Single cavity test cell
- **Software, Analysis, Control and Monitoring**
  - Continued quiet progress in a critical area for the operation of the project
- **Electrical**
  - Without the extensive work of this team it would be quite difficult to run the experiment



# Where are we going



Milestone Name	Finish
West wall Messanine extension finished	25 March 2014
Upstream Solenoid & Tracker Assy complete	04 April 2014
Upstream Solenoid installed in MICE Hall	24 April 2014
Downstream Solenoid arrives at RAL	08 May 2014
AFC #1 ready for field mapping	May 2014
Downstream Solenoid & Tracker Assy complete	June 2014
AFC #1 field mapping complete	June 2014
South side yoke material delivered	July 2014
North side yoke material delivered	July 2014
AFC #1 ready for installation in MICE Hall	July 2014
South side return yoke installation complete	September 2014
AFC #1 installed in MICE Hall	September 2014
Downstream Solenoid installed in MICE Hall	October 2014
Electrical & controls available for Upstream Solenoid MICE Hall testing	October 2014
Electrical & controls available for AFC #1 MICE Hall testing	November 2014
North side return yoke installation complete	November 2014
Hydrogen system test with Helium complete	November 2014
Electrical & controls available for Downstream Solenoid MICE Hall testing	November 2014
Combined magnet operational tests complete - milestone	February 2015
EMR, KL and TOF2 Installed to Channel	February 2015
MICE step IV installation complete	February 2015

Upstream Tracking module needs to be out of R9 ready for the second Solenoid to arrive.

Answers from the training of the FC needed for the future running.

With FC#1 in the hall testing of FC#2 can continue.



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Driving the program  
- Project team  
looking into methods  
to bring to bring the  
delivery and so  
installation forward

Hydrogen system  
connection before  
operation

Installed after  
commissioning



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MICE step IV installation complete	February 2015

Completion of the Step IV installation is February 2014

***This is not the end of the story and we must not relax***





# Where are we going

- Getting to the February date
  - Construct the equipment.
  - Magnet re-training of 5 weeks each for the Spectrometer Solenoids
  - Assuming the Focus Coil remains cold and so remembers it's training (*needs a commissioning plan discussed*)
  - Combined training of the channel for 5 weeks
  - **The 5 weeks assigned for EACH Spectrometer Solenoid training period**
    - Assumes that around 15 quenches will be needed for each Solenoid
    - Leaves slack in the period if a quench run each day
    - **BUT**
    - This number of quench runs will require around eight 500L Dewers of LHe
  - **The 5 weeks assigned for combined magnet training period**
    - Assumes that around 10 quenches will be needed to bring the channel up to operating current
    - Leaves slack in the period if a quench run each day
    - **BUT**
    - This number of quench runs will require around thirteen 500L Dewers of LHe
  - **Logistics of getting the LHe on site will be difficult and very expensive**
    - Around £3k per Dewer – could be upto £100k
    - During the combined testing we will need two Dewers delivered every day
    - The people needed on site during a very intensive period



# Where are we going



- After the February date
  - Getting the magnets running together is only the start
  - Figuring out how to operate is the next step, this will not be quick
  - Software shakedown and debugging
  - Personnel training for shifts
  - Understand the data coming out of the lattice, time for analysis
  - Field off data, calibration.....
  - WE NEED A PLAN
- It could be 3 – 6 months after the magnet lattice handover, that we start gaining meaningful data





# Project Oversight



- Scrutiny throughout the program, Step IV through Step VI
- What they want to know
  - “What have you done with the money?”
  - “What are you going to do with more?”
- Six Monthly RLSR and MPB
  - Resource Loaded Schedule Review
  - MICE Project Board
  - Principally DOE and STFC
  - Chair of each reports to the Funding agency committee with input from Europe, US and UK budget holders
- Recommendations from each panel that need to be addressed



# Project Oversight

## Resource Loaded Schedule Review



Committee	Action	Owned by	Lead	Required participants
	Id			
RLSR	1 Complete the first action from the previous meeting. While the Panel appreciates the work to date it feels there is a need for more			Palmer
	<p>Following the good work done on establishing the criteria for the successful conclusion of Step IV, the project now needs to focus on looking at how to decide for Step V versus Step VI as it no longer looks like going to V and then VI sequentially is the most optimum option (this is not critical at this point but that decision point and the science trade-offs needs to be continually borne in mind by the project and the funding agencies).</p>			Managers
		MEMO/MIPO	Grant/Soler	Tarrant
	7 good work done on establishing the criteria for the successful conclusion of Step IV, the project now needs to focus on looking at how to decide for Step V versus Step VI as it no longer looks like going to V and then VI sequentially is the most optimum option (this is not critical at this point but that decision point and the science trade-offs needs to be continually borne in mind by the project and the funding agencies).	MEMO/MIPO	Long/Preece	Blackmore/Bradshaw/Cobb



# Project Oversight

## MICE Project Board



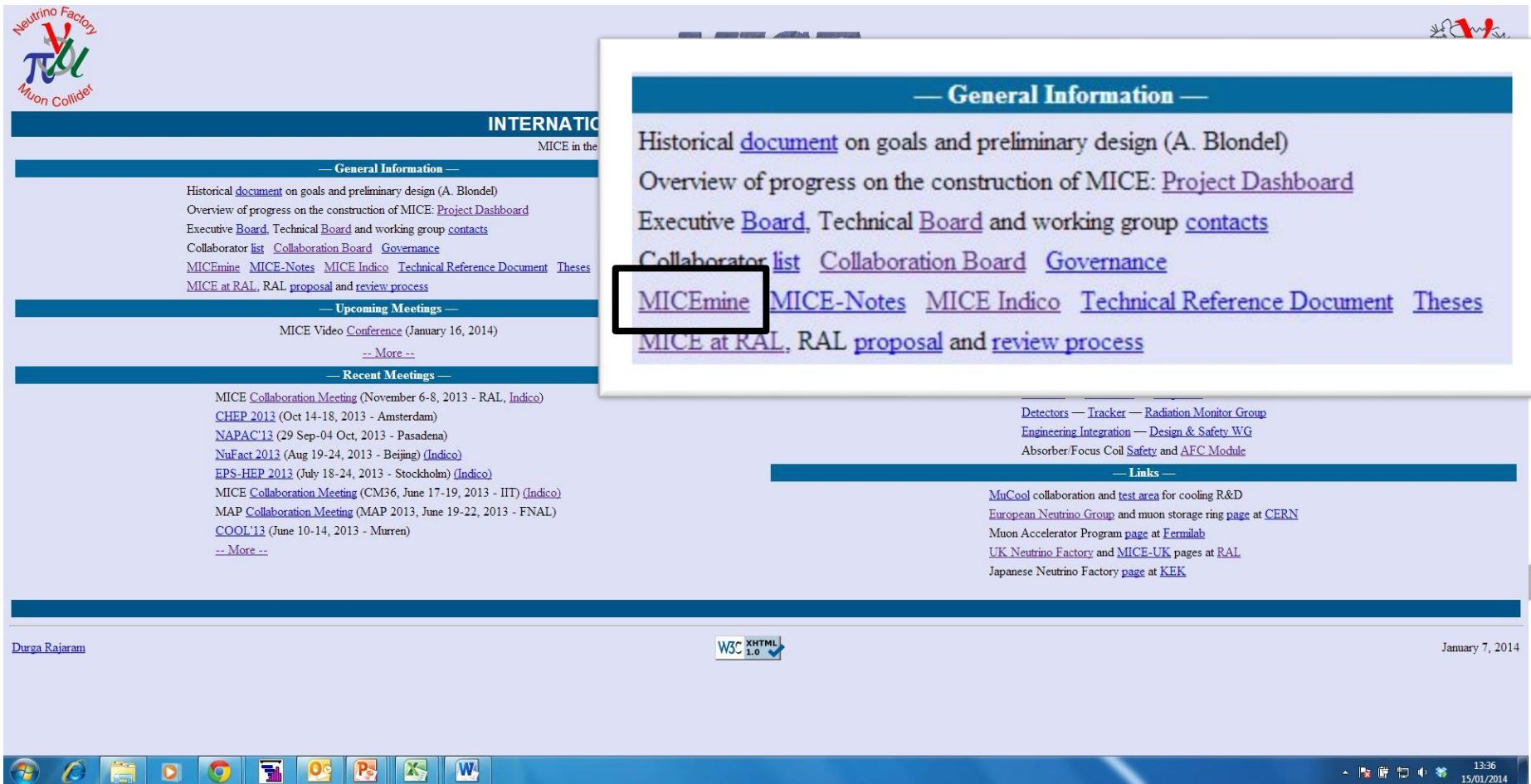
MPB	1	Document a set of modes for the magnets at each acceptance test and each Step (IV, V and VI) as installed such that a consistent set of conditions is used across all simulations, and present at next meeting.	MIPO	Nichols
	2	Clearly document the nominal operating point (or maximum operating point), and the design point for each coil, such that the magnet performance during a test is clearly compared to the target value. \dots Present documentation at next meeting.	MIPO	Nichols
	3	Document the acceptance criteria and establish the acceptance test plans for each coil, independent of whether the interface is a vendor or a collaborator, before testing begins. At minimum this will assist with the required tests completed before shipment.	MIPO	Nichols
	4	Present quench training results of the Focus Coil 2, CC1 cold mass and SS1 to the Board as soon as the data become available.		
	5	Develop a plan to select the method for muon transit RF phase determination – perhaps using such an integrated RF system test – and present findings at the next meeting.	MIPO	Preece
	6	Develop plans for an integrated RF system test at RAL---including RF power amplifier, prototype LLRF and a MICE cavity---and present at the next meeting.	MIPO	Preece
	7	Develop a plan to select the method for muon transit RF phase determination – perhaps using such an integrated RF system test – and present at the next meeting.	MIPO	Preece
	8	Present a status report on the MICE simulation, online and offline analysis capabilities and show results of the end-to-end Monte Carlo simulations, including tracking and reconstruction, in support of the Step IV, V and VI physics goals at the next meeting.	MEMO	Long
	9	Fully define the responsibilities and personnel for MICE operations and maintenance support, taking into account shared responsibilities with ISIS where appropriate and efficient, at the next meeting.	EB	Long



# Information communication

## Where can you find project information

- On the MICE website - <http://www.mice.iit.edu/>



The screenshot shows the MICE website interface. On the left is a sidebar with a logo for the Neutrino Factory Muon Collider. The main content area is titled 'INTERNATIONAL MICE in the' and contains several sections: 'General Information', 'Upcoming Meetings', and 'Recent Meetings'. A callout box highlights a set of navigation links: 'MICEmine', 'MICE-Notes', 'MICE Indico', 'Technical Reference Document', and 'Theses'. At the bottom of the page, there is a footer with the name 'Durga Rajaram', a 'W3C XHTML 1.0' logo, and the date 'January 7, 2014'. The Windows taskbar is visible at the very bottom.

**Neutrino Factory Muon Collider**

**INTERNATIONAL MICE in the**

**— General Information —**

Historical [document](#) on goals and preliminary design (A. Blondel)  
Overview of progress on the construction of MICE: [Project Dashboard](#)  
Executive [Board](#), Technical [Board](#) and working group [contacts](#)  
Collaborator [list](#) [Collaboration Board](#) [Governance](#)  
[MICEmine](#) [MICE-Notes](#) [MICE Indico](#) [Technical Reference Document](#) [Theses](#)  
[MICE at RAL](#), [RAL proposal](#) and [review process](#)

**— Upcoming Meetings —**

MICE Video [Conference](#) (January 16, 2014)  
[-- More --](#)

**— Recent Meetings —**

MICE [Collaboration Meeting](#) (November 6-8, 2013 - RAL, [Indico](#))  
[CHEP 2013](#) (Oct 14-18, 2013 - Amsterdam)  
[NAPAC'13](#) (29 Sep-04 Oct, 2013 - Pasadena)  
[NuFact 2013](#) (Aug 19-24, 2013 - Beijing) ([Indico](#))  
[EPS-HEP 2013](#) (July 18-24, 2013 - Stockholm) ([Indico](#))  
MICE [Collaboration Meeting](#) (CM36, June 17-19, 2013 - IIT) ([Indico](#))  
MAP [Collaboration Meeting](#) (MAP 2013, June 19-22, 2013 - FNAL)  
[COOL'13](#) (June 10-14, 2013 - Murren)  
[-- More --](#)

**— Links —**

[Detectors](#) — [Tracker](#) — [Radiation Monitor Group](#)  
[Engineering Integration](#) — [Design & Safety WG](#)  
[Absorber/Focus Coil Safety](#) and [AFC Module](#)

[MuCool](#) collaboration and [test area](#) for cooling R&D  
[European Neutrino Group](#) and muon storage ring [page at CERN](#)  
Muon Accelerator Program [page at Fermilab](#)  
[UK Neutrino Factory](#) and [MICE-UK](#) pages at [RAL](#)  
Japanese Neutrino Factory [page at KEK](#)

Durga Rajaram January 7, 2014

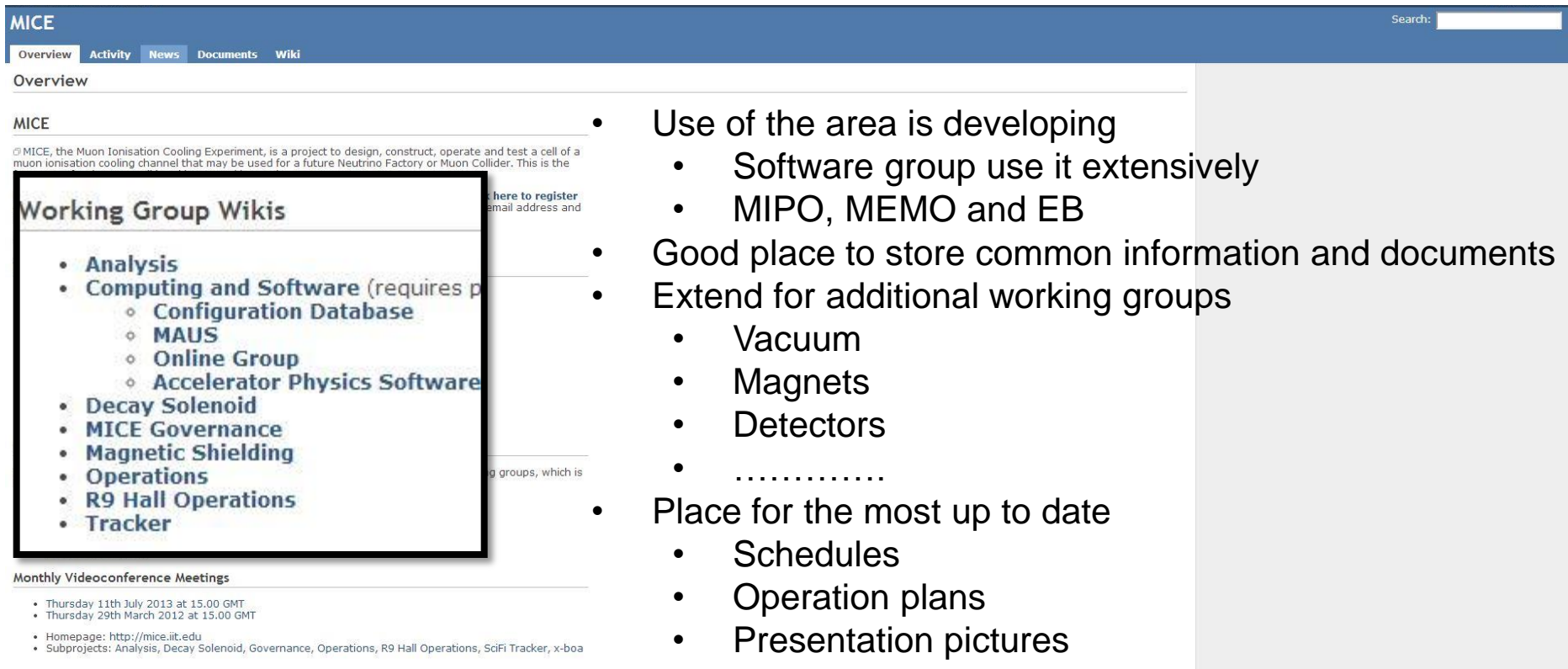
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# Information communication

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MICE

Overview Activity News Documents Wiki

Overview

MICE

© MICE, the Muon Ionisation Cooling Experiment, is a project to design, construct, operate and test a cell of a muon ionisation cooling channel that may be used for a future Neutrino Factory or Muon Collider. This is the

Working Group Wikis

- Analysis
- Computing and Software (requires p
  - Configuration Database
  - MAUS
  - Online Group
  - Accelerator Physics Software
- Decay Solenoid
- MICE Governance
- Magnetic Shielding
- Operations
- R9 Hall Operations
- Tracker

Monthly Videoconference Meetings

- Thursday 11th July 2013 at 15.00 GMT
- Thursday 29th March 2012 at 15.00 GMT
- Homepage: <http://mice.iit.edu>
- Subprojects: Analysis, Decay Solenoid, Governance, Operations, R9 Hall Operations, SciFi Tracker, x-boa

- Use of the area is developing
  - Software group use it extensively
  - MIPO, MEMO and EB
- Good place to store common information and documents
- Extend for additional working groups
  - Vacuum
  - Magnets
  - Detectors
  - .....
- Place for the most up to date
  - Schedules
  - Operation plans
  - Presentation pictures
- Association with the log book

# Summary

- Progress toward Step IV is extremely encouraging
- The whole MICE team is pulling together in our common goal
- Proof of principle - Step IV has a huge knock on effect to future programs
- We have a program of work and we must work that plan
- We should resist “nice to have” changes to the agreed program
- Lets continue the hard work and have a cooling channel to play with next year.





# Questions

