



# MICE Financial Position FY 13 – 14

## Project Risk

OSC Meeting

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24<sup>th</sup> April 2014



# MICE Financial Position FY 13 - 14

- Spend to end of FY
- New financial structure
- Financial oversight

# Route to the current position

- Finance department made transfers from previous years (2009-present).
- Applied to this FY, leading to a confused spend position. ~£2.8M transferred.
- From the £2.8M transferred into the finances this year, the fraction of the current spend year (Apr – July) needed to be found to get back to a workable position.
- Each month the spend figures coming from SBS required work to gain an actual spend figure.
- An error was spotted during the February finance meeting where £300k had been removed from Capital to account for transfers that should be made to Resource.
- Before finding this error the view was an underspend, work was put in to reduce the underspend.
- It has been a very confusing period and a lot of work has been put in to try to achieve balanced books.



# Current Position – Against Allocation

		Allocation	Total	O'heads 14B
STAK00014	Staff	445.00	638.65	
Capital	Capital	980.00	1024.06	
STAK00058	Capital		126.20	
		<b>STAK00014 Total</b>	<b>1788.91</b>	
STAK00014B	Staff	300.00	199.85	84.07
Resource	Capital		265.83	
		<b>STAK00014B Total</b>	<b>465.68</b>	
STAK00051	Staff	80.00	173.35	
Resource	Travel	15.00	142.07	
	Capital	170.00	175.62	
		<b>STAK00051 Total</b>	<b>491.04</b>	
		<b>Total Allocation</b>	<b>1990.00</b>	
		<b>Total Spend Inc Overheads</b>	<b>2745.63</b>	
Income	Common Fund	88.00	122.00	
	EU Card	34.00		
		<b>Variance</b>	<b>-633.63</b>	<b>-549.55</b>
8% overspend projected in April was			143.00	
Adjusted Variance allowing for 8% overspend				-406.55
<b>Note!</b>				
Agreed at PSAG mtg 3/2/2014 that MICE would not be expected to pay overheads on STAK00014B				
Overheads were top sliced at beginning of FY and this resource element only introduced mid way through yr.				
Agreed MICE could operate with the 8% projected overhead in April of £143k				

- Field mitigation
  - Partial Return Yoke
  - Changes to current structures
  - Rack room 2
  - West Wall mezzanine
- Vacuum Manifold
- RF equipment shipping
- RF equipment for Step V
- Large staff booking
  - End of FY ~ £20K
  - Phantom due to transfers?
  - Investigating
- NON-Cash Burden charge
  - STAK00014B - ~£16k



# New Financial Structure - History

- The inherited project code structure was mapped from the original financial structure.
- Created a very confusing and error prone code structure
  - Eg – 01.02.01.07.04
- Many “Project Managers” for the codes
  - Purchase orders approved by NON-budget holders
  - This caused un-budgeted spend to go through
  - Cost encumbrance being the first indication of spend
- Assets cannot be specifically identified
  - Labour and capital spend in separate pots
  - Many items under the same code

<b>MICE PHASE 2 CONSTRUCTION</b>		
<i>Staff spend total</i>		
<i>Capital and Recurrent spend total</i>		
<b>Project Management and Project Office (Alan Grant)</b>		
02.02.01.01.01	A Nichols	MICE II WP1 Project Management and Project Office - <b>TD Staff</b>
02.02.01.01.33	R Preece	MICE II WP1 Project Management and Project Office - <b>Capital</b>
05	A Nichols	Overheads (Questionable) <i>MICE Holding account on STAK00014B</i>
<b>MICE Muon Beam (Ken Long)</b>		
01.02.01.04	K Long	MICE II Beamline Maintenance & Operations - Staff & Capital
<b>02.02.01.01 MICE Mechanical Integration (Tim Hayler)</b>		
02.02.01.01.02	T Hayler	MICE II WP1 Project Engineering - Staff
02.02.01.01.05	A Nichols	MICE II WP1 Integration Engineering - UncategorisedCapital <i>STAK00014B</i>
02.02.01.01.07	G Barber	MICE II WP1 Step IV Tracker / Solenoid / AFC Integration - <b>Capital</b>
02.02.01.01.16	T Hayler	MICE II WP1 Step V AFC / RFCC Integration - <b>Capital</b>
02.02.01.01.17	M Courthold	MICE II WP1 Step I(IV - V) Vacuum system / Compressed Air Supply - <b>Capital</b>

# New Financial Structure

- New project code and task number creation
  - Along STFC Finance guidelines – interaction during construction
  - Arranged in such a way a to build assets
  - Labour and Capital in the same code
  - Single point approval for Purchase Orders over the two project codes.
  - Still many codes – less depth so less prone to error
- More checks within the current month
- Ensuring the Labour is booked during the correct month
- Balance the PO's and encumbrances
- Adjust spend according to findings and escalate any concerns

	Task Num	Sub Task	Task Number
Instrumentation - Tracking Module	1		
Instrumentation - Tracking Module - Spectrometer Solenoid Magnet		1	01.01
Instrumentation - Tracking Module - Tracker		2	01.02
Instrumentation - Tracking Module - Difuser		3	01.03
Instrumentation - Tracking Module - Radiation Shutter		4	01.04
Instrumentation - Detectors	2		
Instrumentation - Detectors - EMR		1	02.01
Instrumentation - Detectors - TOF		2	02.02
Instrumentation - Detectors - KL		3	02.03
Instrumentation - Detectors - cKov		4	02.04





# Risk

- Top level risk
- Risk item highlight
- Mitigation

# Top level risk table

PM & PO	Insufficient design staff available to meet project needs	6 month delay to schedule	4	4	16	AN	Discuss unfunded staff redeployment list with STFC management. Additional funding for staff being discuss with Sponsor.	2	4	8	Additional staff brought onto project to advance all remaining design activities. Packages of work defined and given to DL managers.	2		End of project
PM & PO	Insufficient technician staff available to meet project needs	6 month delay to schedule	4	4	16	AN	Discuss unfunded staff redeployment list with STFC management. Additional funding for staff being discuss with Sponsor.	2	3	6	Possible shortfall in mechanical design effort 1.5 SY/year. Possible shortfall in electrical effort 1.5 SY/year. Cost of mitigation is per year	2		End of project
LH3	Inability to recruit a full operations team, as required by the ISIS working group, in time to begin Step IV operations.	Delays to Step IV operations (3-6 months)	4	4	16	MICE and Technology Dept	Integrate LH2 responsibilities into remit of overall MICE operations team	2	4	8	Operations team construction under way, interaction with ISIS	0.1		Acceptance of operations team by MICE/ISIS safety committee
LH4	Inability to recruit or retain control engineering expertise to integrate system A with the AFC.	Delays to Step IV operations (3-6 months)	4	4	16	MICE and Technology Dept	Negotiate extension or replacement of Phil W with DL	3	4	12	Succession of team members need to be planned, particularly for safety critical items	0.1		Start of Step IV operation

- Design staff now found and on the project
- Technical staff (contract) in negotiation. DL staff in budget calculations – re-assign
- ISIS operational interaction agreed but not yet being used fully.
- LH2 systems expertise from ISIS, design support from DL





# Top level risk table

PM & PO	Extended solenoid commissioning in MICE Hall	Delayed step IV delivery	5	5	25	MICE - USA	Resolve ALL solenoid operational issues in USA prior to shipping	2	5	10	Re-training of the magnet is highly likely increasing time and LHe cost. Both Solenoid magnets have been fully trained and field mapped.	1	75	end of step IV
PM & PO	Extended focus coil commissioning in R9	Delayed step IV delivery	4	4	16	MICE	Resolve ALL focus coil issues in R9 prior to installation	2	5	10	Practices in place and operating. FC#1 re-training shows the magnet has remembered it's original training. Current level will be reduced.	1	25	end of step IV
PM & PO	Extended focus coil commissioning in MICE Hall	Delayed step IV delivery	4	4	16	MICE	Resolve ALL focus coil issues in R9 prior to installation	2	5	10	Practices in place and operating. FC#1 re-training shows the magnet has remembered it's original training.	1	25	end of step IV
PM & PO	Magnetic field effecting operation of electrical equipment	6month delay to schedule	5	5	25	MICE	Installation of Partial Return Yoke (PRY) agreed and progressing. All control and power systems moved to new Rack room.	2	5	10	With the PRY and rack room 2 mitigation strategies major risk reduced. There is still a risk of unforeseen equipment failure.	5	500	End step IV

- Spectrometer solenoid operations during training period well know. US team will be carrying out the re-training.
- Plan for Focus Coil reduced current.
- Focus coil looks to remember it's training
- PRY may not protect an unknown electrical item



# Top level risk table

PM & PO	Extended period of re-training for the lattice of magnets for Step IV - SS1/AFC/SS2.	Timescales for the training period, cost of the amount of LHe required to carry out the training the availability of the LHe	4	5	20	MICE	Discussions with BOC (or supplier) to agree delivery timescales and availability during heavy use periods	3	5	15	Each re-cool and fill of the Spectrometer Solenoid can take upto 500l LHe, AFC around 100L. Each full lattice quench could cost in the region of 7K.	100	End step IV	
PM & PO	VAT payable on the delivery of all equipment imported from the non-UK collaborators	Budgetary constraints resulting in reduced work force and installation activities being carried out.	4	5	20	MICE UK	Escalation of the issue to the legal department of the STFC	4	5	20	At the moment it is unknown if the cost can be mitigated. STFC to bear the cost burden, 20% of the value of each	0.5	2000k	Impacts Step IV and all other steps.
PM & PO	US budget cuts changing magnet manufacture, commissioning and delivery	Halting project installation and subsequent data taking. Loss of key personnel from the project.	2	5	10	MICE-US		N/A	N/A	n/a				Impacts Step IV and all other steps.

- Bring the lattice of magnets up together unknown operation.
  - High LHe usage probable
  - Need to arrange logistics of LHe deliveries with BOC, 500l / day
- VAT still an unknown, Downstream Spectrometer Solenoid arriving soon
- Budget cuts thought to be unlikely, uplift reported last year. No internal project mitigation strategy possible.

