



VC May 26th 2106

MICE Project Manager's Report



Step IV

Step IV extended through 2016

- QP/QD – near complete.
 - DL work completed
 - FNAL work completed
 - Ready to test and commission next week.
- Water
 - Chiller completed next week
 - Completion required 16th June – 2 weeks before ISIS user period.
 - Delays due to civils and agreement on contractor
 - Fallback to DI water for ISIS run in June.
 - Ensures maximum data/info from July run.
- H2
 - Gas supply re-config due to chiller – June – during ISIS run
 - Test of wiring mods in R9.
 - Absorber bodies ‘agreed good to go’





Demonstration of Ionisation Cooling

All Changed – no SSD replacement

- RF is once again on critical path – mechanicals “several months” clear
- RF Cavity Modules
 - Cavity couplers test completed at FNAL.
 - Cavity assembly in progress @ Berkeley – delivered to RAL this US FY. Visit next week.
- PRY almost ready to ship now
- RF power
 - 1st offline cavity test complete early '17
 - RF system #2 delayed – may no longer be required.
 - RF delivered to RAL summer 16
 - work starting on controls installation to racks.
 - 2016 running will change RF power availability date.
 - Plan for offline test and clean room provision.



Demonstration of Ionisation Cooling



Options: 2 solenoids vs. 1 solenoid

2 Solenoids

- SSD ECE only powered – magnet moved/turned through 180.
- Requires both SSU and SDD kept cold in hall – PITA.
- Uses PRY extension – concrete cutting – mess – clean up
- Project plan has long list of sequential tasks
 - Vulnerability to delays
 - Cascaded impacts to schedule
- Uses infrastructure already procured

Risk

- Only a small amount of reliability data will be generated on a timescale useful to next review.
- nobody likes SSD



Demonstration of Ionisation Cooling

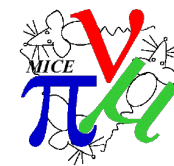


1 Solenoid Option

‘new configurations’

- Fit within existing PRY
 - No mess therefore no clean-up
- Requires engineering for ‘cooling cell’ support
- Magnet forces no longer balanced.
 - Many models/multiple input/good agreement
- Upgraded LiH mount to allow ‘in/out’ movement without breaking vacuum.
- RF ‘serviceability’ reduced.
- Re-use/re-purpose already manufactured parts.





Demonstration of Ionisation Cooling



Costs - Core

CORE Stop at Step IV - 1/7/2017

Work package		2016/17	2017/18	2018/19	2019/20	
Id	Name	£k	£k	£k	£k	£k
Total staff and non-staff by work package						
MICE-UK						
1	Project management and project office	519.95	164.30			684.26
2	Mechanical integration	246.20	110.74			356.94
3	Electrical Integration	254.91	118.23			373.14
4	Focus-coil module	199.52	45.30			244.82
5	Hydrogn Delivery System	62.34	10.74			73.08
6	RF power					
7	Vacuum	61.92	17.54			79.47
8	Magnetic Mitigation	66.32				66.32
9	Software and computing	340.02	389.42	95.01		824.45
10	Operations and analysis	1045.79	896.96	294.49	149.26	2386.49
Grand totals		2796.98	1753.24	389.50	149.26	5088.98

MICE-UK	Cost of risk mitigation	130.00	20.00			150
	% above allocation	-14%	-48%	-90%	-98%	



Costs 1 Solenoid

Descope - 1SS

Work package		2016/17	2017/18	2018/19	2019/20	
Id	Name	£k	£k	£k	£k	£k
Total staff and non-staff by work package						
MICE-UK						
1	Project management and project office	519.95	585.87	185.21		1291.03
2	Mechanical integration	332.65	289.33	113.82		735.80
3	Electrical Integration	310.91	275.49	117.52		703.92
4	Focus-coil module	199.52	186.20	91.96		477.68
5	Hydrogn Delivery System	62.34				62.34
6	RF power	457.87	399.13	160.11		1017.11
7	Vacuum	98.01	62.59	30.04		190.63
8	Magnetic Mitigation	66.32	11.49	5.83		83.65
9	Software and computing	340.02	389.42	380.04		1109.48
10	Operations and analysis	939.11	1101.80	974.22	149.26	3164.39
Grand totals		3326.70	3301.31	2058.75	149.26	8836.02
MICE-UK	Cost of risk mitigation	130.00	20.00			150
	% above allocation	3%	2%	-38%	-98%	



Costs 2 Solenoids

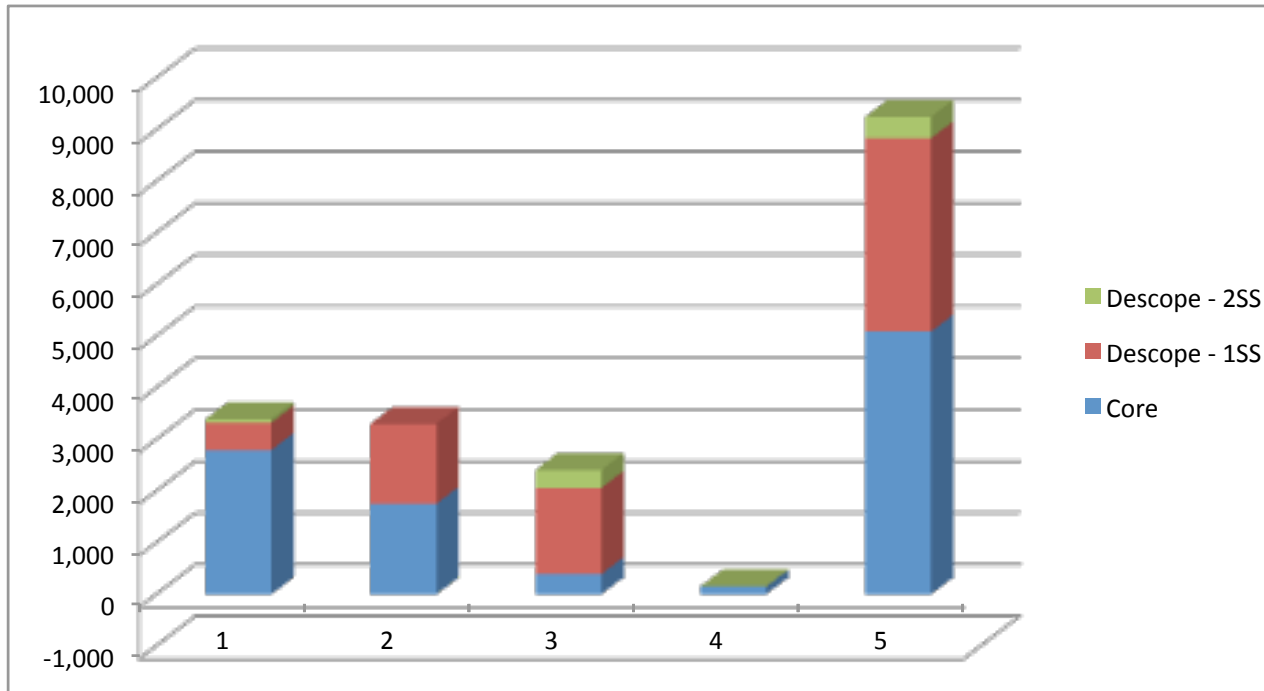
Work package		2016/17	2017/18	2018/19	2019/20	
Id	Name	£k	£k	£k	£k	£k
Total staff and non-staff by work package						
MICE-UK						
1	Project management and project office	519.95	585.87	265.36		1371.18
2	Mechanical integration	400.00	282.63	159.28		841.91
3	Electrical Integration	310.91	279.80	142.28		732.99
4	Focus-coil module	199.52	186.20	137.94		523.66
5	Hydrogn Delivery System	62.34				62.34
6	RF power	457.87	399.13	230.56		1087.55
7	Vacuum	98.01	62.59	37.33		197.92
8	Magnetic Mitigation	66.32	11.49	8.75		86.57
9	Software and computing	340.02	389.42	380.04		1109.48
10	Operations and analysis	939.11	1101.80	1046.16	149.26	3236.32
Grand totals		3394.05	3298.92	2407.68	149.26	9249.91

MICE-UK	Cost of risk mitigation	130.00	20.00			150
	% above allocation	6%	2%	-26%	-98%	



Costs Comparison

Cost to Completion Summary					
	2016/17	2017/18	2018/19	2019/20	Total Inc Mitigation Cost
<i>Core - Stop at Step IV</i>	2,797	1,753	389	149	5,089
<i>Descope - 1 SS</i>	3,327	3,301	2,059	149	8,836
<i>Descope - 2 SS</i>	3,394	3,299	2,408	149	9,250
<i>Increase/yr for descope -1SS</i>	530	1,548	1,669		3,747
<i>Increase/yr for descope -2SS</i>	597	1,546	2,018		4,161
<i>Increase 2SS vs 1SS</i>	67	-2	349		414



Cost Comparison

Cost to Completion Summary					
	2016/17	2017/18	2018/19	2019/20	Total Inc Mitigation Cost

Core - Stop at Step IV	2,797	1,753	389	149	5,089
% above allocation	-14%	-48%	-90%	-98%	

Descope - 1 SS	3,327	3,301	2,059	149	8,836
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