

Spokesman's update

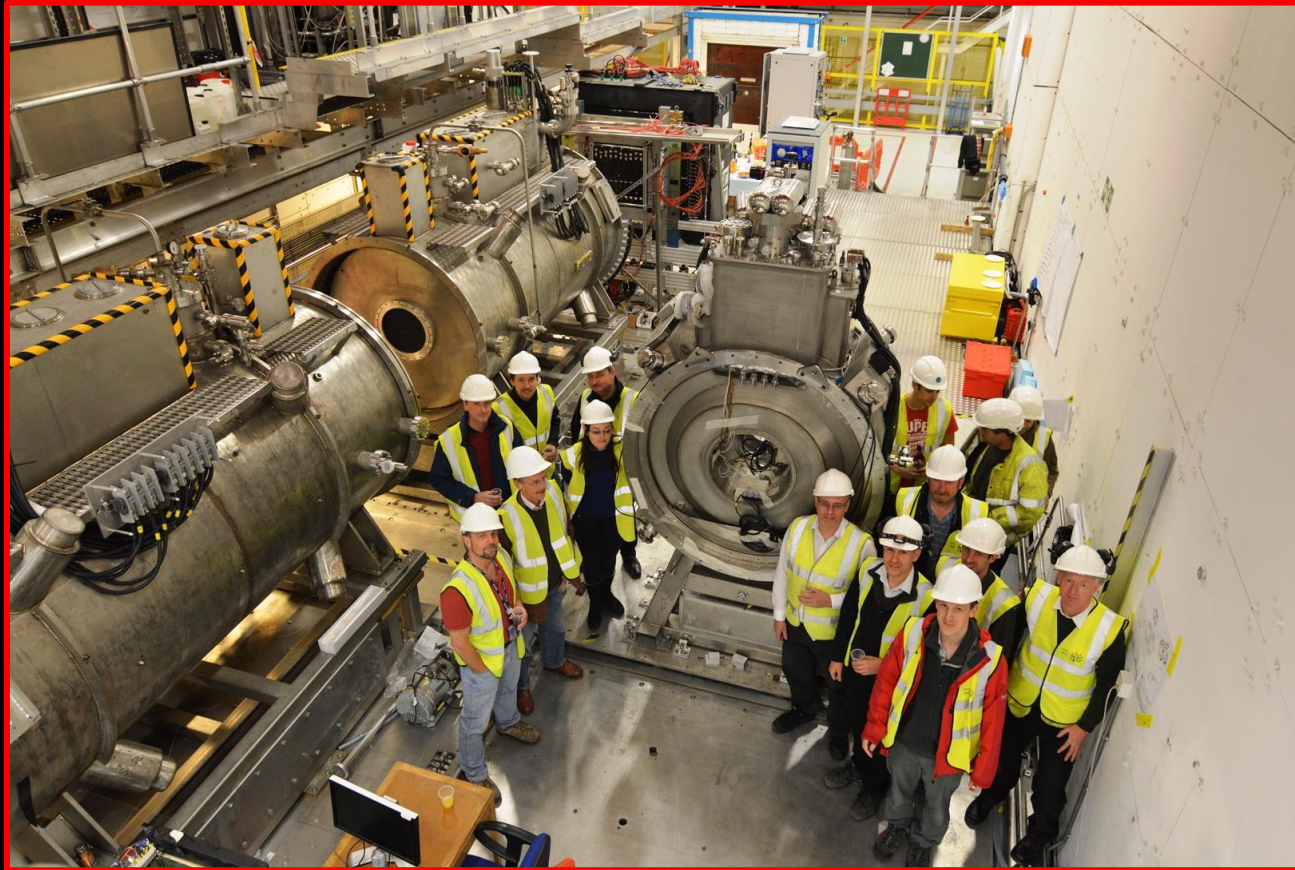
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[with reacceleration]
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Spokesman's update

UPDATE:

Update: MICE Hall, being readied for PRY:



- **PRY:**

- Preparation for installation of bases and restraints on track:
 - Expect to be installing first set of “uprights” starting January 2015

Emphasis shifting to commissioning and operations ...

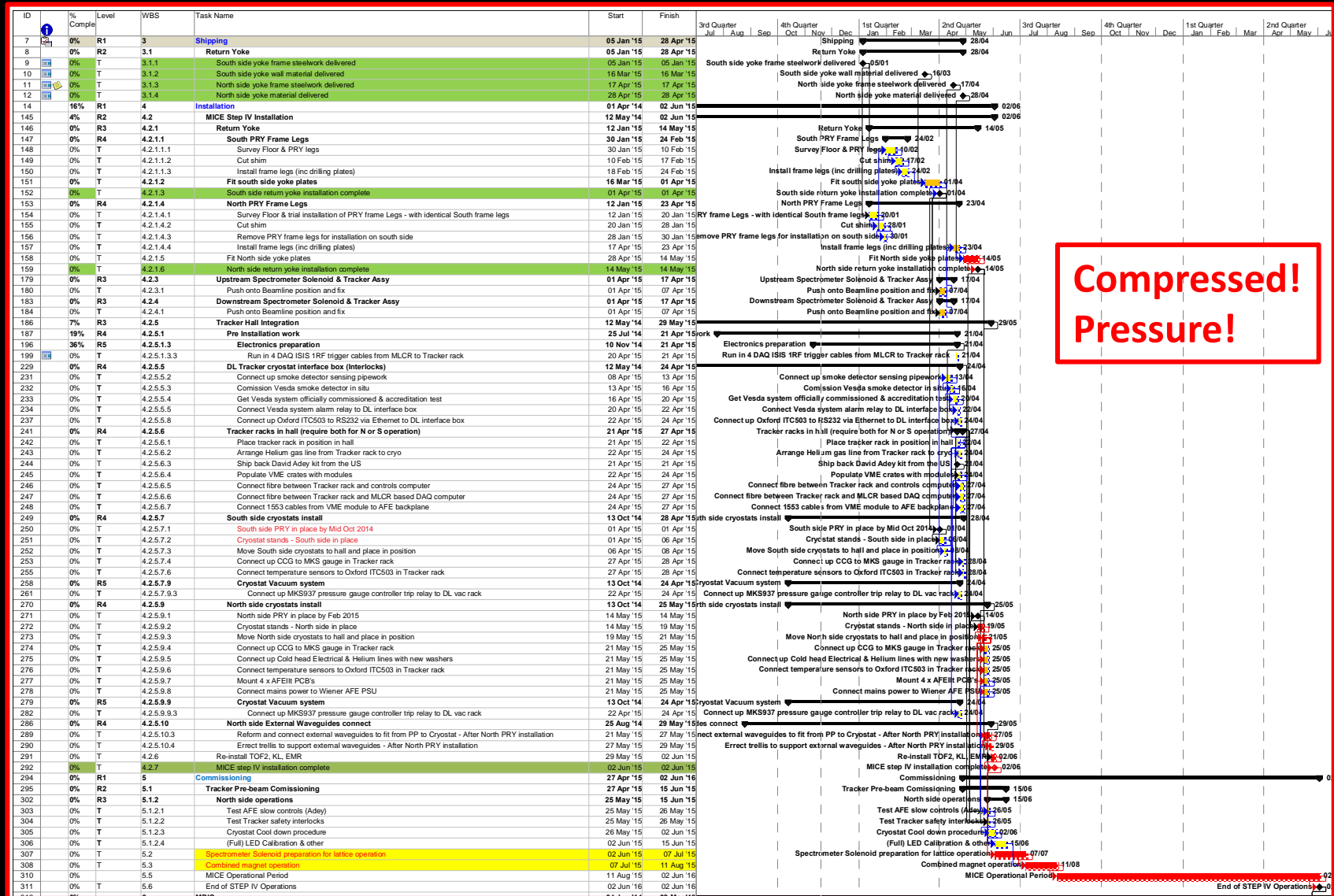
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STEP IV:

- INSTALLATION AND COMMISSIONING**
- PREPARATIONS FOR DATA TAKING**

Installation and commissioning [1 of 2]:

- Extract of schedule:



**Compressed!
Pressure!**

Installation and commissioning [2 of 2]:

- Schedule:
 - Lots of pressure to deliver on (or ahead of) schedule;
- Commissioning activities ...
 - DAQ, controls;
 - Detector
 - Magnets

... are *all* essential and must be planned and scheduled in parallel with installation
- Therefore critical that DAQ, detector, magnet groups work with construction team to plan and schedule your work:
 - Fixed points:
 - Input to schedule via:
 - Pierrick Hanlet (Experiment Integration Scientist);
 - Andy Nichols (Project Engineer); or
 - Craig Macwaters (Operations Engineer)
 - Attend the MICE Hall Meeting: Wednesdays, 13:30 R66 G06
 - Your attendance at this meeting is a requirement;
 - i.e. it is not optional!
 - Information flow through this meeting is an essential part of our safety plan
 - From New Year weekly (and monthly) Hall work plans will be published
- You need to be part of the solution;
 - If you do not plan with local team you may find that the support you require is not available needed

Preparation for data taking:

- Plans being prepared by Operations group;
 - See S. Boyd's talk ...
 - First joint operations-planning meeting with ISIS took place 01Dec14:
 - A success
 - Again see S. Boyd's talk
- Major milestone:
 - Mock data run in the week of 21Jan15
 - That is the week the mock data run will take place;
 - You need to be ready!
- Shifts:
 - Data taking time reduced by a factor of two if we have to run 16/5 rather than 24/7
 - Shift tool will be released for “beta-test” before Christmas
 - Released for production:
 - Institute leads to engage and complete their shift assignments
 - By CM41 we need to be sure we can run a safe operation
 - » This is a hard deadline for a hard decision!

Spokesman's update

**DEMONSTRATION OF IONIZATION
COOLING
[WITH REACCELERATION]**

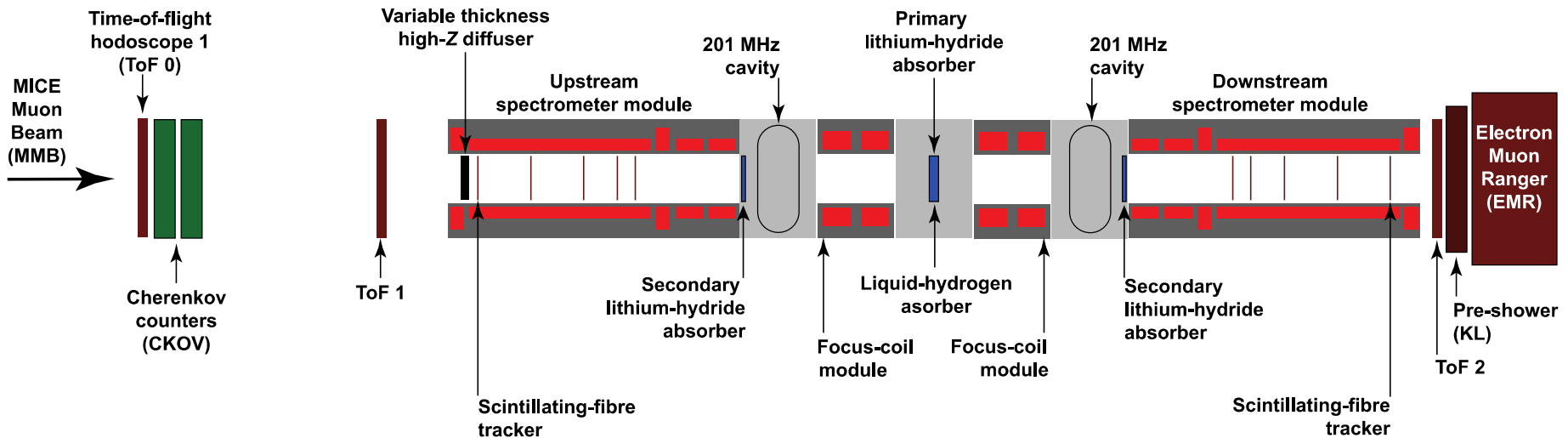
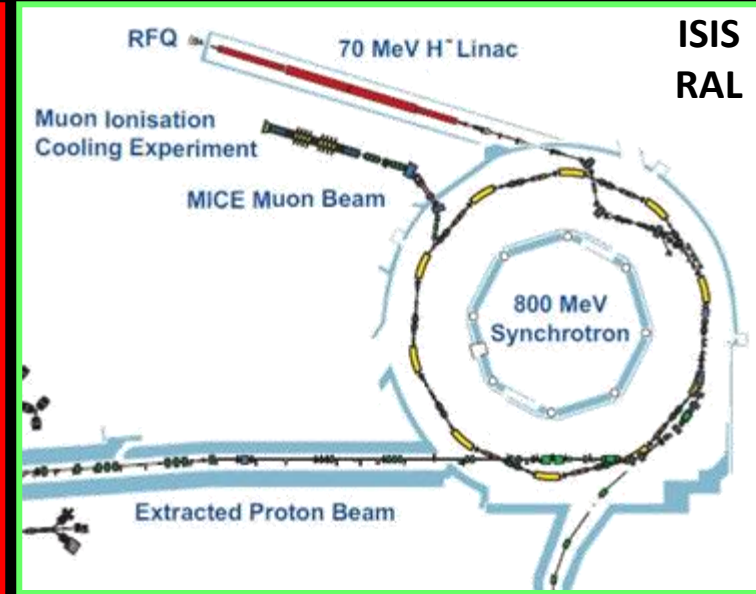
Reprise: 1 slide from August DOE debrief:

VC 22Aug14

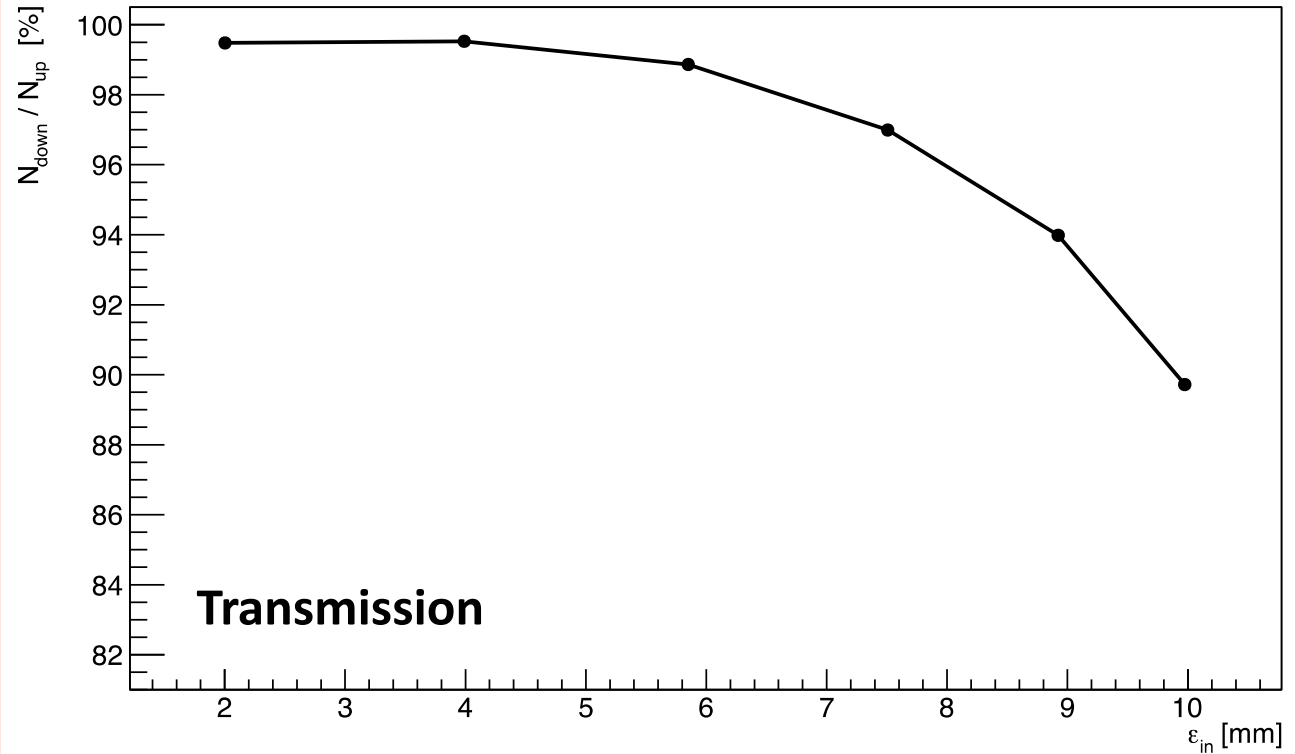
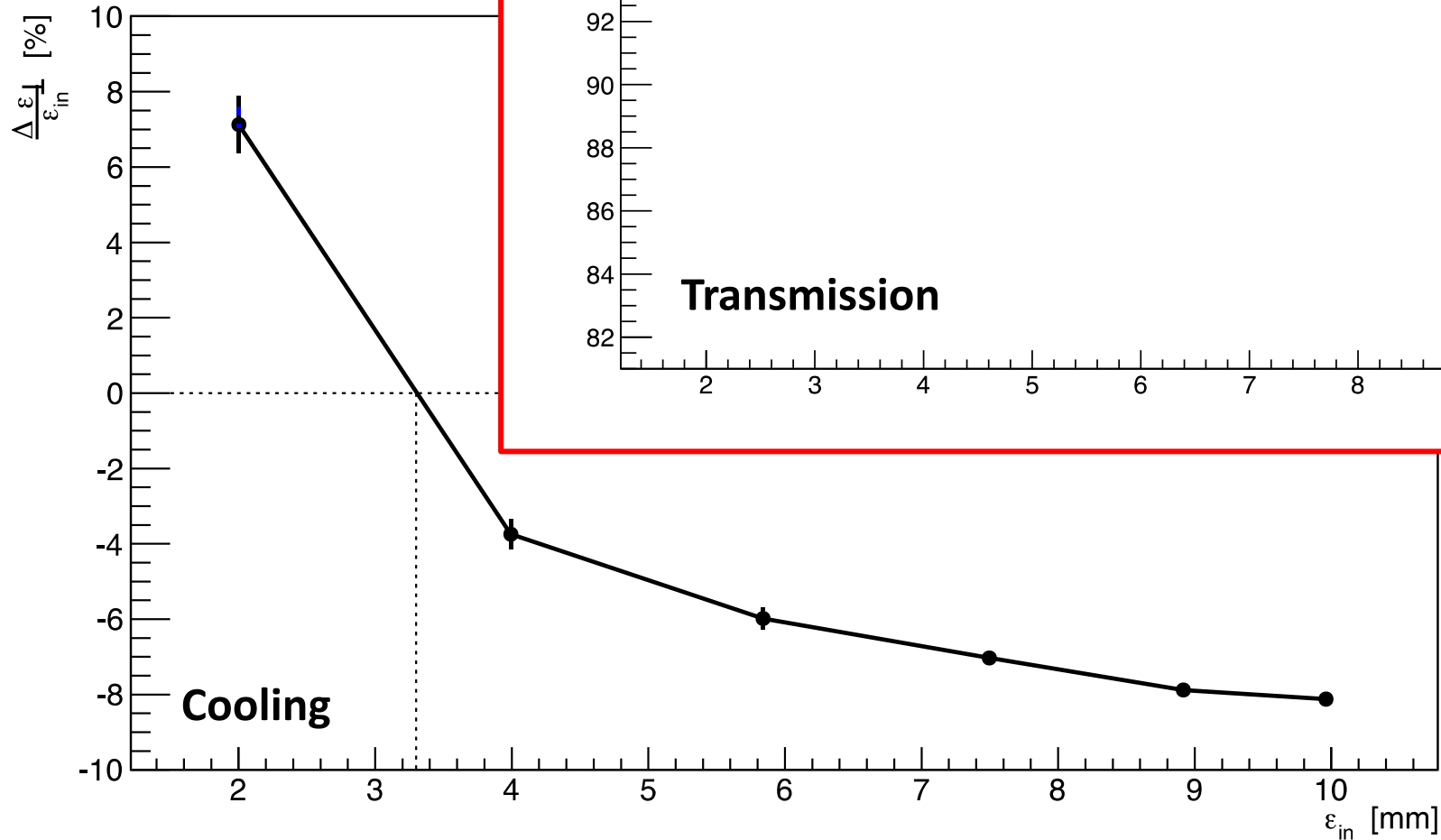
Going forward; my view:

- Support preparation of document as requested in the DOE by 15Sep14:
 - Initial “good enough) analysis of Step 3pi/2;
 - Initial analysis of cost/schedule/risk;
- The revised plan is further developed and “put before” the collaboration at its next meeting (24-28Oct 2014):
 - By this time the necessary detailed studies to assess the level of performance will have been done carefully and the collaboration will have had time to deliberate;
- The next international review of the project (Nov 2014):
 - Resource Loaded Schedule Review panel; and the
 - MICE Project Board
- will then review the consensual revised plan and present to the Funding Agency Committee their recommendations
 - If we do our work properly I would anticipate that the recommendations will be in line with the our analysis

- **MICE: proof of principle:**
 - Design, build, commission and operate a realistic section of cooling channel
 - Measure its performance in a variety of modes of operation and beam conditions
 - Results will allow Neutrino Factory complex to be optimised



Cooling demonstration; performance:



Ionization cooling demonstration:

- **Rebaselined!**
 - **A great success;**
 - **My congratulations to all involved!**
- **My view:**
 - **We've reset the clock; our future is once again in our hands. That is:**
 - **We can and must**
 - **Deliver Step IV on schedule**
 - **Measure the cooling properties of LH2 and LiH in a timely manner**
 - » **And publish!**
 - **So that we can deliver the ionization-cooling demonstration that underpins muon accelerators for particle physics in 2017**

Id	Milestone	Date
Step IV		
1	Compressors ready for cooling channel tests	29th January 2015
2	Rack Room Complete	2nd February 2015
3	South side yoke material delivered	16th March 2015
4	South side return yoke installation complete	1st April 2015
5	North side yoke material delivered	28th April 2015
6	North side return yoke installation complete	14th May 2015
7	MICE Step IV installation complete	2nd June 2015
8	Combined magnet operational tests complete	11th August 2015
9	End of Step IV Data taking	1st June 2016
Cooling demonstration		
10	Partial Return Yoke materials arrive at RAL	10th May 2016
11	RF Cavities arrive at RAL	18th May 2016
12	Step IV De-Commissioning complete	22nd July 2016
13	RF Amplifier delivered	31st August 2016
14	RF Amplifier 1 ready for electrical commissioning	6th October 2016
15	RF Amplifier 2 ready for electrical commissioning	7th November 2016
16	Installation of PRY South starts	14th December 2016
17	Installation of the RF Cavities and Chambers starts	19th January 2017
18	Installation of North PRY complete	1st February 2017
19	Cooling Demonstration construction complete	24th March 2017
20	Cooling Demonstration commissioning complete	2nd May 2017
21	End of data taking in the cooling-demonstration configuration	31st March 2018

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RLSR, MPB AND FAC

**[24 AND 25 NOVEMBER 2014; RECOMMENDATIONS AND
ACTIONS]**

Recommendations and actions:

Actions from the DsC, Resource Loaded Schedule Review, MPB and FAC

Committee	Id	Action	Owned by	Lead	Required participants
RLSR	1	The project must ensure that results from the Step IV data-taking are are obtained as soon as possible in order to support the UK application application to STFC for remaining funding for the completion of the the project.	MIPO	Preece	Nichols, Cross, WBS
	2	The STFC Programmes Directorate should give firm undertaking that that the additional funding (£180k) required for FY15/16 will be made made available as a release of centrally-held contingency contingency. Failure to provide this will have a negative impact on on the Step IV and Final Step Schedules.	STFC	Jamieson	Soler, Long, Preece
	3	The commissioning/controls/software Schedules/milestones should be be included in the top-level project Schedules with appropriate milestones milestones included in the milestone (waterfall) charts.	MIPO/ MEMO	Preece/ Rajaram	S/w&C managers
	4	The project is requested to inform the MPB of the update of the dashboard dashboard on a bi-monthly basis so that members can remain informed informed of progress between meetings.	MIPO/ MEMO	Preece	WBS, Operations, S/w&C managers
	5	If necessary, the project must work with STFC Programmes Directorate Directorate to ensure that the required RF Staff at DL ASTeC and DD DD) will be made available on the timescale needed to meet the critical critical milestone for the MICE Final Step. This action should not not be delayed so that if the staff are not available, there is adequate adequate time to seek an alternative solution.	MIPO	Long	Preece, Grant

Recommendations and actions:

Actions from the DsC, Resource Loaded Schedule Review, IMPB and FAC

Committee	Action	Owned by	Lead	Required participants
MPB	Technical Systems			
1	(RF) Investigate how and where the modified cavity power couplers can be tested at full RF power at the earliest convenience, in order to mitigate any project risks. A power coupler test bench could be considered.	MIPO	Bross	
2	(Absorbers) Ensure that the required resources will be in place for the operation of the H2 absorber during Step IV running, for example in the form of more robust MICE liquid hydrogen team.	MIPO	Nichols	Watson
3	(Absorbers) Prepare for an accurate comparison of the H2 and H1 absorber efficiencies during Step IV.	MIPO/ MEMO	Preece/Long	WBS, Operations
4	(Controls) Maintain good progress in the control systems in order to provide adequate readiness for the start of Step IV commissioning.	MEMO	Hanlet	Overton
Data acquisition, simulation and reconstruction				
5	Investigate as a matter of urgency technical means to optimize the trigger efficiency for good muons, and remove data flow bottlenecks before the Step IV run.	MEMO	Rajaram	Smith, Adey, Kharadzov
6	Plan and execute a blind physics analysis challenge in order to ensure the readiness of the whole collaboration for data analysis, early in 2015.	MEMO	Rogers	Rajaram, Bayes
7	Ensure optimization of the beamline settings in order to preserve matching at the entrance of the ionization channel and potentially increase the number of good muons, during the Step IV run.	MIPO/ MEMO	Pasternak	Rogers, Blackmore
8	Include a set of measurements in the configuration with large beta functions in Step IV data taking, in order to validate the muon tracking tools for trajectories with large displacements passing through nonlinear magnetic fields, and to explore the size of the cooling system apertures.	MEMO	Boyd	Pasternak, Rogers
9	Finish documentation of the technical software and systems of the experiment before the Step IV commissioning and data-taking run.	MEMO	Rajaram	Smith, Hanlet
Commissioning, operations and data analysis				
10	Establish and implement the practical safety and operational steps required to operate the MICE detectors and take data alongside magnet commissioning, between now and the start of Step IV data taking.	MIPO/ MEMO	Nichols	Boyd/Pasternak
11	Take all necessary steps to ensure 24/7 exploitation of the experiment during all commissioning and data taking runs.	MEMO	Long	Boyd
12	Optimise the offline computing production plan in order to allow sufficient real-time track reconstruction and data analysis, to provide the most rapid possible feedback to shift crews and experts on experimental performance in Step IV.	MEMO	Rajaram	Dobbs, Smith

Response to be prepared and submitted with first bi-monthly progress report early Jan15

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PAPERS

Papers:

Table 2: Physics and technical papers being prepared by the collaboration.

Title	Lead authors
Step I physics	
Electron Muon Ranger: performance in the MICE Muon Beam Progress meetings: EMR yesterday; Pion-contam today.	A. Blondel, F. Drielsma, R. Asfandiyarov
Measurement of the pion contamination in the MICE Muon Beam	D. Orestano, D. Nugent, P. Soler
Step IV physics	
Commissioning of the MICE experiment in the Step IV configuration First discussion/planning meeting 26Nov14	C. Rogers
Ionization cooling demonstration	
Design and expected performance of the MICE demonstration of ionization cooling 18Dec14; lattice freeze (milestone);	V. Blackmore, J. Pasternak, C. Rogers
Technical JBL will take over as editor.	
The MICE target upgrade Draft being assembled.	C. Booth
The design construction of the MICE Electron Muon Ranger No update.	R. Asfandiyarov, A. Blondel, F. Drielsma
The Reconstruction Software for the MICE Scintillating Fibre Trackers Draft from A. Dobbs in circulation.	S. Dobbs Draft circulated; work underway
The MICE Analysis and User Software framework	D. Ragaram to complete draft

Spokesman's update

VCS AND CM41

VCs and CM41:

- **Video Conferences:**
 - **22nd January 2015**

- **CM41:**
 - **RAL: 9th to 13th February 2015**