

Response to feedback from the Resource Loaded Schedule Review panel and the MICE Project Board

The project team welcomes the reports from the Resource Loaded Schedule Review panel and the MICE Project Board following their meetings in October 2015. This document provides the project team's response to each of the RLSR panel's and the MPB's recommendations.

Resource Loaded Schedule Review

Actions

1. **The STFC needs to communicate concerns about potential transferred risks to the US project side prior to the second Solenoid Review.**

The project team notes the action and is ready to clarify issues identified by the STFC or its partners in the course of the communication referred to.

2. **The STFC needs to be made aware of the consequences of the flat-cash funding profile on the schedule of the project (action on the RLSR Chair).**

The project team notes the action and is ready to provide clarifications as required to the chair of the RLSR panel.

3. **The Project Spokesperson is actioned to approach other agencies involved in MICE to determine if appropriate resource for construction and commissioning could be injected into the project especially in the RF area.**

Lead author: KL

Initiated. Finish section "just before response to feedback is submitted".

4. **The collaboration must be fully informed of input to and outputs from the second Solenoid Review.**

The collaboration is being kept closely coupled to the preparations for the second solenoid review and will be represented across the relevant areas of expertise.

5. **The output from the second Solenoid Review must be fed into the Beam Dynamics review of early December.**

Lead author: KL

Present status is that Doodle poll for second solenoid review is out for January 2016.

6. **The case for extending the data-taking for Step IV into ISIS run 2016/2 must be very carefully considered in terms of the risk to the overall schedule to completion (and thus increased cost) and this must be presented to the next RLSR/PMB.**

Lead author: CW

Recommendations

7. **The project is recommended to go ahead and procure the LiH secondary discs as soon as possible using prepayment and accruals (advice can be obtained from STFC on this procedure).**

Preparations are underway to begin the procurement of the LiH discs that will form the secondary absorbers. The purchasing route has been identified and the necessary permissions for advanced commitment of resources are being sought. Once a satisfactory quote has been received and the order will be placed.

8. **The Panel strongly recommends that the DoE offers some formal alleviation to the current hard schedule end-date and 9:6:3 funding profile. While this goes against the grain for top-level project**

management, the Panel is convinced that it is now necessary to relax these boundaries/constraints to reduce ongoing risk and maximise the probability of success for the MICE project to achieve its goals and hence maximise return for the funding agencies.

The project team notes the recommendation of the RLSR panel and will provide any necessary clarifications requested by the DOE.

- 9. The US Project Director should not undertake a fully resource-loaded schedule for the second Solenoid Review but rather investigate more than one option that provides a ‘good-enough’ solution and subsequently spend time working on the resourceloaded impacts in detail to report to the funding agencies in ~January.**

Lead author: MP

- 10. The STFC and DoE need to jointly agree on the future funding for MICE over the next three months–this is the most important recommendation/action from the entire Review.**

The project team notes the recommendation of the RLSR panel and will provide any necessary clarifications requested by the STFC and/or the DOE.

MICE Project Board

Technical systems; actions:

- 1. Show that the organization, effort and resources allocated to the RF work package are adequate with respect to the requirements of the experiments goal and time schedule, at the next MPB.**

Lead author: CW

- 2. Respond to the RF system recommendations of the September 2015 RF Review, and report at the next MPB.**

Lead author: CW, KR

Technical systems; recommendations:[resume]

- 1. Investigate the required resources to make the first amplifier chain available in the MICE hall simultaneously with the first cavity. Report back at the next MPB.**

Lead author: CW, KR

- 2. Prepare a plan that finds the extra staff resources required to put the RF project on track with the MICE schedule requirements, if the flat cash funding profile is relieved, by January 2016.**

Lead author: CW, KR

Spectrometer solenoid reconstruction; actions

- 1. Review and implement changes to the spectrometer solenoid power supply integrated system including a means for energy extraction before any further powering of either solenoid.**

Lead authors: MP, CW

- 2. Present conductor specifications, coil load line, operating point information, and a mechanical analysis of the coil and bobbin assembly at the Second Spectrometer Solenoid Review, so that any proposed design changes to the spectrometer solenoid in option (2) are well documented.**

Lead authors: MP, ABr

- 3. Confirm the charge and scope of the Second Spectrometer Solenoid Review by November 7 2015.**

A charge for the second Spectrometer Solenoid review was prepared and circulated. The completed charge may be found in [?].

- 4. Confirm the optics and performance limitations of various options at the Beam Dynamics Review, and keep the collaboration fully informed of these options.**

Lead authors: CR, JPa

5. **Confirm the timing and expectations for the follow-on review and meetings (around January) with the collaboration and the funding agencies.**

Lead authors: KL, CW, MP

Spectrometer solenoid reconstruction; recommendations

6. **Prepare technical, cost, schedule and risk information to an equivalent level for the Second Spectrometer Solenoid Review (in November or December) such that a preferred path going forward is confirmed.**

Lead author: MP

7. **Develop the preferred option from that review in more detail such that a full project plan is available for review in (about) January 2016.**

Lead author: MP

8. **Consider one team for fabrication and test of a new coil assembly at one location (for instance Fermilab), and another team for integration into the cryostat at a second location (for instance Europe).**

Lead author: MP

Data acquisition, simulation and reconstruction; recommendations

1. **Put into place a strong change management regime such that the status of the entire apparatus can be understood for future data analysis, thereby minimizing risk for future exploitation of the data.**

Lead author: DR

2. **Finish the evaluation and optimization of the optics configuration for Step IV, such that clear statements can be made about the reach of the experiment at the Beam Dynamics Review.**

Lead author: CR

3. **Carry out a similar program, investigating the reach of the experiment in a scenario with no M1 coil in the Cooling Demonstration with RF.**

Lead author: CR

Commissioning, operations and data analysis; action

1. **MICE must continue to operate a safety-first policy at all times, even under the pressure of operational setbacks.**

Lead author: AN

Commissioning, operations and data analysis; recommendations

2. **Ensure that adequate effort is available, and arrangements put in place, such that any and all data-taking opportunities can be exploited.**

Lead author: SB

3. **Reserve reasonable time on the test schedule of the first RF module-amplifier chain for the validation of the Low Level RF system and the muon-RF phase-timing scheme.**

Lead author: CW