

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

Recommendations

1. **The STFC Executive should urgently identify solutions to resolve the RF Engineering staffing effort shortfall, so that proper planning can be undertaken by the project.**

The RF system required for the MICE demonstration of ionization

Actions

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

Response.

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).**

Response.

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.**

Response.

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

Response.

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

Response.

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.**

Response.

Recommendations

1. **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).**

Response.

2. **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.**

Response.

3. **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.**

Response.

4. **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.**

Response.

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.**

Response.

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

Response.

Technical systems; recommendations:

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.**

Response.

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.**

Response.

Spectrometer solenoid reconstruction; actions

3. **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.**

Response.

4. **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.**

Response.

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

Response.

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

Response.

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

Response.

Spectrometer solenoid reconstruction; recommendations

8. **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.**

Response.

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

Response.

10. **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).**

Response.

Data acquisition, simulation and reconstruction; recommendations

11. **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.**

Response.

12. **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.**

Response.

13. **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.**

Response.

Commissioning, operations and data analysis; action

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

Response.

Commissioning, operations and data analysis; recommendations

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

Response.

16. **2. 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.**

Response.