

Management of the MICE construction, maintenance, operations and analysis activities

1 Preamble

This note describes the management of the MICE construction project and the management of the operations, maintenance and analysis activities. Responsibilities for the safe execution of the construction project and the safe maintenance and operation of the experiment are defined.

The construction project is the responsibility of the MICE International Project Office (MIPO), which is chaired by the Project Manager (section 2). The operations, maintenance and analysis activities are the responsibility of the MICE Experiment Management Office (MEMO) which is chaired by the Spokesperson (section 3). Coordination of the construction, operations and maintenance activities is ensured by cross membership of the MIPO and MEMO (section 4). Both the MIPO and the MEMO may co-opt as required to ensure that appropriate expertise is available to ensure good decision making.

The body of this note defines the principal roles in the MIPO and the MEMO. The individuals fulfilling the roles are listed in the appendix. Appointments will be made for a period of two years and may be renewed. It is taken as read that the Deputy Spokesperson may deputise as appropriate for the Spokesperson. This note, or its appendix, will be re-issued from time to time to reflect changes in personnel, organisation or function.

2 MICE International Project Office

The organogram for the MIPO is shown in figure 1. The top-level roles within the MIPO are:

Project Manager: The Project Manager is responsible for managing the MICE construction project. The construction project is taken as encompassing the construction or procurement of all components of the MICE Muon Beam, MICE experiment and the associated infrastructure, the integration of these components and their installation in the MICE Hall (R5.2) at RAL. The Project Manager is responsible for the preparation of the resource-loaded schedule, the risk analysis and the development and implementation of risk-mitigation strategies. He/she coordinates the preparation of reports as required by the various stakeholders, including: the Resource Loaded Schedule Review Panel, the MICE Project Board, the Funding Agency Committee, the MICE Collaboration Board and the MICE Executive Board. The Project Manager reports on the construction project to the Director of the Particle Physics Department;

Project Engineer: The Project Engineer is responsible for executing the agreed programme in the MICE Hall and on the premises of the STFC Rutherford Appleton Laboratory. He/she is Group Leader in Matters of Safety (GLIMOS). In this role he/she has responsibility for safety in the construction, maintenance and operations projects at RAL. Responsibility for safety is delegated from the Director of PPD to whom the Project Engineer reports directly on matters of safety;

Accelerator Integration Scientist: The Accelerator Integration Scientist is responsible for ensuring that all components and systems that make up the MICE facility from the MICE target on ISIS, through the MICE Muon Beam, the spectrometer solenoids and the MICE cooling cell to the beam stop are integrated effectively. He/she is responsible for ensuring the functional integration of the experiment and that appropriate interlocks exist to obviate the risk that settings unsafe for personnel or equipment are inadvertently implemented. His/her remit includes consideration of the operation of the apparatus such that beams of appropriate composition, momentum and emittance are transported through the experiment;

Experimental Integration Scientist: The Experimental Integration Scientist is responsible for ensuring that the requirements of the instrumentation and of the experiment in operation are effectively conveyed to the Project Manager and the MIPO. His/her remit includes consideration of the configurations in which the experiment is to be operated and the requirements of the individual detector, controls and monitoring and data-acquisition systems;

MICE-UK capital Project Associate: The MICE-UK capital Project Associate is responsible for financial planning, schedule management and risk analysis in the MICE-UK capital project. He/she supports the Project Manager in all aspects of managing the work-packages that are the responsibility of the MICE-UK collaboration. The MICE-UK capital Project Associate is supported by the MICE-UK Project Management Office (MICE-UK PMO);

MICE-US construction Project Manager: The MICE-US construction Project Manager is responsible for financial planning, schedule management and risk analysis in the MICE-US construction project. He/she supports the Project Manager in all aspects of managing the work-packages that are the responsibility of the MICE-US collaboration. The MICE-US construction Project Manager is supported by the US MAP Project Management Office (US MAP PMO);

MICE-UK PI: The MICE-UK PI is appointed by STFC in consultation with the MICE-UK collaboration and is responsible for delivering the MICE-UK project in accordance with the requirements of the STFC and the international MICE collaboration; and

US Muon Accelerator Program (MAP) Director: The US MAP Director is appointed by the DOE in consultation with FNAL and the US MAP collaboration and is responsible for delivering the MAP programme, of which MICE is part, in accordance with the requirements of FNAL, the DOE and the international MICE collaboration.

The Spokesperson is an ex-officio member of the MIPO. With the successful commissioning of the Electron Muon Ringer (EMR) at RAL, the principal capital contributions to the project are UK and US responsibilities. Additional contributions, other than those from the UK and the US, are recognised in the box labelled “MICE-international project contributions”. The MICE constitution [1] provides for a Technical Board (see figure 2) to give technical advice to the Project Manager, the MIPO and the MEMO.

3 MICE Experiment Management Office

The MICE Experiment Management Office (MEMO) is responsible for the delivery of the scientific programme of the experiment as defined by the Spokesperson in consultation with the Executive Board and the Collaboration Board. As such, the MEMO is responsible for:

1. Coordination of the maintenance and operation of the experiment to ensure the high-quality data required to deliver the scientific programme is acquired in a timely and efficient manner;
2. Ensuring the smooth operation of the MICE Muon Beam and associated instrumentation, the MICE cooling cell, the MICE spectrometers and the experiment’s instrumentation;
3. Management of the analysis of the data from the experiment to ensure timely publication of high-quality results; and
4. Coordination of the analysis and simulation activities, including the determination of alignment and calibration constants to allow analysis of data with the required precision.

The organogram for the MEMO is shown in figure 2. The top-level roles within the MEMO are:

Spokesperson: The MICE constitution [1] states that the “Spokesperson is responsible to the Collaboration Board for the execution of the MICE project”;

Experimental Integration Scientist: The role of the Experimental Integration Scientist was defined in section 2. Within the MEMO, the Experimental Integration Scientist is responsible for carrying the maintenance

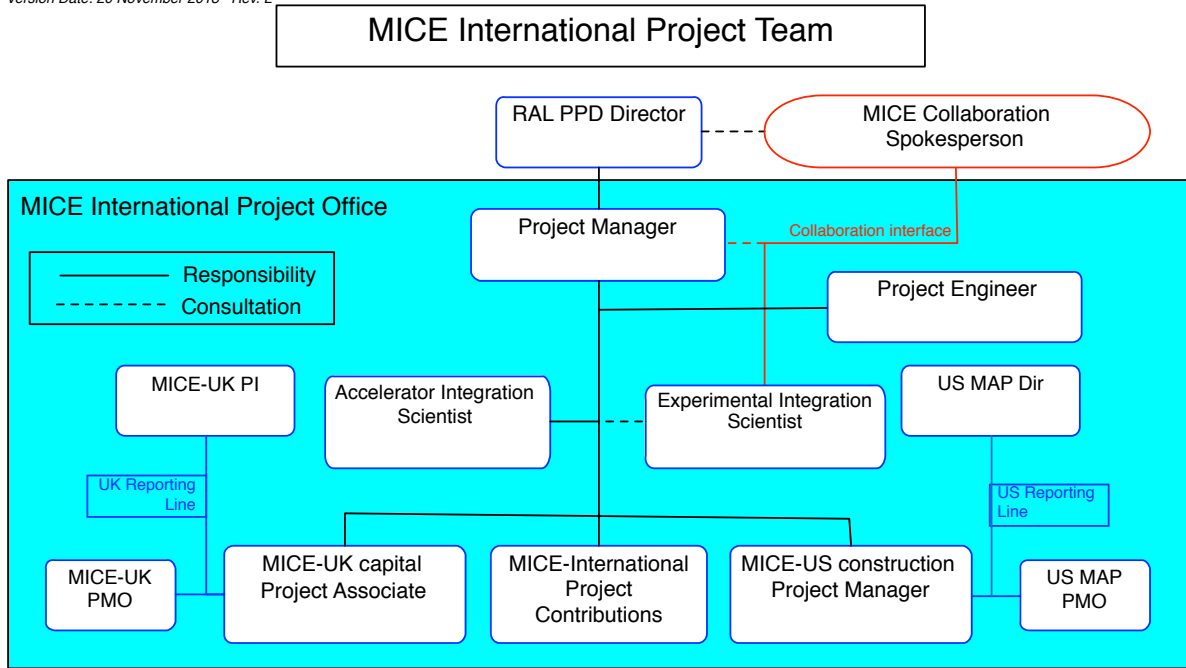


Figure 1: Organogram for the MICE International Project Office. Only the principal roles are presented. Solid lines indicate responsibility while dashed lines indicate consultation. The interface of the MIPO to the collaboration is indicated in red.

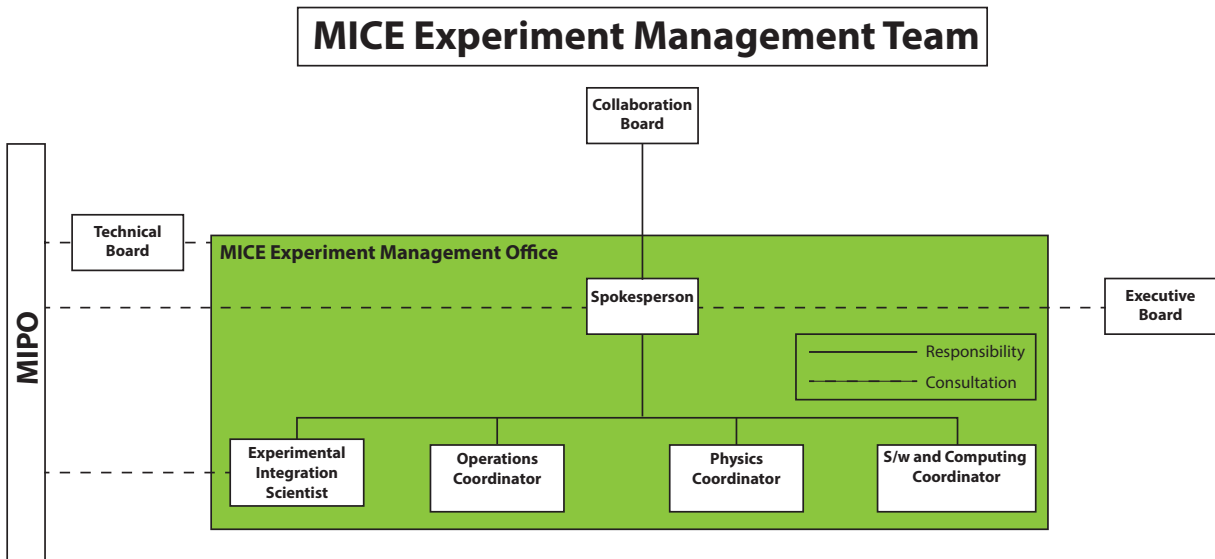


Figure 2: Organogram for the MICE Experiment Management Office. Only the principal roles are presented. Solid lines indicate responsibility while dashed lines indicate consultation. The interface of the MEMO to the MIPO is indicated.

and operational needs of the experiment to the MIPO so that implementation can be dove-tailed with the construction schedule (item 1 above);

Operations Coordinator: The operations coordinator is responsible for the smooth operation of the MICE experiment (item 2 above). Her/his remit includes the operation of the MICE Muon Beam, the MICE instrumentation and cooling cell, the operation of the real-time computing systems and the archiving of data to permanent storage. He/she leads the MICE operations team and is responsible, in consultation with the MEMO and the MICE collaboration, for the prioritisation of experimental configurations during data taking;

Physics Coordinator: The Physics Coordinator is responsible for coordinating the delivery of the analysis and the timely publication of high-quality results (item 3 above). His/her responsibility includes the timely derivation of the geometry and calibration constants required for the processing of the data from the experiment. He/she is also responsible for coordinating the production of the Monte Carlo data sets required to prepare for and plan periods of data taking and to support the analyses being carried out by members of the collaboration; and

The Software and Computing Coordinator: The Software and Computing Coordinator is responsible for delivering the online and offline software and computing environment required for MICE to take data and to control the experiment, the software and computing systems needed to process the data from the experiment with the required precision (both online and offline) and to simulate the experiment (item 4 above). His/her remit includes the coordination of the necessary computing hardware in the MICE Local Control Room and on the RAL site.

The roles of the Collaboration Board and the Executive Board are defined in the MICE collaboration constitution [1].

4 Interfaces between the MIPO and the MEMO

Information flow between the MIPO and the MEMO must be maintained to ensure the needs of the experiment are taken into account appropriately in the construction project and that maintenance work is efficiently dove-tailed with the construction schedule. To ensure that such “interface issues” are identified and dealt with, cross membership of MIPO and MEMO is essential. The following personnel are members of both the MIPO and the MEMO:

- The Spokesperson; and
- The Experimental Integration Scientist.

References

[1] P. Dornan *et al.*, “MICE Constitution.” <http://mice.iit.edu/gov/constitution.doc> , 2003.

A Personnel

Table 1 lists the personnel discharging the roles described in the main body of the note. The personnel designations are effective as of the 28th November 2013.

Table 1: Personnel filling the principal roles in the MIPO and MEMO. Designations effective as of the 28th November 2013.

| MICE International Project Office (MIPO) | |
|---|--------------|
| Project Manager | R. Preece |
| Project Engineer | A. Nichols |
| Accelerator Integration Scientist | J. Pasternak |
| Experimental Integration Scientist | P. Hanlet |
| MICE-UK capital Project Associate | A. Grant |
| MICE-US construction Project Manager | A. Bross |
| MICE-UK Principal Investigator | P. Soler |
| US MAP Director | M. Palmer |
| MICE Experiment Management Office (MEMO) | |
| MICE Spokesperson | K. Long |
| Experimental Integration Scientist | P. Hanlet |
| Operations Coordinator | S. Boyd |
| Physics Coordinator | V. Blackmore |
| Software and Computing Coordinator | C. Rogers |