Imperial College London

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Spokesman's remarks and Executive Board report:

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Executive Board report

Executive Board report:

- Four meetings since last CB:
  - [26Feb14]; 21Mar14; 17Apr14, 23May14
- EB activities:
  - Policy for shift organisation:
    - Alain Blondel leading exercise to draft policy
  - Policy for collaboration publications
    - Paul Soler leading exercise to draft policy
  - Preparation of proposal for review of collaboration charter
    - Terms of reference agreed at last CB;
    - Still seeking candidates for panel from Europe, Japan, UK:
      - Seek to progress in tomorrow's EB meeting
  - Review/consideration of funding opportunities:
    - Agenda item at today's CB
- Personnel:
  - R. Bayes (Ggo) – Configuration Manager;
  - P. Smith (Shf) – Online Coordinator
- Decisions:
  - Use of FC#1 in Step IV
  - Completion of MICE programme at Step V (sustainable ionization cooling)
- Discussion:
  - Prioritisation of physics analyses for Step IV

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Construction project

Step IV:

- Huge progress:
  - Recruitment of additional manpower into Hall team bearing dividends;
- Issues:
  - Hall Managers prolonged convalescence now becoming a worry:
    - Likely to be resolved in ~1 wk:
      - Fall-back(s) under discussion
  - Procurement of PRY:
    - Has delayed projected completion of Step IV construction;
    - Further potential for slippage;
    - PM and US team very well aware and are pushing on this;
    - Will need great care in scheduling to bring forward as much work as possible to avoid substantial delay

Step V:

- Construction on expedited schedule:
  - Outlined in plenary (Long, Preece, Bross);
  - If possible a “win all round”;
- Risk:
  - Transferred across the Atlantic in a number of areas:
    - Integration of RFCC; test of cavities; …
  - Can the resources be provided:
    - US … UK …
- Securing Step V:
  - Need to make sure we’re well organised for the August MAP/MICE review:
    - EB tomorrow …

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Operations and analysis

Operations:

- Getting organised, but not yet robust;
  - Activation run on 29Jun14 last operation with beam in 2014;
- Pre-commissioning:
  - Work to make ready detectors, DAQ, C&M, … in advance of commissioning with beam in 2015
  - Plan being prepared:
    - Paul Soler's talk tomorrow will present input data
- Commissioning:
  - Magnet/beam-line:
    - Jaroslaw Pasternak's talk tomorrow
  - Instrumentation, DAQ and controls:
    - Paul Soler's talk tomorrow
- Will include planning with construction schedule:
  - Roy Preece/Alan Grant already discussing with relevant persons

Constraints for operations planning

- Step IV integration complete: March 2014
- ISIS operation: not scheduled, indicative for planning:

	Monday	*25-Aug-14*	Sunday	*08-Feb-15*	*168*			TS-1		TS-2		
	Monday	*09-Feb-15*	Sunday	*15-Mar-15*	*35*							
	Monday	*16-Mar-15*	Monday	*16-Mar-15*	*1*							
2014/03	Tuesday	**17-Mar-15**	Friday	**24-Apr-15**	38	37.0	**124.0**		37		37	
	Friday	*24-Apr-15*	Sunday	*26-Apr-15*	*3*							
	Monday	*27-Apr-15*	Sunday	*17-May-15*	*21*					TS-2		
	Monday	*18-May-15*	Sunday	*31-May-15*	*14*							
	Monday	*01-Jun-15*	Monday	*01-Jun-15*	*1*							
2015/01	Tuesday	**02-Jun-15**	Friday	**24-Jul-15**	52	50.0	50.0		87		50	
	Friday	*24-Jul-15*	Sunday	*26-Jul-15*	*3*							
	Monday	*27-Jul-15*	Sunday	*23-Aug-15*	*28*			TS-1		TS-2		
	Monday	*24-Aug-15*	Sunday	*06-Sep-15*	*14*							
	Monday	*07-Sep-15*	Monday	*07-Sep-15*	*1*							
2015/02	Tuesday	**08-Sep-15**	Friday	**16-Oct-15**	38	37.0	87.0		37		37	
	Friday	*16-Oct-15*	Sunday	*18-Oct-15*	*3*							
	Monday	*19-Oct-15*	Sunday	*25-Oct-15*	*7*							
	Monday	*26-Oct-15*	Sunday	*01-Nov-15*	*7*							
	Monday	*02-Nov-15*	Monday	*02-Nov-15*	*1*							
2015/03	Tuesday	**03-Nov-15**	Friday	**18-Dec-15**	45	44.0	**131.0**		81		81	

Cycle

Shutdown and/or moderator change

Mod. change and cumul. days

Classification of analyses

	Step IV	Step V
Study of properties that determine cooling performance		
Cooling properties of LH_2 and LiH	**Yes**	**No**
Observation of $\epsilon_\perp^n$ reduction	**Yes**	Yes
Demonstration of sustainable ionization cooling		
Observation of $\epsilon_\perp$ reduction with re-acceleration		**Yes**
Observation of $\epsilon_\perp$ reduction with $\epsilon_\parallel$ "management"		**Yes**
Observation of $\epsilon_\perp$ reduction with $\epsilon_\parallel \oplus \mathcal{L}$ "management"		**Yes**†

† Requires systematic study of "flip" optics.

Step IV operations:

- First discussion of data-taking plan in Steve Boyd's talk tomorrow

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Open positions

Staffing issues:

- Unfilled positions:
  - Production Coordinator
    - Failed to close negotiations with candidate successfully;
  - Computing Infrastructure Manager
    - Opened discussions with PPD IT support;
      - Likely will require money to cross budget codes!
- Help from CB to identify suitable candidates!
  - Do we need to introduce concept of “service work”

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Reviews and recommendations

Evolution:

- RLSR/MPB:
  - Principal recommendation is:
    - Complete MICE with scientific and technological success at Step V
- Actions and recommendations …

Actions from the Resource Loaded Schedule Review, MPB and FAC

Committee	Id	Action	Owned by	Lead	Required participants
RLSR	1	**The project is required to undertake a full cost-risk-benefit analysis of the proposed expedited STEP IV schedule for the next meeting.**	MIPO	Preece	Grant/Bross
	2	It is vitally important that the level 1 milestone, the completion of the installation for STEP IV that is currently scheduled for March 4th 2015 is met and the project team must ensure that everything is done to ensure this is achieved.	MIPO	Preece	Grant/Bross
	3	The UK project management should redo the schedule projection taking into account the 35% contingency for concurrent tasks (the green line) by the end of May.	MIPO	Grant	
	4	The project should produce a coherent plan for the commissioning and the running of MICE for STEP IV for the next meeting.	MIPO/ MEMO	Pasternak/Boyd	
	5	The committee reviewed the revised project planning methodology and agrees it is appropriate and gives a more representative value for future use in comparing the baseline to the optimistic and risk dates.	MIPO	Preece	Grant/Bross
	6	The dashboard and slip charts should be included in future reports.	MIPO	Preece	
	7	The project should provide an optimum revised project plan for the completion and operation of STEP IV within the financial constraints for the next meeting.	MIPO	Preece	Grant/Bross

Actions from the Resource Loaded Schedule Review, MPB and FAC

Committee	Id	Action	Owned by	Lead	Required participants
MPB	1	**The director of the MAP program should ask the DOE office of HEP to intervene to expedite the remaining procurement for the Partial Return Yoke fabrication. The timely delivery and installation of the PRY is critical to meeting the Step IV schedule.**		Palmer	
	2	**Complete a risk/benefit analysis of the switch from the baseline program to an expedited delivery of Step V, for all components, by the next meeting.**	MIPO	Preece	Grant/Bross
	3	**Begin a series of independent Machine Protection and Personnel Protection reviews of the integrated commissioning activities and early operation stages, and report back on progress at the next MPB meeting.**	MIPO/ MEMO	Nichols/Boyd	MacWaters/ [Arnold/Thomason (ISIS)]
	4	Scientific output in refereed scientific and technical journals should be enhanced and made more visible, publishing in the worlds of both experimental physics and accelerator physics.	MIPO/ MEMO	Long/Preece	
		Superconducting magnets			
	5	Prepare to choose between FC1 and FC2 immediately after the FC2 test. In parallel with FC2 testing, complete the analysis that shows that FC1 is (or is not) adequate for Step IV and V. (There is probably not enough time after the test to rework FC2 if needed and still hold the Step IV schedule.)	MIPO	Preece	Watson/Bradshaw/Cobb
	6	Present at least one paper on the Spectrometer magnet experience at upcoming conferences. Though potentially painful and difficult, these lessons apply to many others in the field, and even to other vendors working for MICE.	MIPO	Bross	
	7	Pay special attention to risks that are shifting from other collaborators to RAL. Look for ways to encourage and/or enforce continued responsibility for those components by the home institution after delivery has occurred.	MIPO	Preece	Grant/Bross
		RF systems and controls			
	8	Generate an integrated RF system testing plan, including both the alternative of using an early delivered RFCC module and also the present option of using a single cavity, so that valuable practical operation experience can be gained in a timely fashion and in parallel to operating Step IV.	MIPO	Preece	Ronald
	9	Prepare and present at the next meeting a plan for how the controls and sub-system teams will train and share information with the operations and maintenance crews, within both the collaboration and ISIS.	MEMO	Rogers/ Boyd	
	10	Implement a *prioritised* plan towards making the essential components of the control system operational for Step IV.	MEMO	Rogers	Hanlet

	Data taking, simulation and reconstruction				
	11	Present a combined physics/operations plan for Step IV data taking and analysis, clearly describing the critical early measurements to be made, and the plan towards first Step IV publications.	MIPO/ MEMO	Pasternak/Boyd	Blackmore
	12	Develop a plan for on-site support of online systems during Step IV running, ensuring that the experiment can run smoothly during this critical period.	MEMO	Rogers/Boyd	
	13	Fully integrate the online and offline development schedules into the overall experiment planning, showing where shortfalls in resources occur, and their effects on the overall schedule up to publications.	MIPO/ MEMO	Rogers	Preece/Grant
	14	Present the methodology for track reconstruction and explain how it is being used to achieve the best possible resolution, at the next meeting.	MEMO	Rogers	Dobbs
	Commissioning and operations				
	15	Develop and present at the next meeting a more detailed plan of Step IV commissioning and early operational activities in 2015, indicating the anticipated progress on each major component and sub-system, possible problem areas/delays and how these may affect timescales.	MEMO	Blackmore/Boyd	
	16	Assure adequate participation of the operational team in Step IV installation and commissioning activities, in order for them to gain "hands-on" knowledge of the hardware, and of typical and possible issues of relevance to operation.	MEMO	Boyd	
	17	Develop a policy and a corresponding plan for the active participation of non-UK and non-US collaborators in the installation and commissioning activities, and on operational shifts.	MEMO	Long	
	18	Fully define the expected contributions of the collaborating groups towards the commissioning, operation and maintenance efforts.	MIPO/ MEMO	Preece/Long	
	19	Continue communications with ISIS on operational staffing and rebuilding the MICE liquid hydrogen team.	MIPO/ MEMO	Nichols/Boyd	Watson
	20	Identify means of presenting the ISIS team with full system drawings and specifications of the equipment that they will be involved in running.	MEMO	Boyd	Govans

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Future collaboration meetings

Future collaboration meetings:

- 2015:
  - RAL: CM41 09th to 13th February 2015
  - RAL: CM42 22nd to 26th June 2015
  - FNAL: CM43 05th to 09th October 2015
- 2016:
  - CM44 15th to 19th February 2016
  - CM45 20th to 24th June 2016
  - CM46 03rd to 07th October 2016