



Update Management Plan and Re-planning Program

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RICH Mid-Term Project Review

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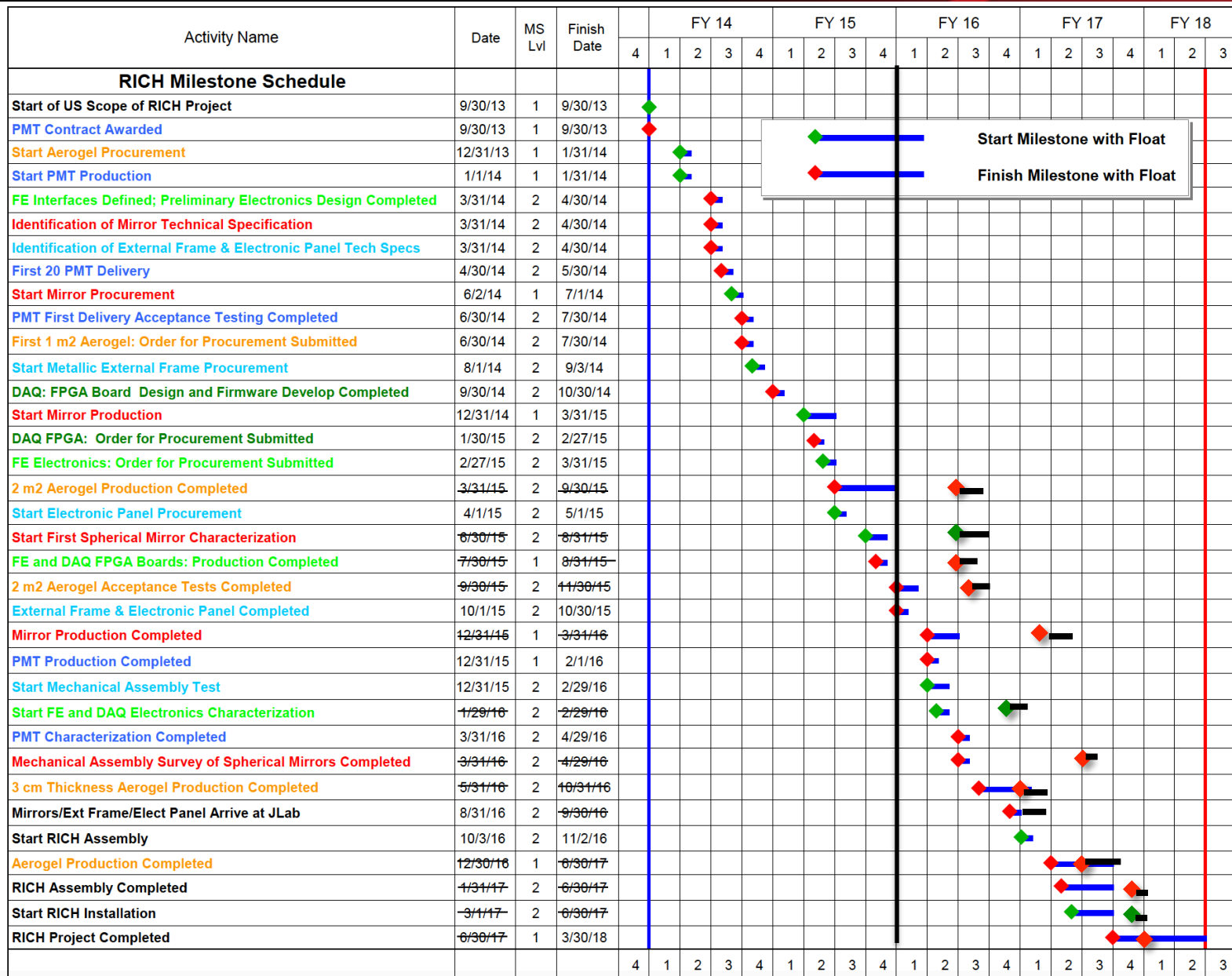
Introduction

The execution of the RICH Program reveals the need of some modifications and implementations that reflect the effect of changes occurred as work on the project has progressed.

They can be summarized in the following:

- 1) An update of the schedule to reflect the actual work performed, the current work status and more realistic milestones based on new available information.
- 2) The inclusion of the calibration scope: software efforts required to guide the detector construction and understanding, ultimately leading to the pre-operations.
- 3) An extension of the program to Q2FY18 to cover the installation of the RICH detector in CLAS12.
- 4) The update of the responsibilities covered by the individuals in the Organization Chart.

RICH Milestones – Updated Schedule

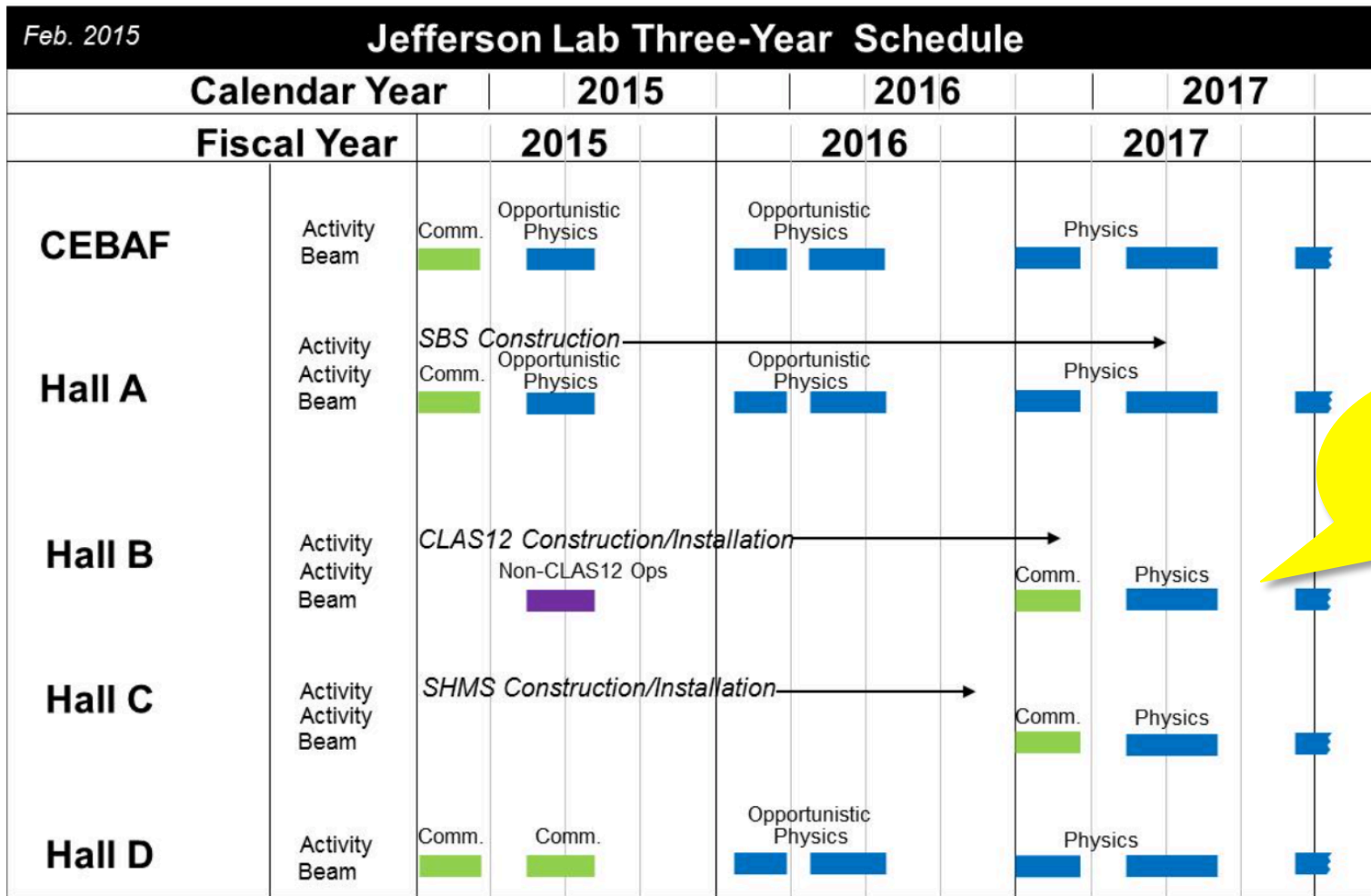


◆ ——— Start Milestone with Float

◆ ——— Finish Milestone with Float



JLab 3-Year Schedule



We are shooting for this window

WBS 7.3: Aerogel - Updated Schedule

UPDATED Milestones Schedule

Milestones	Old Date	New Date	Lev	Float-months
Start Aerogel Procurement	12/31/13	12/31/13	1	1
First 1 m ² Aerogel: Order for Procurement Submitted	6/30/14	6/30/14	2	1
2 m ² Aerogel Production Completed	3/31/15	3/31/16	2	2
2 m ² Aerogel Acceptance Test Completed	9/30/15	4/30/16	2	2
3 cm Thickness Aerogel Production Completed	5/31/16	9/30/16	2	2
Aerogel Production Completed	12/30/16	3/31/17	1	4

The float has been evaluated as difference between a 25% production efficiency and a 17% one, with the exception of the last milestone for which the float has been stretched to reach the start of the RICH installation

WBS 7.6: Mirrors – Updated Schedule

UPDATED Milestones Schedule

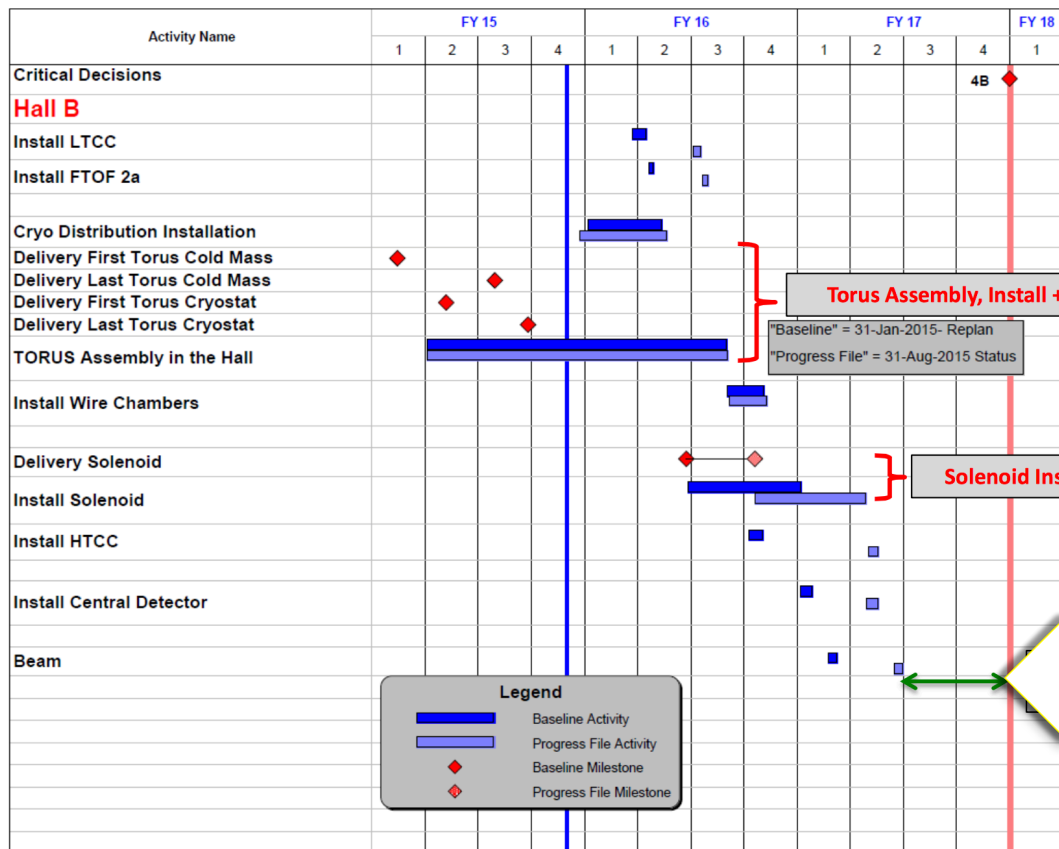
Milestone	Old Date	New Date	Lev	Float months
Identification of Mirror Technical Design Specification	3/31/14	3/31/14	2	1
Start Mirror Procurement	6/2/14	6/2/14	1	1
Start Mirror Production	12/31/14	12/31/14	1	3
Start First Spherical Mirror Characterization	6/30/15	3/31/16	2	3
Mirror Production Completed	12/31/15	11/30/16	1	3
Mechanical Assembly Survey of Spherical Mirrors Completed	3/31/16	3/31/17	2	1

- The delivery dates are in the contract signed with CMA.
- The first mirror will arrive at JLab by the end of March 2016 with a delivery rate of two mirrors/two months for the remaining ones.

Calibrations

- The simulations and reconstruction software provides ongoing service and support for the project. This includes not only helping to understand the performance of the detector during the construction and the final assembly but also to provide the software for the detector calibration and commissioning and ultimately for physics analysis.
- We need to keep this effort to an adequate level to continue progress on the above mentioned activities throughout the duration of the whole project. This is even more needed due to the complicated geometry of the CLAS12 RICH.
- We want to take the opportunity of this mid-term project review to include in the Program Management Plan the WBS 7.10 “ Calibration” to correct this oversight.
- The idea is to use the left over of the contingency allocated to the MA-PMTs (thus NOT changing the JLab total cost of the project) to support this effort.

Installation Plan



- The **RICH Program Management Plan (PMP)** in its actual version runs over the period FY13-FY16.
- The US scope of the Program includes manpower to guarantee installation in CLAS12 by the Hall B technical crew.
- The RICH installation can start only after CLAS12 Commissioning is complete, ie. after Q2FY17

 The installation period is beyond the current PMP duration (FY13-FY16)

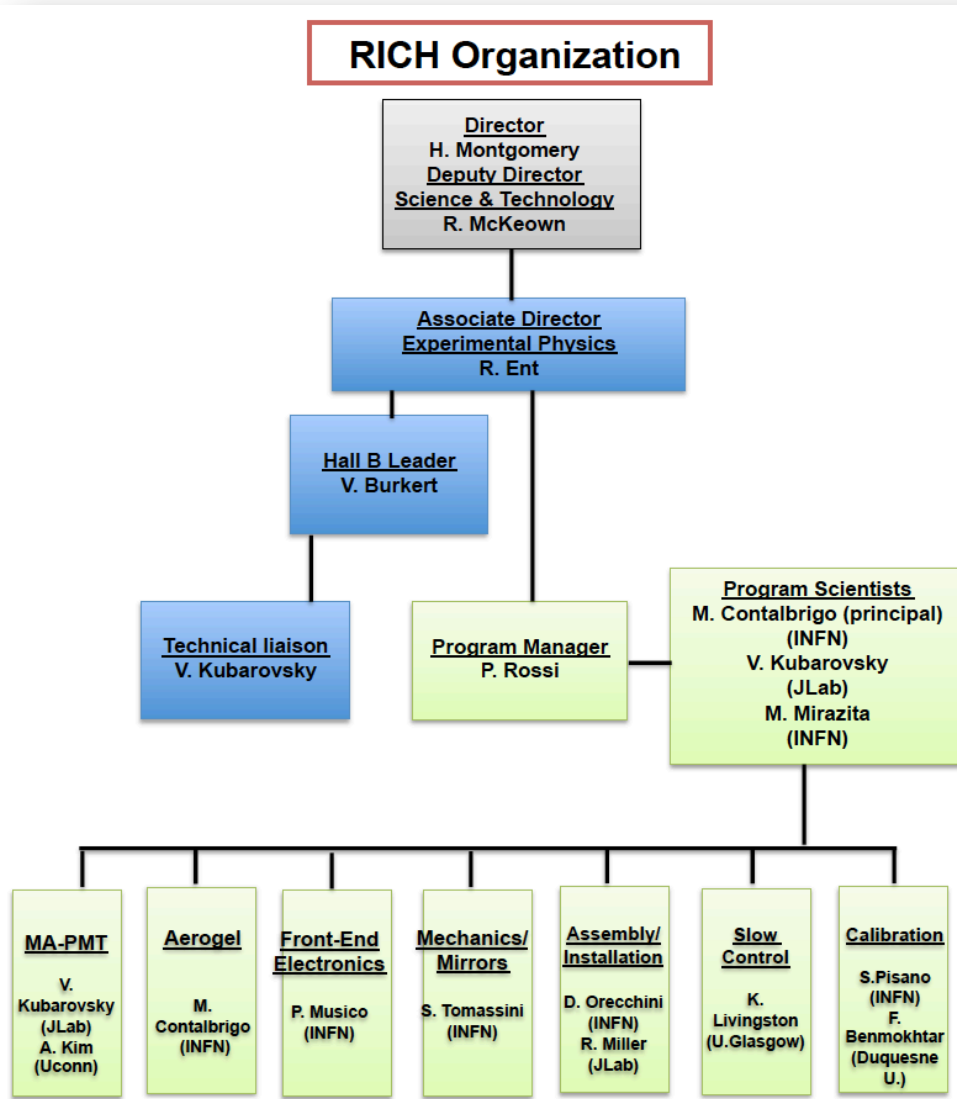
Budget Expenditure FY16-FY18

Note:

1. Installation can not occur before 3QFY17
2. Project completion date was always FY18
3. MA-PMTs left over contingency: 156,4K\$

WBS	ITEM	DIRECT (K\$) (BASE+ CONTINGENCY)	BURDENED (K\$)	MONEY SPENT (K\$) (by 9/30/ 2015)	FY16 BURDENED (K\$)	FY17 BURDENED (K\$)	FY18 BURDENED (K\$)
WBS 7.1	Project Management	34,1	68,3	42,1	26,2	13	13
WBS 7.2	MA-PMT	1140	1217,4	1061	-	-	-
WBS 7.3	Aerogel	253	304,5	0	304,5		
WBS 7.5	Mechanics	13,75	20,75	0		20,75	
WBS 7.7	Gas System	26	39	0		39	
WBS 7.8	Slow Control	13	20	0		20	
WBS7.10	Calibration		110		55	55	

Updated RICH Organization Chart



MA-PMTs:

JLab is taking the responsibility during the production phase.

Aerogel:

L. Pappalardo left the group.

Slow Control:

K. Livingston is taking the full responsibility.

Calibration

LNF/INFN and Duquesne U. share this responsibility.

Conclusions

- Modifications to the RICH Program Management Plan are requested to reflect the changes that occurred during its execution.
- The proposed changes would:
 - introduce a minor broadening of the scope (inclusion of the WBS7.10: Calibration)
 - extend the program till Q2FY18 both to cover the RICH installation and related activities, and the PMP project completion date.
- The proposed changes will:
 - keep the budget
 - fulfill the project driving milestone of installing the RICH detector in summer 2017.