

LQCD – CHANGE REQUEST

| Log number (provided by project office): [CR06_02] | | |
|--|---|---|
| 1) DATE: [origination date] June 12, 2006 | 2) Laboratory/WBS: [Highest level of WBS affected] Baseline 0.0/WBS 0 and WBS 1.1 | 3) ORIGINATOR: Don Holmgren, FNAL |
| 4) WBS DESCRIPTION OF PRIMARY AFFECTED TASKS: This change request addresses the schedule slip of one month and one day for the completion of the FY06 deliverables for the Lattice QCD project. The most affected major milestone is: 1.1.1.1.9 FY06 FNAL Release to production 1.8 Tflop/s Original completion date was 9/30/06. The revised date is 11/1/06. | | |
| 5) TECHNICAL DESCRIPTION AND PRIMARY MOTIVATION OF CHANGE: At the May 25 Project Progress Review, the review committee included two recommendations in their closeout slides relevant to WBS 1.1.1.1.9. First, they recommended adding contingency to the FY06 schedule so that the project could manage a delay in the acceptance of the “Kaon” cluster hardware. Second, they recommended carrying out a more detailed analysis of the potential performance improvement of AMD “Socket F” hardware because “... the projected six-week delay is a small impact relative to the overall potential project benefit.” The first recommendation above arose from a discussion of the acceptance testing period for the Kaon cluster. According to the project schedule, Kaon hardware delivery would complete in mid-August, at which time a 30-day acceptance testing period would start. Fermilab would not pay the vendor (“cost” the hardware) until successful completion of the acceptance testing. Even though Fermilab would have committed funds when the PO for the cluster issued in June, if acceptance testing were delayed final payment for the hardware might not occur until after FY07 started. The reviewers felt that the project should add additional schedule contingency to manage such a possible delay, which was particularly sensitive since it could span fiscal years. The second recommendation was based upon an estimation at the review that AMD Opteron Socket F systems could provide a 10% or higher improvement in price/performance relative to the Opteron 270 systems selected by Fermilab. This estimate was based upon data for price and performance submitted by one of the bidders on the Fermilab solicitation. In response, Fermilab issued an amendment to the original solicitation asking vendors to supply, at their option, bids based on Socket F; vendors could also update their original bids for AMD Opteron and Intel-based hardware. Subsequent to the release of the amendment to the solicitation, the project gained remote access to a Socket F system at the Tyan Corporation in California. Lattice QCD codes were benchmarked on this system. New vendor bids arrived on June 8. Based on pricing supplied by the vendors, and on benchmarking results, for MILC code there was a decrease in price/performance for Socket F relative to Opteron 270 for the lowest bidder of 3%, and an increase in DWF code price/performance of 9% (or, an average 6% price/performance improvement on the average of DWF and MILC). During this process the project also learned that Socket F processors were delayed from June/July earliest shipment to August/September. The project was not able to benchmark the processors that were bid (only 2.2 GHz and 2.6 GHz processors were available), nor was the project able to evaluate the motherboards proposed. Because of the risk of further delay in the availability of Socket F processors and motherboards, and the risk of unforeseen technological difficulties in the new motherboards, the project elected to not consider Socket F systems for this procurement. As a result of the Socket F solicitation amendment, shipment of the “Kaon” cluster hardware will be delayed from August 14 to August 31. | | |
| 6) ASSESSMENT OF COST IMPACT (identify any change in resources needed as reflected in the WBS) Estimated M&S Cost Increase (\$): 0.00 Estimated Labor Cost Increase (\$): 0.00 Estimated scientific impact (high, medium, and low): Low. A one month delay in release to production results in a loss of 0.15 TFlop-yr out of the planned 1.8 TFlop-yr from “Kaon” and out of the planned 9 TFlop-yr to be delivered by the project in FY07. | | |

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7) ASSESSMENT OF SCHEDULE IMPACT AND AFFECTED MILESTONES (identify slip or stretch of work or change in plan):

This change request directly impacts the schedule slip. See attached revised WBS for details. It may also impact scientific deliverables.

8) SECONDARY IMPACT AND OTHER COMMENTS:

There is no change to the total labor cost. However, there may be an indirect effect to the labor cost reporting to OMB, since the labor cost will cross over the fiscal year boundary reported to OMB.

Upon approval for this CR, the WBS will be revised and an interim baseline will be created. Subsequent project tracking will be done according to the revised WBS. The new WBS will be treated as an interim change only.

9) APPROVALS REQUIRED (approving authorities are PM, CCB (CCB chair signs for the CCB) and CPM)

LQCD Project Manager Don Holmgren _____ Signature / Date July 3, 2006

LQCD CCB Chair Bob Sugar (see verification e-mails below) _____ Signature / Date: July 20, 2006

LQCD Contract Project Manager (not needed) _____ Signature / Date

10) APPROVAL STATUS [Filled by the Project Office]

CR approved (Yes/No)?

If yes, date of approval:

If no, provide a brief list of reasons for rejection :

Signature / Date

Once the approving authority makes the decision, this person approves it by signing in the section 9 of this form or rejects it by listing reasons for rejection and initializing it. Please send an e-mail verification to bakulb@fnal.gov and FAX the signed copy to 630 840-6345.

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Approval e-mails:

From: "Robert Sugar" <sugar@physics.ucsb.edu>
To: "Don Holmgren" <djholm@fnal.gov>
Cc: "Bakul Banerjee" <bakulb@fnal.gov>
Subject: Fwd: Revised LQCD change control request documents
Date: Thursday, July 20, 2006 9:57 AM

Hi Don,

With Vicky's approval, all members of the Change Control Board have now approved the two changes you recommended. They can be considered adopted. Thanks for your work on it.

Best,
Bob

Begin forwarded message:

> From: Victoria White <white@fnal.gov>
> Date: July 20, 2006 6:13:51 AM PDT
> To: "'Don Holmgren'" <djholm@fnal.gov>, "'Bob Sugar'"
> <sugar@savar.physics.ucsb.edu>, "'Tom Schlagel'"
> <schlagel@bnl.gov>, "'Steven Gottlieb'" <sg@indiana.edu>, "'Roy
> Whitney'" <whitney@jlab.org>
> Cc: "'Bakul Banerjee'" <bakulb@fnal.gov>
> Subject: RE: Revised LQCD change control request documents
>
> Dear Don and Bob,
>
> I approve of each of these changes.
>
> Vicky
>
>
> -----Original Message-----
> From: Don Holmgren [mailto:djholm@fnal.gov]
> Sent: Monday, July 03, 2006 4:38 PM
> To: Bob Sugar; Vicky White; Tom Schlagel; Steven Gottlieb; Roy Whitney
> Cc: Bakul Banerjee; Don Holmgren
> Subject: Revised LQCD change control request documents
>
>
> Dear LQCD CCB Members -
>
> When the LQCD CCB met by phone on June 14, we considered two change
> requests:
> o a schedule change for the Fermilab FY06 cluster, "Kaon"
> o shifts in fund distribution in the FY07-FY09 budgets
>
> Both requests were tabled pending further discussions.
>
> The "Kaon" cluster purchase order was issued to the vendor on June
> 19th.

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- > Last week, I learned from the "Kaon" cluster vendor that they will
- > be able
- > to complete delivery in August. The first rack of twenty nodes
- > will be
- > delivered to FNAL in mid-July, and an additional four racks will be
- > available by late July. The remaining racks will be delivered by
- > the end of
- > August.
- >
- > Given this delivery schedule, the revised date for "release to
- > production"
- > in the original change request of November 1, 2006, is still valid.
- >
- > As agreed during the June 14 CCB meeting, I have modified the
- > budget change
- > request so that only FY07 is affected. Also, the requested shift
- > in funds
- > from equipment to operating no longer includes labor for
- > prototyping (to be
- > covered by the base budgets) or the costs for tapes for storage.
- > JLab and
- > FNAL have agreed to cover projected tape costs in FY07 from their
- > existing
- > tape inventories and base budgets. We will re-examine tape costs next
- > spring.
- >
- > The requested shift in funds in FY07 is \$102K. The increase in labor
- > profile funded by this shift is 0.75 FTE (from 4.0 FTE to
- > 4.75 FTE). The decrease in computing capacity, resulting from the
- > decrease
- > of \$102K in equipment funds, is 0.2 TFlops (2.9 TFlops, instead of 3.1
- > TFlops). Because the FY06 clusters will exceed the goal for that
- > year (goal
- > was 2.0 TFlops, projected capacity is 0.3
- > (JLab) + 2.0 (FNAL) = 2.3 TFlops), this change will not affect the
- > "delivered TFlops-yrs" milestones.
- >
- > I have attached .doc and .pdf versions of both change requests.
- > Please send your approval or disapproval for each change request to
- > the
- > chairman, Bob Sugar.
- >
- > Don Holmgren
- >