CALCOM Readiness Review for Pass-2 Recalibration of CLAS12 Data – RG-B Spr19

Review Date: March 25, 2022 (held remotely)
Final Report: March 27, 2022

Review Committee:
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Observers:
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Calibration of any CLAS12 dataset is a manpower and computing intensive process that requires detailed planning and preparatory work to guarantee the quality of the calibrations for the individual CLAS12 detector subsystems and to ensure that the work can be completed efficiently within an allotted time period, exploiting as much as possible what was learned during the pass-1 calibration about features of the dataset. For this reason, a *"Pass-2 Calibration Readiness Review"* was requested to authorize the start of the calibration work necessary to prepare for the pass-2 data processing for each Run Group dataset. The charge for this review is included at the end of this report.

The review committee was requested to answer the charge questions based on the material presented by the Run Group and report its findings, comments, and recommendations to the CLAS Coordinating Committee (CCC). Based on this report, the CCC will make a final decision if the Run Group is authorized to proceed with the dataset calibration to prepare for pass-2 data processing according to the defined Run Group dataset calibration sequence.

The committee would like to thank the Run Group for organizing the materials for the review in advance and for the preparation and presentation of a clear and concise talk. We would also like to acknowledge our appreciation of the open and frank discussions that were had.

In this report, we answer the questions posed in the charge point by point, and then provide general feedback in the form of findings, comments, and recommendations as defined here:

FINDINGS: Describing the major relevant points presented to the committee or observations made during the presentations.

COMMENTS: Suggestions or other remarks that do not rise to the level for inclusion in the formal recommendations.

RECOMMENDATIONS: Describing more definite statements that must be addressed in the future.

Response to the elements of the review charge:

1: Is the list of runs to be processed for pass-2 defined with all known issues or special conditions that may affect the calibration documented and available for calibrators?

FINDINGS:

- The list of runs for calibration monitoring was provided based on the pass-1 calibration effort.

COMMENTS:

- Review the run list used to produce the calibration timelines based on lessons learned from the pass-1 data QA timelines to update the known problem list.
- Review the run list used to produce the calibration timelines to remove low statistics runs that may produce outlying points due to poor fits.
- Review calibration outliers for special run conditions (empty target, low/high luminosity runs) that may require special attention and include this additional effort in the work durations.

RECOMMENDATIONS:

- None

2: Is the list of calibrated runs for each detector subsystem from pass-1 along with their applicable run ranges documented as a starting point for the recalibration effort?

FINDINGS:

- A complete list of calibration runs for the subsystems based on pass-1 calibration was provided for each subsystem with the applicable run ranges listed.

COMMENTS:

- For pass-2 calibration work coordination efforts should ensure the minimum of runs are cooked/calibrated across the different subsystems.

RECOMMENDATIONS:

- None

3: Are the calibration QA specifications for each subsystem defined and reasonable?

FINDINGS:

- A table was provided based on the existing default QA specifications for the key calibration quantities. This list was updated based on feedback from the subsystem leaders. The QA specifications are deemed complete and reasonable for CLAS12 at the current time.

COMMENTS:

- None

RECOMMENDATIONS:

- None

4: Are the plans to monitor the calibration quality for each QA timeline for each detector subsystem defined and reasonable?

FINDINGS:

- The plan is that the Analysis Coordinator has final sign-off responsibility to approve the QA timelines as acceptable. The Analysis Coordinator will work in close collaboration with CALCOM and with the subsystem leaders on the timeline evaluation.

COMMENTS:

- None

RECOMMENDATIONS:

- None

5: Has a defensible and realistic recalibration timeline for the dataset been presented with trackable milestones up to the pass-2 ready for cooking review? Has an acceptable plan for tracking the progress of the calibration work been provided?

FINDINGS:

- A schedule was provided to recalibrate the RG-B Spr19 dataset within a two-month time window with identifiable milestones. The planned schedule assumes the work can be completed in 51 days with 9 days for contingency. The schedule was based on the standard recalibration sequence defined by CALCOM with task durations based on input from the subsystem leaders and the software team. The schedule includes time for a second iteration of calibrations after pass-0 timeline investigations.

COMMENTS:

- The work schedule is deemed to be somewhat optimistic in that any delays that arise due to calibration anomalies, personnel issues, lack of computing resources, etc., can only cause the schedule to be delayed. Communication between the Analysis Coordinator, CALCOM, software team, subsystem group leaders, and calibrators is essential to resolve any issues that arise as quickly as possible.
- During the recalibration window for the Run Group dataset, regular updates at the weekly CALCOM meeting are mandatory to discuss progress, issues, and to alert the team about the schedule of upcoming work tasks.

RECOMMENDATIONS:

- None

6: Is the manpower adequate for the proposed effort and are all Run Group leadership roles fully defined for each step in the process?

FINDINGS:

- The RG-B team, CALCOM team, subsystem group leaders, calibrators, and software folks were all identified for the recalibration task.

COMMENTS:

- To reduce issues from limited manpower, all positions in the recalibration process should have at least two people identified who are trained to carry out the work and who can contribute as needed.

RECOMMENDATIONS:

- None

Review Charge:

Charge #1: Is the list of runs to be processed for pass-2 defined with all known issues or special conditions that may affect the calibration documented and available for calibrators?

Charge #2: Is the list of calibrated runs for each detector subsystem from pass-1 along with their applicable run ranges documented as a starting point for the recalibration effort?

Charge #3: Are the calibration QA specifications for each subsystem defined and reasonable?

Charge #4: Are the plans to monitor the calibration quality for each QA timeline for each detector subsystem defined and reasonable?

Charge #5: Has a defensible and realistic recalibration timeline for the dataset been presented with trackable milestones up to the pass-2 ready for cooking review? Has an acceptable plan for tracking the progress of the calibration work been provided?

Charge #6: Is the manpower adequate for the proposed effort and are all Run Group leadership roles fully defined for each step in the process?