

Analysis Review Process Proposal and Discussion

Whitney Armstrong

Introduction

- What is being proposed for Collaboration reviews?
- What problems does this solve?

- During the last collaboration meeting there was a discussion about “Analysis and pathway to publication”. This Discussion continued for the business session.

Themes: how to share code, Analysis Committee turnaround time, common analysis code development, validation of service work and task list items, documentation of work

What is being proposed?

1. I propose to use JLab's gitlab server to facilitate collaboration reviews (code.jlab.org)
2. Create a new type of service work called a "Common Analysis Note" (CAN)
3. Use code.jlab.org to facilitate the "CLAS12 Task List" for service work
 - Factorize "Analysis Note" → physics (not service work)
 - Singular physics data analysis
 - "Common Analysis Note" → reusable analysis component (service work)
 - Has different set of requirements and **higher bar for review**
 - Documentation, code, examples, reproducible plots, extensible

On way to Analysis Note, doing "Common Analysis Notes" adds service work but can also use existing approved "Common Analysis Notes" to expedite things.

Why is this a good idea?

What problem does it solve?

Solves many problems at once.

1. Unifies the collaboration's work contributions and the documentation of the work
2. More shareable/reusable analysis and code
3. Documents service work/task list
4. Encourages modern workflows and enables new ideas

What is gitlab?

- JLab gitlab server: code.jlab.org — everyone has an account (once they login)
- Gitlab is a more useful version of github
- Stores repos, facilitates software development, etc...
- CI/CD platform (the best IMO)
- Container registry
- Per project wikis, webpages, and more.
- More features than I have time to cover.

Drag and drop file upload (uploaded file and markdown syntax inserted)

Key Benefits

Review Turnaround

- Reviewer comments **immediately available** to author.
- Author's changes **explicitly documented** (as merge-request) or in comments.
- Everything is documented and cross linked when referenced (gitlab feature)
- Use milestones for review, tags for rounds (likely not needed for mature notes)
- Reviewers create issues for each question/change, author follows up with MR which is then reviewed (by committee member(s)), then issue closed when approved.
- Issues can be **addressed immediately**, facilitating single round reviews for complete projects.

Second milestone for second round reviews if returning with significant changes. (Need to be clear when analysis is incomplete and review should pause for author to work).

Key Benefits

Documentation

- Everything is documented and cross linked when referenced (gitlab feature)
- Analysis note (latex document) automatic compiled in CI saved as artifact, and single URL can be used to get latest version. Previous revisions also available.
- Review process is internal but visible to collaboration, private/confidential comments can be used when needed (but should be discouraged).
- Document CLAS Task Lists with automatic links documenting work
- Can use **gitlab pages** to serve static web pages or something more fancy (example from Doug's talk)
- Links reviewed “Analysis” to the related code/repos (required for CAN)

Key Benefits

Common Analysis

- Reviewed document (latex) can now have a readme.md (as part of the review) and other files which document reusability (if that is the goal), facilitating the development and documentation of "common analysis" tools and code.

What is a "Common Analysis Note"?

- Not an analysis note, but a well documented piece of analysis that can be extended to new data sets.
- Has a higher bar for review than an "Analysis Review"
- Requires documentation (latex part for including in Analysis notes)
- Requires reproducibility (standard plots)
- Requires reusability (no unnecessary dependencies, backdoored code, etc)
- And others TBD.

Example Review - via Milestones

The screenshot shows a GitLab Milestone page for a project named 'my_analysis_note'. The milestone is titled 'First round review' and is currently 'Open', with an expiration date of August 8, 2026. The page is organized into three columns: 'Unstarted' (3 items), 'Ongoing' (2 items), and 'Completed' (1 item). The 'Unstarted' column contains three issues: #5, #3, and #2. The 'Ongoing' column contains two issues: #6 and #4. The 'Completed' column contains one issue: #1. A sidebar on the right provides summary statistics: 16% complete, no start date, due date of Aug 8, 2026 (1 month remaining), 5 work items open and 1 closed, no time tracking, 1 merge request open and 0 closed/merged, and no releases. A search bar and navigation icons are visible at the top of the interface.

Project: my_analysis_note

Open Milestone expires on Aug 8, 2026

First round review

This is the first round mile stone.

Work items 6 Merge requests 1 Participants 2 Labels 2

Unstarted (open and unassigned) 3

- Where is the code you used to make this plot? #5
- and now a third thing. #3
- Question about X #2 In progress

Ongoing (open and assigned) 2

- Another reason why gitlab is great for reviews #6
- You could create tags so issues can be filter #4 Documentation In progress

Completed (closed) 1

- question from reviewer. #1 In progress

16% complete

Start date: No start date

Due date: Aug 8, 2026 (1 month remaining)

Work items: 6 Open: 5 Closed: 1

Time tracking: No estimate or time spent

Merge requests: 1 Open: 0 Closed: 0 Merged: 1

Releases: None

Reference: hallb/alert/notes/my...

A review question and documentation

The screenshot displays the GitLab interface. On the left is a sidebar with navigation options like 'Project', 'Issue boards', and 'Settings'. The main area is split into two panels. The left panel shows an 'Issue Boards' view with columns for 'Open' and 'In progress' issues. The right panel shows a detailed view of an issue titled 'Where is the code you used to make this plot?'. The issue is in the 'Open' state, created 3 months ago by Armstrong, Whitney. It has no description and one child item: 'Add documentation for script in common analysis'. The activity feed shows a change in milestone to 'First round review' and two comments from Armstrong, Whitney.

Project

- my_analysis_note
- Pinned
- Work items
- Pipelines
- Merge requests
- Container registry
- Milestones
- Manage
- Plan
- Work items
- Issue boards**
- Milestones
- Wiki
- Code
- Build
- Secure
- Deploy
- Operate
- Monitor
- Analyze
- Settings

HallB / ALERT / notes / my_analysis_note / Issue Boards

Development Search

Open 3 +

- Assigning reviewers #7
- and now a third thing. #3 First round revl...
- Another reason why gitlab is great for reviews #6 First round revl...

In progress 3 +

- You could create tags so issues can be filter Documentation #4 First round revl...
- Question about X #2 First round revl...
- Where is the code you used to make this plot? #5 First round revl...

my_analysis_note#5

Where is the code you used to make this plot?

Open Issue created 3 months ago by Armstrong, Whitney

No description

0 0 Add design Create merge request

Child items 1

- Add documentation for script in common analysis Open hallb/alert/notes/another_analysis_note#1

Linked items 0

Link items together to show that they're related.

Activity All activity Oldest first

- Armstrong, Whitney changed milestone to %First round review 3 months ago

Armstrong, Whitney @whit Author Owner 3 months ago

That was generated by this specific version (commit) of the script https://code.jlab.org/hallb/alert/c12/-/blob/aa5813b98b1f0eebce5e99bac2a4c1c063cb1e3f/analyses/checks/timestamp_check.cxx

I cannot tag Maria as a test, so I guess that means she has never logged into code.jlab.org or is not part of the required parent groups?

Armstrong, Whitney @whit Author Owner 3 months ago

OK I will send her an invite to the ALERT group because I have permissions to manage this groups members.

Armstrong, Whitney @whit Author Owner

Assignee None - assign yourself

Labels In progress

Milestone First round review

Dates Start: None Due: None

Time tracking Add an estimate or time spent.

1 Participant

What's new 10

Project

- my_analysis_note
- Pinned
- Work items
- Pipelines
- Merge requests 0
- Container registry
- Milestones

Manage >

Plan >

Work items

- Issue boards
- Milestones
- Wiki

</> Code >

- Build >
- Secure >
- Deploy >
- Operate >
- Monitor >
- Analyze >
- Settings >

Where is the code you used to make this plot?

That was generated by this specific version (commit) of the script https://code.jlab.org/hallb/alert/c12/-/blob/aa5813b98b1f0eebce5e99bac2a4c1c063cb1e3f/analyses/checks/timestamp_check.cxx

I cannot tag Maria as a test, so I guess that means she has never logged into code.jlab.org or is not part of the required parent groups?

Armstrong, Whitney @whit 3 months ago

OK I will send her an invite to the ALERT group because I have permissions to manage this groups members.

Armstrong, Whitney @whit 3 months ago

Where is the template latex section for this common piece of analysis to use with this script's output?

Armstrong, Whitney @whit 3 months ago

Oh that can be found here: https://code.jlab.org/hallb/alert/docs/alert_manual/-/blob/master/main.tex?ref_type=heads

Armstrong, Whitney @whit 3 months ago

Can you document that in that project too?

- Armstrong, Whitney added another_analysis_note#1 as child task 3 months ago
- Armstrong, Whitney added in progress label 11 hours ago
- Armstrong, Whitney assigned to @whit just now

Assignee Edit

Armstrong, Whitney

Labels Edit

in progress x

Milestone Edit

First round review

Dates Edit

Start: None
Due: None

Time tracking +

Add an estimate or time spent.

1 Participant

Participant icon

Preview

B I

@maria

- marianaV Mariana Khachatryan
- ZUREK** Maria Zurek
- bondl Bondi, Mariangela

Make this an internal note ?



Project

my_analysis_note

Pinned

Work items

Pipelines

Merge requests 0

Container registry

Milestones

Manage

Plan

Work items

Issue boards

Milestones

Wiki

Code

Build

Secure

Deploy

Operate

Monitor

Analyze

Settings

What's new 10

Help

Collapse sidebar

Question about X

Open Issue created 3 months ago by Armstrong, Whitney

here is another thing you need to address.

0 0

Add design Create merge request

Child items 0 No child items are currently assigned. Use child items to break down work into smaller parts.

Linked items 0 Link items together to show that they're related.

Activity

Armstrong, Whitney changed milestone to %First round review 3 months ago

Armstrong, Whitney @whit 3 months ago Oh that came from here https://code.jlab.org/hallb/alert/atof_docs/-/blob/9e5ea22ec1e6c80b0c18d0530f36b647fb32fbc7/design/sipm_boards_v4.1.3_bot.png



Edit

Assignee Edit

Armstrong, Whitney

Labels Edit

in progress

Milestone Edit

First round review

Dates Edit

Start: Jun 11, 2026

Due: Jul 9, 2026

Time tracking +

Add an estimate or time spent.

1 Participant



Some other features

The screenshot displays the GitLab web interface. On the left is a sidebar with a 'Project' menu containing 'my_analysis_note' and various project management options like 'Pinned', 'Work items', 'Merge requests', 'Container registry', 'Milestones', 'Manage', 'Plan', 'Work items', 'Issue boards', 'Milestones', 'Wiki', 'Code', 'Build', 'Secure', 'Deploy', 'Operate', 'Monitor', 'Analyze', and 'Settings'. The main area is split into two panes. The left pane shows 'Issue Boards' for the 'my_analysis_note' project, with a search bar and a list of boards: 'Open' (5 items), 'Documentation' (1 item), 'In progress' (1 item), and 'Backlog' (1 item). The right pane shows a detailed view of an issue titled 'Assigning reviewers' (ID #7) in the 'Development' branch. The issue description reads: 'Because Bryan nor Maria are in the system yet. I can tag @mckinnon here but I cannot assign him as a reviewer to sign off on this issue from a him (who is a committee member in this scenario)'. The issue was created 3 months ago by Armstrong, Whitney. The right sidebar contains metadata for the issue: Assignee (None), Labels (None), Milestone (None), Dates (Start: None, Due: None), Time tracking (None), and 2 Participants. Below the metadata is an 'Activity' section showing a log of changes: Armstrong, Whitney changed the description 3 months ago (with a red box highlighting the new description text) and changed the title from 'I cannot assign reviewers yet' to 'Assigning reviewers' just now. At the bottom of the issue view is a rich text editor with a preview mode and a comment input field.

Moving Forward

First steps

- Create a new top level group (request to JLab admins)
- Create a reasonable group structure
- Create a some template repos
- Do a a first review?
- Need to formally define “Common Analysis Note” (CAN)
- Slowly move away from old review website
- Build static web page for each review type listing those completed (approved reviews) including old ones

```
clas_collab
├── reviews
│   ├── ad_hoc
│   │   ├── a_clas_manuscript.git
│   │   ├── clas12_adhoc_reviews.git
│   │   ├── clas_adhoc_reviews.git
│   │   └── some_clas12_manuscript.git
│   ├── analysis
│   │   ├── rgA_DVCS_analysis.git
│   │   └── some_physics_analysis.git
│   ├── common_analysis
│   │   ├── FD_gamma_detection_efficiency.git
│   │   ├── CD_neutron_PID.git
│   │   ├── clas12_analyses.git
│   │   └── rgX_FD_fiducial_cuts.git
│   └── pac
│       └── alpha_knockout_loi.git
└── service
    ├── clas12_tasks.git
    ├── service_work.git
    └── task_list
        ├── alert_tasks.git
        └── rgc_tasks.git
```

Summary and Discussion

- Proposed to use code.jlab.org for collaboration reviews
- Propose to add “Common Analysis Note” (TBD) as service work
- The goal is to facilitate reviews and encourage modern/reusable workflows with documentation
- Gitlab is a clear choice, it is supported by JLab, new ideas can developed and implemented

Discussion



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Argonne 
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What is “reproducible”?

Containerization needed

- Reproducible means I can take the code and the inputs and run it identically to get the same output.
- In the CAN context it means:
 - Images can be rebuilt and pushed to register
 - Input data is defined and available (even if it is on tape)
 - Execution of code in container produces standard outputs

Is it complete?

Review #3315727: "Coherent and Incoherent DVpiOP with CLAS EG6" (1st round ended on January 9, 2019)

Initiated by: Michael Wood
Review type: Analysis
Status: 1st round ended. When updated material is available, please contact Michael Wood to restart the review.
Contact author: Frank Cao
Experiment/Working group: eg6/NP
Committee: Chaden Djalali (Chair), Ahmed El Alaoui , Axel Schmidt
Review deadline: January 9, 2019
Notes:

Thank you for agreeing to review this analysis.

The task is to determine whether the analysis is sound and the quoted errors are reasonable. Please take into account any previous related CLAS results. There is no need to worry about polishing the text as long as the information is accurate. The CLAS procedure foresees a nominal month for the first round. However, since the end date for the initial review falls on a holiday, it has been extended until January 9, 2019.

Along with the analysis note, a checklist has been uploaded. Feel free to use this as a shortcut to find common analysis tools applied like PID cuts, etc. Since not all analyses are the same, some items are left blank. The goal is to have more polished analysis notes before the review begins.

Options

None at this time

Tables below are sortable. Click column headers to reorder.

Associated documents

File name	Version	Date	Uploaded by	Notes
fcao_analysis_note-3315727-2018-11-30-v1.pdf	v1	November 30, 2018	Michael Wood	Start version
fcao_AnalysisNoteChecklist-3315727-2018-11-30-v2.docx	v2	November 30, 2018	Michael Wood	Analysis review checklist
Review_of_Frank_Thanh_Cao_Analysis_Note_Comments1-3315727-2019-01-02-v3.pdf	v3	January 2, 2019	Michael Wood	Comments from the com
fcao_analysis_note_v003-3315727-2019-02-14-v4.pdf	v4	February 14, 2019	Frank Cao	New version that have a
fcao_analysis_note_v003-3315727-2019-02-14-v5.pdf	v5	February 14, 2019	Frank Cao	New version that have a
comments_axel_20190217-3315727-2019-02-17-v6.txt	v6	February 17, 2019	Axel Schmidt	Here are my comments
fcao_analysis_note_v004-3315727-2019-02-21-v7.pdf	v7	February 21, 2019	Frank Cao	New version that have a Axel's most recent com 9-11, 15-6) - PID (pgs 3f
fcao_analysis_note_v004-3315727-2019-02-21-v8.pdf	v8	February 21, 2019	Frank Cao	New version that have a Axel's most recent com 9-11, 15-6) - PID (pgs 3f
fcao_analysis_note_v005-3315727-2019-03-06-v9.pdf	v9	March 6, 2019	Frank Cao	This the updated analysis (pgs 69-71) - The update procedure selected the s
comments_axel_20190309-3315727-2019-03-09-v10.txt	v10	March 9, 2019	Axel Schmidt	Here are my comments on the latest draft of the note (v9)
fcao_analysis_note_v006-3315727-2019-03-12-v11.pdf	v11	March 12, 2019	Frank Cao	Updated note to address comments Axel brought up. Changes since the last version were made to: - pgs 69-70 - pgs 82-83

Review #9190756: "Measurement of the Deeply Virtual Compton Scattering Cross Section from the Proton at 10.6 GeV using the CLAS12 Detector" (1st round ended on April 22, 2023)

Initiated by: Maxime Defurne
Review type: Analysis
Status: 1st round ended. When updated material is available, please contact Maxime Defurne to restart the review.
Contact author: Sangbaek Lee
Experiment/Working group: CLAS12/DP
Committee: Carlos Munoz Camacho (Chair), Andrey Kim , Harut Avakian
Review deadline: April 22, 2023
Notes:

This is the first cross section extraction using CLAS12. So all aspects must be carefully reviewed: signal selection, background subtraction, acceptance+radiative correction, polishing the text as long as the information is accurate. The CLAS procedure foresees a nominal month for the first round.

Options

None at this time

Tables below are sortable. Click column headers to reorder.

Associated documents

File name	Version	Date	Uploaded by	Notes
RGA_DVCS_xsec_analysis_note-9190756-2022-11-14-v1.pdf	v1	November 14, 2022	Maxime Defurne	Start version
AN_DVCS_x_sec-9190756-2022-12-21-v2.pdf	v2	December 21, 2022	Carlos Munoz Camacho	Comments to v1
Version2.pdf-9190756-2023-07-19-v3.pdf	v3	July 19, 2023	Bryan McKinnon	Second round analysis note (uploaded by Bryan)
AN_v2.pdf-9190756-2023-10-16-v4.pdf	v4	October 16, 2023	Maxime Defurne	Comments/questions from the analysis commit
Version3.pdf-9190756-2024-10-18-v5.pdf	v5	October 18, 2024	Sangbaek Lee	Third round analysis note with review response
Addendum_to_AN_V3.pdf-9190756-2025-01-23-v6.pdf	v6	January 23, 2025	Sangbaek Lee	Additional note to the V3, based on the meeting
Reply_Addendum.pdf-9190756-2025-02-12-v7.pdf	v7	February 12, 2025	Carlos Munoz Camacho	Reply to Addendum document
responses_to_reply_addendum.pdf-9190756-2025-02-14-v8.pdf	v8	February 14, 2025	Sangbaek Lee	Responses to the reply
Erratum_responses_to_reply_addendum.pdf-9190756-2025-02-17-v9.pdf	v9	February 17, 2025	Sangbaek Lee	Correction of the previous document.
Reply_v3.pdf-9190756-2025-03-31-v10.pdf	v10	March 31, 2025	Carlos Munoz Camacho	I uploaded my comments as PDF.
answer_to_axel_notice.pdf-9190756-2025-04-09-v11.pdf	v11	April 9, 2025	Sangbaek Lee	Formal responses to the approval notice and o
RGA_DVCS_xsec_analysis_note_final.pdf-9190756-2025-04-09-v12.pdf	v12	April 9, 2025	Sangbaek Lee	AN final version

Comments and replies

Contributor	Comment	Date
Carlos Munoz Camacho	I uploaded my comments as PDF.	December 21, 2022
Maxime Defurne	I uploaded my comments as PDF.	October 16, 2023
Reply by author(s)	I uploaded my comments as PDF.	October 18, 2024
Carlos Munoz Camacho	I uploaded my comments as PDF.	February 12, 2025

Examples

Alert manual build via CI with link to latest artifact in readme

https://code.jlab.org/hallb/alert/docs/alert_manual

The screenshot shows a GitLab repository page for 'alert_manual' under the 'HallB / ALERT / docs' path. The page includes a sidebar with navigation options like 'Project', 'Pinned', 'Work items', 'Pipelines', 'Merge requests', 'Container registry', and 'Milestones'. The main content area displays the repository name, a search bar, and a table of files. A 'Project information' sidebar on the right shows statistics like '32 Commits', '2 Branches', and '0 Tags'. At the bottom, there is a section for the 'ALERT Manual' with a link to the 'ALERT Manual PDF Document'.

Project: alert_manual

HallB / ALERT / docs / alert_manual

Update on Overleaf.
dupre authored Jun 18, 2025 and node committed 6 months ago

Name	Last commit	Last update
figs	new file: figs/atof_channel_mapping_diagram.png	1 year ago
.gitignore	modified: .gitignore	1 year ago
.gitlab-ci.yml	modified: .gitlab-ci.yml	1 year ago
README.md	new file: README.md	1 year ago
main.tex	Update on Overleaf.	6 months ago

Project information

- 32 Commits
- 2 Branches
- 0 Tags
- 16.8 MiB Project Storage

ALERT Manual

[ALERT Manual PDF Document](#)

Created on December 03, 2024