

The background is a solid blue color with a faint, light blue graphic. It features a central five-pointed star with rounded points, surrounded by a complex network of thin, intersecting lines that resemble a web or a circuit board. The lines are more densely packed in some areas and more sparse in others, creating a textured, technical appearance.

# ROOT PoW 2021 Work Mechanics



# Positive/Like

- Very happy with new migration to GH issues, it makes development and release process very transparent and easily to check everything I need in one place.
- Super happy with more intense usage of Mattermost and discussions there (easy to find anything I need in a history)
- New webpage is fantastic!
- Dailys are great to touch base every morning, especially during these times but also for the future in general
- Nice working environment with minimal friction
- The team works very well overall, and we communicate easily (thanks mattermost!)



# Positive/Like

- I think as a team we are not stuck in doing things as they have always been done, we are open to internal and external criticism, new ideas and to challenges to our understanding/plans/priorities. And ideas are evaluated based on their value and not who voiced them, which gives space to newcomers or younger members. Of course we have a lot of baggage (legacy code as well as a large and complex infrastructure around it) so change is not always easy (or possible), but I really like our attitude.
- The shifts: I believe they are now more “professional”, we even have instructions for the shifters.



# Positive/Like

- I like the daily meetings, and would like them to continue even in the (hopefully close) future when most of the team will be physically present at CERN. I believe that brief communication at the beginning of the day helps in keeping track of personal tasks and often can result in some good interaction and exchange of ideas.
- Moving from JIRA to github issues is good!
- Weekly team meetings well organised, positive looking quickly to open issues at every meetings
- Organization with topical meetings (PPP, TMVA, I/O is also good)



# Less Positive/Dislike/Concern

- ROOT team shifts: a bit hard to deal with amount of to-do items and do a weekly amount of dev work in the same time, but sadly I have no suggestions how to improve it...
- Documentation: from ROOT forum, it looks like Hist, TMVA, RooFit, Tree areas are not well covered by documentation (at least during my shifts these areas have the most questions requiring some explanation how to use a particular feature)
- Training: to develop more training materials, starting from very simple and finishing with expert level, but focused on 'heavy' promotion of new ROOT developments: RDF, PyROOT, RNTuple as well as a some cool features for ML in ROOT (TMVA)
- 'Stale' pull requests: what could be done?



# Less Positive/Dislike/Concern

- Daily short meetings (9AM) are useless from my point of view, we communicate easily enough by any other means
- Team members should feel more concerned by the Forum/GitHub and so on and not wait for the shifter to ping them
- Infrastructure: Jenkins is often unstable and might be a time sink sometimes



# Less Positive/Dislike/Concern

- Especially in remote mode, but also in more normal circumstances, we are very isolated from each other in our daily work. It's a bit lonely, but most importantly sharing expertise, ideas, thoughts and in general having those discussions that seem to go nowhere that sometimes lead to "big ideas" is super important. Partly it is a manpower issue, of course – I didn't feel this way that much when I was pair-debugging something or white-boarding ideas with Danilo almost everyday. But maybe it would be enough to dedicate empty PPP/team meetings time slots, or Friday afternoons, to just hanging out in the same Zoom room while we work and see what happens. I think the dream would be to have overlaps in areas of expertise, so one dev is 80% RooFit and 20% Python, another is 80% Python and 20% build system, etc. So that over time there are two brains paying attention to a given area of ROOT rather than one + Axel's-brain-on-demand.



# Suggestions/Wish List

- List of references to be used for ROOT projects: RNTuple, RDF, and etc.
- In average, I think It would be beneficial to see more communications (e.g. short presentations (5 slides max), blog posts, posts about new tutorials) about developments in ROOT once in a while. Sometimes I think it looks like that Release notes is maybe only way we communicate publicly what was done new.





# Suggestions/Wish List

- The experiment's software (CMSSW, Gaudi, ...) and the users doing analysis are two different user bases. Whereas ROOT is well connected to the groups developing the experiment's software, the typical user at the university is hard to grasp. More actively reaching out (pushing for ROOT in computing schools, experiments schools, ...) is crucial to get an idea who these users are and should be a very important activity in the ROOT team. Giving this out of hand (such as in the ATLAS case) might be not wise since these events are not only educating our users but also us as developers and are the rare opportunities to get in touch with these users.



# Suggestions/Wish List

- Detailed statistics about our users would be very useful to guide future developments: Number of Windows, Linux and Mac users (not the downloads, these numbers are extremely biased), most important features in ROOT, ideas for improvements, ... . Such a feedback form could be added to all of our talks, the website and the forum and would gather a significant amount of data over time. Since manpower is very limited, prioritizing the actual user's needs is crucial.



# Suggestions/Wish List

- I think we would also benefit from an internal wiki/knowledge base/tribal knowledge repository to document things around the code, such as jenkins infrastructure, website infrastructure, a list of places where we keep training material, how to profile and/or debug ROOT (especially w.r.t. jitted code), tips and tricks for ROOT devs, etc. I have [a list of things](#) but it's very incomplete, biased and not always on-point.



# Suggestions/Wish List

- Tangentially related: do we participate to enough experiments' meetings to see what our users are doing and what problems are encountering? (I don't even know if ATLAS' Analysis Working Group or the CMS equivalent even want us there, just spitballing here)
- I think it's important that everyone in the team (as busy as we are) commits to do thorough shifts. Problems are usually solved faster if we don't postpone until the following
- Monday the report on e.g. what is the status of the builds / tests. This should be done on a daily basis / once every two days at least so the concerned people react earlier.



# Suggestions/Wish List

- I am a strong believer of the importance of outreach. I think the project would benefit greatly from some form of online, up to date open course. I believe there's already quite some material at our disposal (the most recent example being the CMS-DAS work by Stefan and Enrico). All other common data analysis tools have some form of open course to help students and beginners. I acknowledge that this would be a major effort and the number of people in the team might not be at its highest, but still I would take the chance. Another good example of source of material for this course would be the series of ROOT seminars that will be held in 2021.



# Suggestions/Wish List

- Not sure if this belongs here - I have a general feeling that modernisation efforts (PyROOT, RDF) are well received, but ROOT still has a generally bad reputation among the users particularly due to usability issues. People would occasionally complain/joke on Twitter instead of making a GitHub issue. And this situation is less than ideal.
- If possible, one idea is to have more social media engagement, to promote new features, to demonstrate progress as well as to collect feedbacks - and acknowledge the workload of this to whoever it is assigned to.



# Suggestions/Wish List

- Topical meeting should be also place where people interested have chances to discuss and get more ideas
- One thing to get more ideas is to involve some of the bright young people of the team to participate on discussions on different topics (not really work on the topics but to make them a bit involved)



# Hot Topic: Dailies

Dailies seems a hot topic. So here is a dedicated chapter about them.

The dailies: what do we do with them?

During the pandemic and the long teleworking periods, the dailies have served as a way for all of us to keep in touch and be less isolated. However, we currently use them as a way to report the status of our work, which has pros and cons. Pros:

- It allows the project leader to have a better idea of who is doing what, which can be harder to track when we don't see each other in person.
- Having to report your work on a regular basis is like having deadlines, it pushes you to get work done.





# Hot Topic: Dailies

## Cons:

- Our team is very heterogeneous and we mostly work on separate areas, which means we often listen to (detailed) reports that are not that relevant for us.
- Most of the time in the dailies is not used to coordinate efforts, identify blockers, etc. which should be their spirit (they are not supposed to be status reports).



# Conclusions/Discussion

- Quite positive feedback overall
- Very constructive comments and many suggestions
- Highlight
  - Dailies are a hot topic!
  - Missing communication, e.g. with outside (experiments) world
  - Outreach (social medias)