

March 13, 2026 ns-3 maintainers meeting minutes

Attendees: Tom Henderson, Biljana Bojovic, Eduardo Almeida, Alberto Gallegos Ramonet, Peter Barnes, Devansh Gupta, one other attendee whose name I missed

1. status on strongly typed units

Three viable candidates

- 'si-units' custom library from Jiwoong and Sebastien
- 'nholthaus/units' port
- a new 'mp-units' port

Tom favors using mp-units and favor trying to port ns-3 wifi and possibly more libraries over the next couple of weeks. No longer wants to pursue 'nholthaus/units' because mp-units appears to be superior.

Tom favors adopting mp-units over si-units because mp-units potentially represents less of a maintenance burden on the ns-3 project, may become the C++ standard, and provides a possible path to include ns3::Time class within the framework.

Tom encouraged all stakeholders (particularly wireless module maintainers) to review this so that there was an opportunity to take a decision before getting too close to the deadline.

Tom also commented that Claude Code was very helpful this time around with porting the nholthaus-units patches to mp-units, unlike last summer when it made many errors on nholthaus-units and its use was abandoned at that time. Claude Code (Opus/Sonnet 4.6) is now useful and saves time and drudgery, but still needs to be overseen and guided, and can occasionally stumble unexpectedly.

Peter asked where the mp-units port came from; Tom said it was the latest release 2.5.0 copied into third-party directory. Eduardo asked Gabriel and Tom about the approach to bringing it in and they both agreed on this approach to copy in (it is MIT licensed).

Eduardo asked about backward compatibility, and Tom replied that the patch would break backward compatibility (later clarified in the MR that programs that configure ns-3 Wi-Fi from the helper/attribute/default subsystem may not see an impact, and that trace sources are still using double, but that use of the public API for lower-level configuration would break).

Devansh commented in the chat that "regarding backward compatibility with mp-units: one approach that could ease the transition is adding a temporary implicit operator double() on the new strongly-typed quantities (e.g., dBm_u, MHz_u). This way, existing code

that passes these to DoubleValue() or uses them in raw-double arithmetic would still compile during the migration period. The implicit conversion could then be deprecated and removed over a few releases."

2. policy on AI tools, and coding agent AGENTS.md

Tom said that he was a proponent of using AI tools and believes that they can help accelerate ns-3 development, but is cognizant of some concerns about the use of these tools in the open source community. He mentioned that things are moving fast, and we ought to put into place an AI policy (MR under review) and AGENTS.md so that contributors know our stance and how to work within the project guidelines.

Alberto said that it seems like the maintainers all agree, and that the principle of "don't post code you don't understand" is a good guideline. Eduardo also noted that it is important that the author of MR takes ownership of code that is produced.

Devansh commented in the chat that "A major risk with encouraging AI-generated code is the spike in low-effort PRs that ignore project guidelines, which drastically increases the review burden on maintainers. Compounding the issue is the massive variance in AI tool quality. Contributors using sub-par or outdated models might submit code with subtle, confident hallucinations that take twice as long to debug during review."

Tom mentioned that Devansh's concern about a spike in low-quality PRs is already reportedly being experienced on other open source projects.

Peter said that a team he was familiar with took about 18 months to develop good prompting skills, but eventually they got their project to the point at which it writes perfect documentation for them, so now they don't have to write any themselves.

Eduardo asked about allowing agents to create MRs and that some tools are emerging that allow agents to interact with trackers directly. Tom said that for now, he was opposed to allowing posting access without human in the loop.

GitHub now allows maintainers to turn off the property that anyone can open a pull request (not sure if GitLab.com permits this yet). Biljana volunteered to check GitLab.com issue tracker to see if someone has requested this feature; we want to avoid waking up some day to 1000 new MRs that we need to review/close. Biljana is also looking into whether some GitLab Duo services or other AI services could be used by us to, for example, summarize MRs and to triage low-quality MRs.

3. Plan/organization for triaging our issues and MRs

Tom mentioned that he wants to try to leverage agents to work through the backlog of open MRs and issues, and mentioned the history of this backlog and that maintainers had not come to agreement in the past about closing dormant issues/MRs.

Tom also said that he felt that many of our open issues have vague requirements or not agreed upon by maintainers, leading to unfortunate outcomes that a new contributor brings a MR that is rejected. He would like to work on improving this state and may set up regular coordination meetings/telecons to work on this. One limiting factor is maintainer bandwidth to keep up with, for instance, setting requirements on open issues. Tom is also thinking about new tags: 'dormant', 'agent-only', 'human-only'.

Alberto said that he was mainly concerned in the past about MRs that die on the vine because changes are requested and the original poster does not return to follow through, and had advocated to close those.

Peter commented that he thought of the issue tracker as being like Post It notes on a wall to come back to later, and felt that issues and MRs that are lingering are still useful in that state for someone to return to later, and that if closed, they will be hidden from view.

Alberto replied that he was concerned about ever growing backlog signifying a "broken window syndrome" on the project.

Biljana was in favor of some more meetings to work through the backlog, and also the use of AI to help summarize/evaluate/recommend requirements.

Gabriel brought up some dormant MRs on wifi clipping (MRs !622, !648, !649, !650 and !546) from 2019 and expressed skepticism that anyone will ever return to them, but Biljana indicated interest. Biljana agreed with Peter's stance that it is better to keep things open in case someone can make more progress.

Eduardo said that he felt like it would be helpful if every MR were assigned to a person, and to limit the MR size (a discussion topic that we did not have time for).

The next meeting may be on an upcoming Friday in same time slot (this timeslot is good for Alberto). Friday April 3 (15:00 UTC) and Friday April 24 (15:00 UTC) work for Tom.