Overview of Git and Gitlab

… and how it could be used for our specifications

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What is Git

- Overwhelmingly popular **version control system** used by software developers in all markets **all over the world**.
- Like we do in 3GPP, Git allows users to work distributed, collaboratively and in parallel on different features of a common big project.
- All revisions and changes to the documents are tracked by Git allowing users to go back and see how/when/why changes were made.
  - The same is possible, but painful, for the Word-based 3GPP specifications.
- Git allows users can work on the code **remotely** (i.e., online directly towards the server) or they can download and work on it **locally** (i.e., also offline).
  - The Git "push" and "pull" commands uploads and downloads from your local computer to a remote repository

How Git works

- Documents are stored in ”Repositories“
  - Like the 3GPPs FTP server
- A ”Main branch“ is the current stable document
  - Like a latest version of a 3GPP specification.
- Someone wanting to change the document creates a ”branch“. On that branch, the proponent makes (i.e. ”commits“) their changes
  - Like a CR
- When ready, the proponent requests to ”merge“ their branch to the ”Main branch“
  - Like submitting/proposing the CR in a 3GPP meeting
- If the merge is agreeable, the branch is merged to ”Main“
  - Like implementing the CR in the specification

GitLab

- GitLab is a user-friendly web-based platform built on Git with additional features
- GitLab can render Markdown with sequence diagrams, formulas, etc.
- Users can comment on proposed changes
  - Like we today add comments in "Word bubbles" on draft CRs
- Different people can have different roles in GitLab
  - Like today when only MCC implements CRs, or only chairs to declare them agreeable.
- Other potential features which can be used if the specs are in Gitlab:
  - Automated tools
  - ASN.1 syntax checking
  - Automatic CR collision detection

3GPPs Gitlab: forge.3GPP.org

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