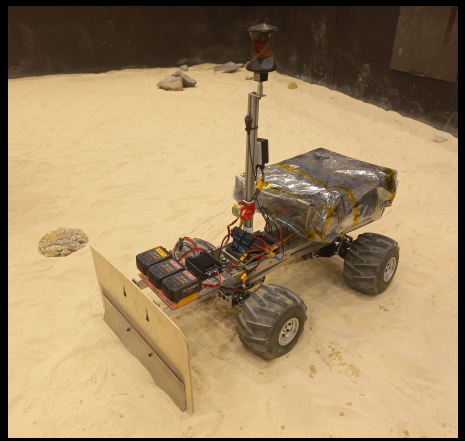
Lunar ROADSTER

(Robotic Operator for Autonomous Development of Surface Trails and Exploration Routes)



"Starting with a foothold on the Moon, we pave the way to the cosmos"

Amalgamation of Traditional and Agile PM

Traditional PM:

- Well-defined requirements and a clear project scope.
- Structured schedule with milestones to meet deadlines.
- Tasks are assigned based on a planned workflow, with periodic check-ins to track progress and ensure alignment with project goals.
- Team members document their work thoroughly for transparency and tracking.
- Test plans and risk management studies are conducted to identify and mitigate potential issues.
- Budget and resources are carefully planned to ensure the project stays within budget.

Agile PM:

- Early failure, quick adaptation, and rapid improvements.
- Sponsor and stakeholder inputs drive subsystem refinements for the best MVP.
- Individual ownership of tasks; linear organization
- Daily stand-ups and Kanban boards for progress and scheduling.
- Test-Driven Development ensures robust hardware and software reliability.
- Team members collaborate across disciplines as needed.

Amalgamation of Traditional and Agile PM

Why we chose amalgamation?

- Structured Planning with Adaptive Execution.
  - Clear objectives and well-defined requirements, with quick adaptation to changes in subsystems without changing the scope
- Risk Mitigation and Continuous Improvement
  - Predictive risk analysis and mitigation plans, with iterative approach for quick failure, fast learning and continuous enhancement
- Efficient Team Workflow
  - Traditional task allocation and ownership, with cross-functional collaboration and decentralized decision making
- Predictability and Adaptability
  - Predictive budgeting, scheduling and resource allocation, with allowing adjustments based on real-world testing and feedback

Amalgamation of Traditional and Agile PM

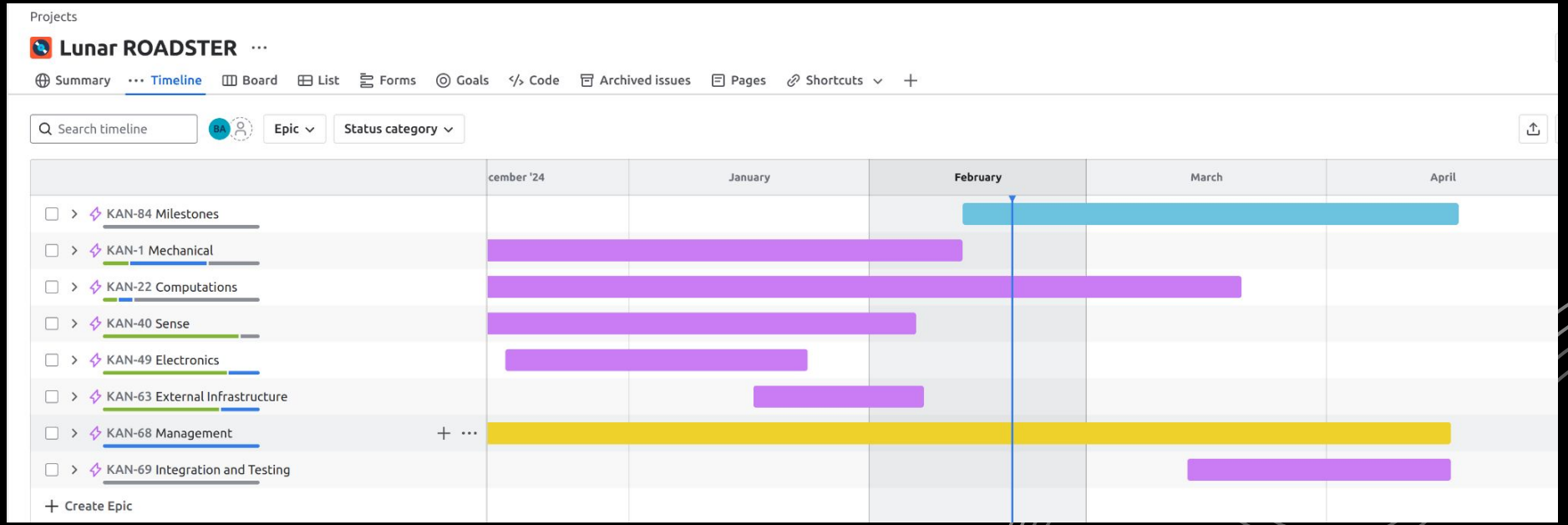
Challenges of amalgamation

- Daily stand-ups improve collaboration, but if not kept concise and focused, they can become repetitive and time-consuming, reducing productivity.
- Agile allows frequent feedback, but balancing changes with a fixed timeline is challenging.
- Traditional PM requires detailed documentation, while Agile prioritizes speed. Finding the right balance is crucial.

Project Management Methodology

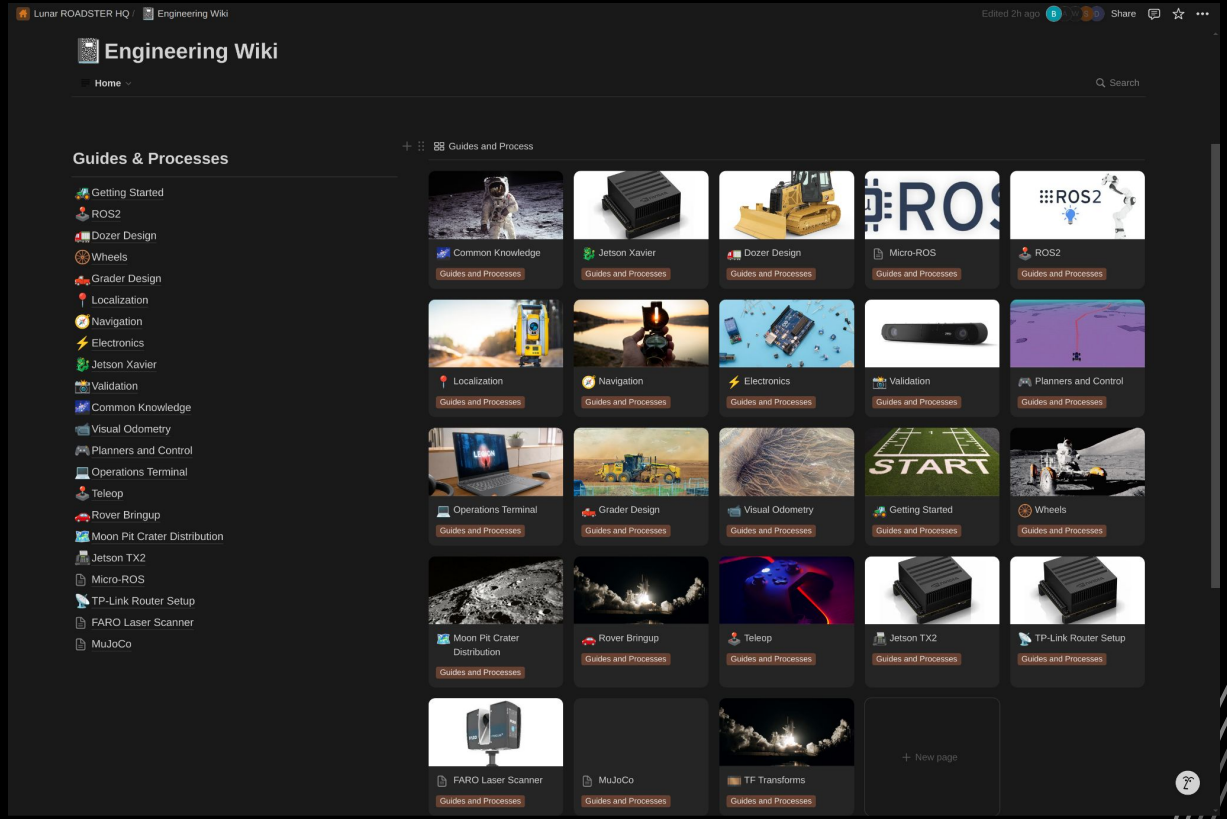
Jira - Managing Schedule

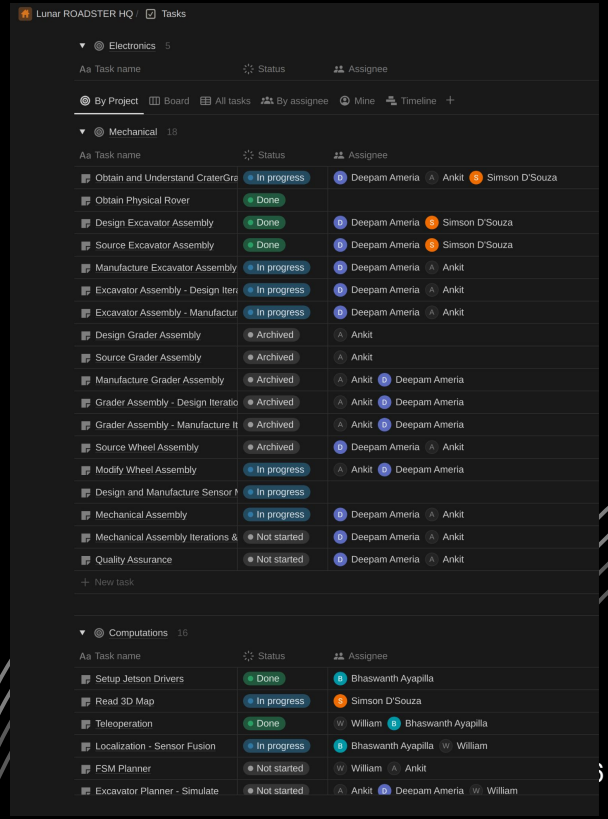
- Provides clear timeline view
- Gantt chart to track progress of each subsystem



Project Management Methodology

Notion - Documentation, Task Assignment & Meeting Notes





Project Management Methodology

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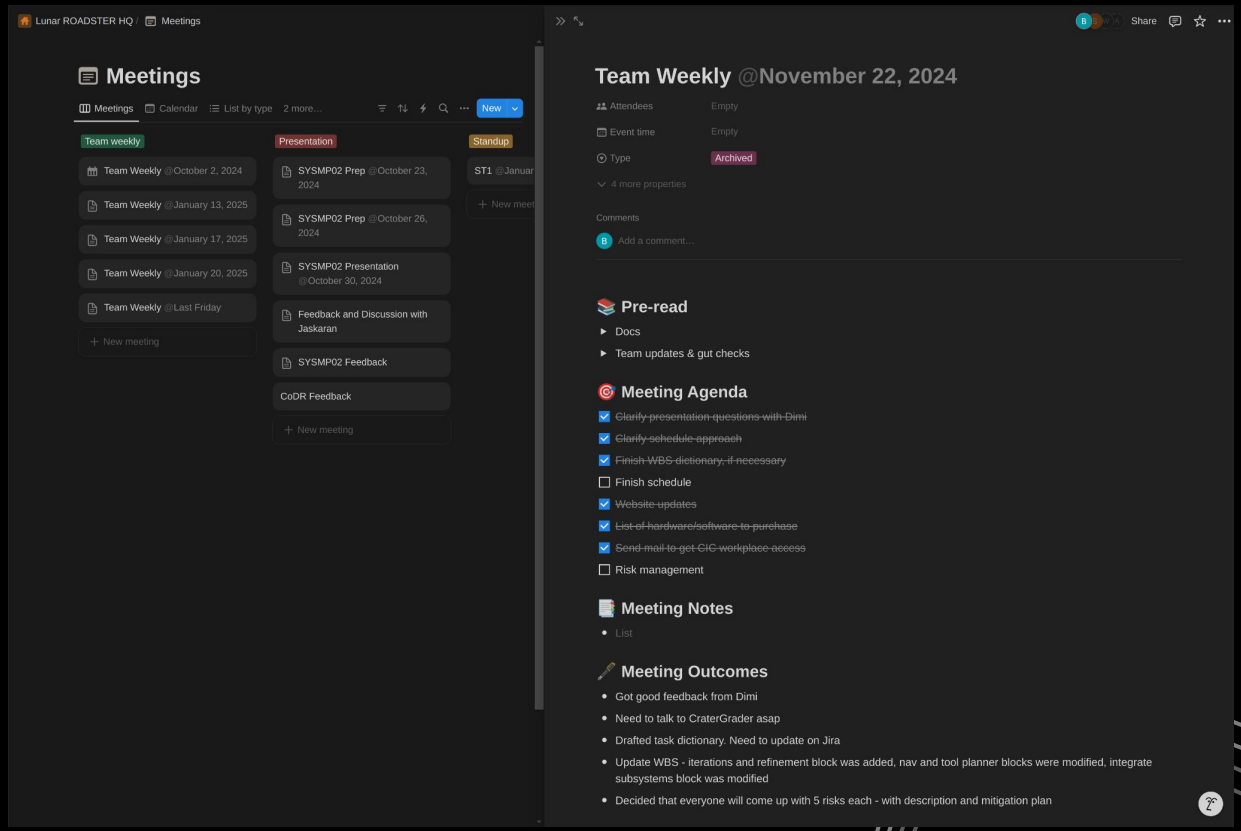


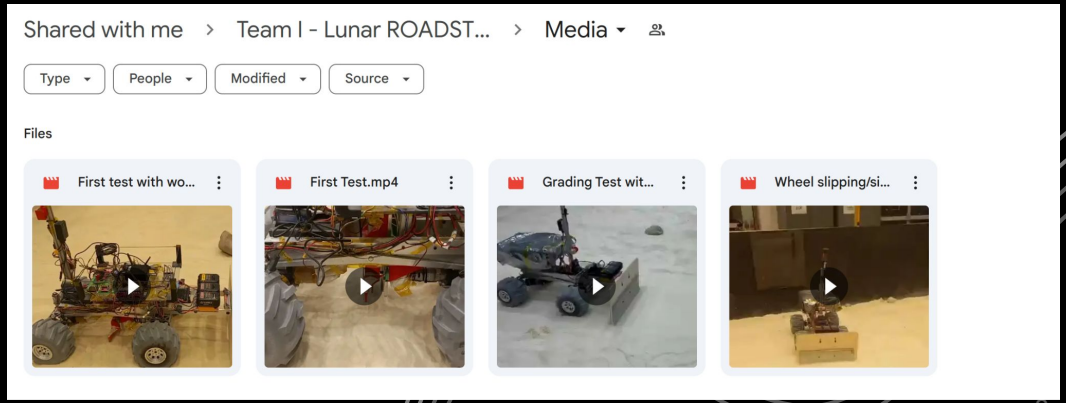
Project Management Methodology

Discord

- Share important resources
- Hold virtual meetings
- Share test results and other relevant media

Google Drive

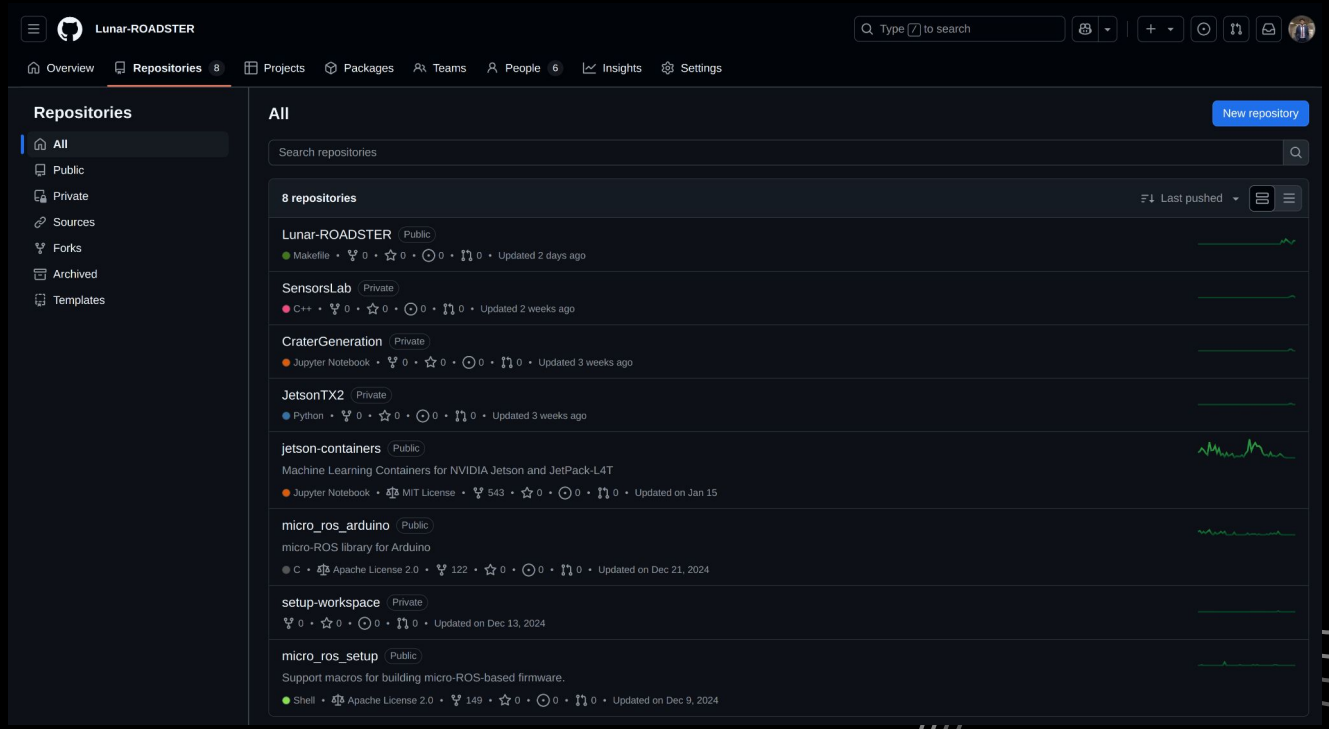
- Upload testing videos
- Upload project relevant documents



Project Management Methodology

Github -

- Version Control – Track changes & revert if needed
- Collaboration – Work together seamlessly



What Might Be Done Differently?

Better Schedule Tracking -

- Identification of risks
- Update issue log in timely manner

Issues Log

10 entries per page

Search:

Issue ID	Date Initiated	Date Resolved	Participants	Description	Options	Resolution	Justification
I01	11/28/2024	12/04/2024	Team	Too many performance requirements for SVD.	Have revised performance requirements separately for SVD and FVD.	Revised performance requirements down to 6. Clearly defined SVD and FVD objective split.	Conducted meeting with Crater Grader team and discussed what is feasible and what is not in the given time.
I02	01/20/2025	01/27/2025	Boxiang Fu	Unable to login to TX2 chip.	Flash the chip and build docker container from scratch.	Found that chip was used by LunarX team. Got in contact and obtained login details.	No need to reinvent the wheel if not necessary.
I03	02/10/2025	02/14/2025	Ankit Aggarwal	Steering mechanism components failed due to wear-and-tear.	Replace broken parts.	Replaced all components of the assembly and fitted new screws and bolts.	Replaced old parts as a precaution for further failure due to wear-and-tear.

Showing 1 to 3 of 3 entries

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Stand-Up Meetings

- Daily Standups on Weekdays (5:30 - 5:45 PM)
- Weekly Meetings with Sponsor - Dr. William ‘Red’ Whittaker (Friday)
- Everyone is showing up :) (Sometimes members attend virtually)
- Questions being used:
  - What have you worked on since the last Standup?
  - What are you going to work on?
  - Is there any help you need? Does your work affect anyone else’s ongoing work?
- Some key highlights where standup solved problems
  - Resource Reallocation to meet a deadline - Project Course Assignments, Internal Milestones
  - Re-assignment of member’s tasks based on help needed
  - Bandwidth Management
  - Insights into technical work: Helping wherever a member is ‘stuck’
  - Awareness of all ongoing work - makes us feel like we are ‘working in a team’, not in silos