

1 Introduction

This report presents an overview of the progress made by our team SPARK during the initial phase of the project. It details the planned activities, their current status, any encountered challenges, and the next steps to be undertaken. Special emphasis is placed on the team's preparation tasks, including code analysis, environment setup, and construction of the test environment (race track and traffic signs). The document also explains the postponement of certain tasks pending the arrival of the physical vehicle, which is scheduled to be delivered on 18th December 2024. Overall, the team has laid a solid groundwork, ensuring readiness for the more complex hardware integration and testing activities that will follow.

2 Planned activities

Activity	Members	Type of Activity
1. Study and analyze start-up code	Tai, Hieu, Long	Research
2. Set up the technical environment	Ha	Environment Setup
3. Prepare, build race track and traffic signs	Nhi, Ha	Preparation & Construction
4. Create project plan and milestones	Tai	Project Management
5. Test start-up code on physical car	Tai, Hieu, Long	Development (Postponed)
6. Integrate input-output (camera → motor)	Hieu, Long	Development (Postponed)
7. Begin ROS node setup for Camera	All	Development (Postponed)

3 Status of planned activities

Activity	Status	Implementation	Difficulties
1. Create project plan and milestones	Completed	Drafted a detailed plan with tasks, deadlines, and member responsibilities.	None.
2. Study and analyze start-up code	Completed	Successfully read and understood the start-up code. Key functions were documented.	Code complexity required extra effort.
3. Set up the technical environment	Completed	Installed Ubuntu and ROS for the simulator. All tools are now operational.	Initial setup required troubleshooting.

4. Prepare, build race track and traffic signs	Ongoing (70%)	Designed and built the race track. Final adjustments are being made. Key traffic signs (stop, crosswalk, priority) are almost complete.	Track adjustments for accuracy. Lack of materials caused delays.
5. Test start-up code on physical car	Postponed	Planned to begin after receiving the vehicle on 18th December.	Awaiting a physical car.
6. Integrate input-output (camera → motor)	Postponed		
7. Begin ROS node setup for Camera	Postponed		

4 General status of the project

Team SPARK has made solid progress in the preparation phase. Key tasks such as understanding the start-up code, setting up the technical environment, and constructing initial resources (race track and traffic signs) are either completed or nearing completion.

Due to the unavailability of the physical car, tasks requiring hardware testing or car integration (input-output linkage and ROS node development) have been postponed until the vehicle arrives on 18th December 2024.

5 Upcoming activities

Activity	Members	Type of Activity
1. Test start-up code on physical car	Tai, Hieu, Long	Development & Testing
2. Complete race track and traffic signs	Nhi, Ha	Preparation
3. Integrate basic input-output (camera → motor)	Nhi, Ha	Development
4. Begin ROS node setup for Camera	Tai, Hieu, Long	Development
5. Initial vehicle movement testing	All	Testing
6. Document progress and record video	Tai	Reporting