

Planning and Risk Analysis – NeuroDrive Project

4 Organisation and Schedule

The timeline below lists all deliverables for Q4. Type indicates whether the item is submitted by the whole team or individually.

Week (dates)	Primary Objective	Key Tasks	Milestone / Output
1 (14-20 Apr)	Project kick-off & requirements lock-in	<ul style="list-style-type: none"> - Finalise Program of Requirements - Confirm hardware shortlist - Set up Git repo & CI - Brainstorming control mechanisms 	PoR
2 (21-27 Apr)	Subsystem design & order parts	<ul style="list-style-type: none"> - Draft detailed block diagrams - Search for open-source eye tracking - EEG stimuli research 	F2 report submitted; eye tracking software
3 (28 Apr-4 May)	Acquire & test eye-tracking camera	<ul style="list-style-type: none"> - Buy camera equipment - start 3-D print glasses mount - eye tracking code - Testing and determining EMG placements - Connecting EEG to python 	Eye-tracking demo video 3 EMG options with decent output
4 (5-11 May)	Develop input pipelines	<ul style="list-style-type: none"> - Implement EMG thresholding - Build virtual 	EMG treshold; CAN Bus

		joystick mapping - Search Canbus - EEG signal analysis and reliability check	EEG connection as backup
5 (12-18 May)	Module integration	- Fuse EMG + gaze data - Define CANBUS - EEG with machine learning	start control loop (no wheelchair)
6 (19-25 May)	Wheelchair bench test	-further integration EMG + gaze data	finish control loop (no wheelchair)
7 (26 May-1 Jun)	Refinement & safety layer	-start integration with wheelchair Canbus -further enhance eye tracking	start control loop (with wheelchair)
8 (2-8 Jun)	System demo	- Full integration of a wheelchair	Demo full integration
9 (9-15 Jun)	Validation & documentation	- Validation matrix vs PoR - Finalise integration - final report	Ready for Week 10 portfolio; Finished integration

5 Analysis of Risk and Possible Complications

The project combines new hardware, real-time signal processing, and usability testing. Schedule slippage is therefore the dominant risk.

Key risks:

- Poor EEG/EMG signal quality
- Integration bottlenecks between sub-teams
- Limited wheelchair time
- Illness or overload of key members

Mitigations:

- Run a signal-quality pilot in Week 3 to tune filters early.
- Merge to main twice weekly; rotate an integration guardian.
- Pre-book wheelchair slots (Mondays & Wednesdays).
- Cross-train members; give periodic information about each section.