PROIOXIS

PROJECT MANAGEMENT

KICK-OFF MEETING

PROJECT DEFINITION

To ensure success, once we had defined our core strategy, we structured our vision using the **5W1H model,** outlining every aspect of our participation in the national finals.
We initially identified all the **stakeholders** (listed below) and what it was **essential** to produce. We realised that the 'where' and 'when' were not just the race at Mugello, but all the places and moments in which we dedicated ourselves to the project. To define how to proceed, we based our approach on **regulations and** our **experience,** drawing up budgets and deadlines.

WHO?	Stakeholders (team members, sponsors)
WHAT?	Race car, pit display, 3 portfolios
WHEN?	Every friday at school till 20th june
WHERE?	At school, at home, at work, and finally at the Mugello Circuit
WHY?	To inspire new generations
HOW?	Tracking, budget, regulations

PROJECT CHARTER

Once the project had been **defined** using the 5W 1H method, we drafted the project charter to set out **in detail** the stakeholders, the **reasons**, the **objectives** and the **quality criteria**, taking into account risks and resources.

[redacted]

Project Charter Credits: ProioxisRT

INITIAL FINANCIAL APPROACH

In the beginning of the project our **finances** were deposited and used through the **school's system** which had a lot of **constraints** both in terms of spending limits and obtainable materials. This is the main reason why we decided to **switch** to a no-profit sport **association outside** of school, defining higher spending limits and faster purchase of every equipment needed.

METHOD	PROS	CONS
school financial system	less responsabilities	slow purchases spending limitations
no profit association	more indipendence higher spending limits	more paperworks needed

SCOPE STATEMENT

At the project's beginning, we defined our primary goals and established a clear task allocation to ensure continuous improvement.
We adopted the [redacted] to set realistic and measurable goals. The five key areas identified are illustrated in the radar chart and detailed in the table below, outlining our **targets**, execution **strategy**, and strategic **importance**.

[redacted]

GOAL	Specific	Measurable	Achievable	Relevant	Time-bound
improve race and reaction time	race and reaction simulations	race:0,90-1,10 s reaction:140-150 ms	yes, with strict plans and simulations	400 points	19 June 2026
reduce presentation time	optimize speeches and eliminate spelling errors	8,5-9 min to present	yes, by dedicating the final week to speaking practice	90 points	10 June 2026
make an easier and lighter pit display	quicker pit display assembly	1.5 hr to compone it	yes, by making the components lighter and easier to assembly	60 points	11 May 2026
upgrade portfolios	older portfolios analysis from winning teams	every point required from regulation	yes, through implementation and regulation	450 points	7 June 2026
have better social media influence	weekly posts and video	+500 followers +200k views	yes, through the use of targeted hashtags and video content	more return for sponsors	June 2026

SMART framework Credits: ProioxisRT

KEY STAKEHOLDERS

First of all, we identified all the potential stakeholders, who were then ranked in order of priority:

NAME	ROLE	CONTRIBUTION
M. Gasparini , A. Roverato, L. Ziroldi, G. Marcante, M. Gobbi, C. Rebasti, L. Cezza, O. Bassan	**Team members**	The people working on the project
F. Pesavento, L. Zanrosso	**Supervising Teachers**	Facility access and technical mentorship
Matteo Tasca, Samuele Vinante, Giulio Minchio, Andrea Minchio	**Old Proioxis**	Give us advice and support so we can keep improving

We used the **stakeholder ranking method** to assess the priority of each stakeholder, so as to give them the appropriate weighting in our research and to manage communication effectively.
The parameters used in the table range from 1 to 5 and are:

[redacted]

P x I x M = TOTAL PRIORITY

STAKEHOLDER	P	I	M	TOTAL PRIORITY
[redacted]	2	2	5	20
	3	5	2	30
	1	2	1	2
	1	3	3	9
	2	4	5	40
	2	4	5	40
	2	4	5	40
	2	3	2	12
	1	2	3	6
	2	3	5	30
	3	4	4	48
	1	2	4	4
	1	2	2	4
	2	4	5	40
	2	2	5	20

LOWER PRIORITY **HIGHER PRIORITY**

The following pages will identify the stakeholders and explain in detail how they were identified.

Stakeholders tab. - Credits: ProioxisRT

DELIVERABLES AND QUALITY ACCEPTANCE CRITERIA

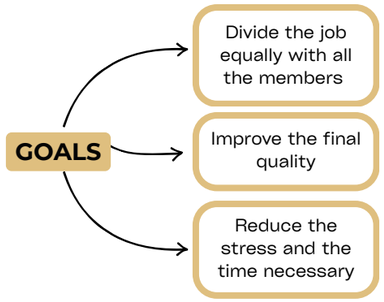
In order to produce qualitative work we decided to implement some **criterias** for each deliverable we take to the national finals. This control is done the day before the due date, so we can confront the results with our **expectation**, make some finishing touch and let the Team Leader **sign-off** the product.

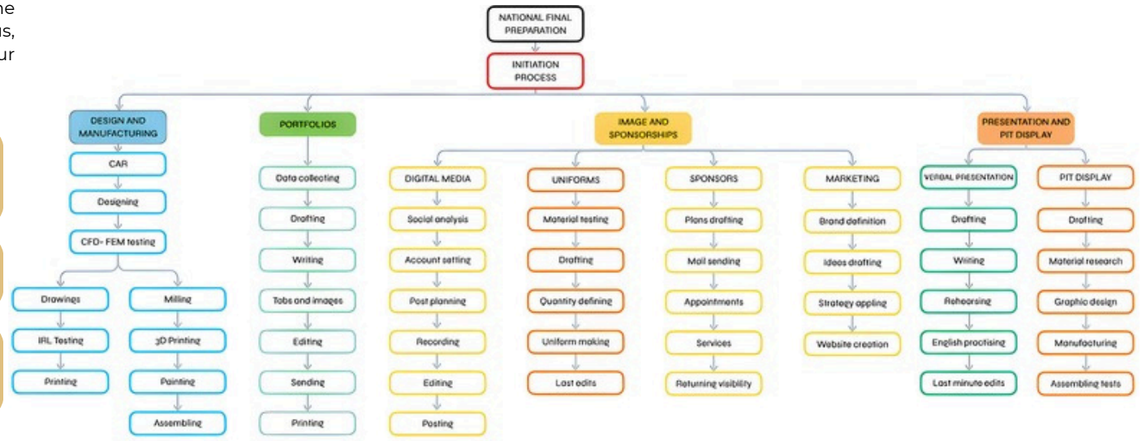
[redacted]

Tab of Acceptance Criteria - Credits: ProioxisRT

WORK BREAKDOWN STRUCTURE

The WB allowed us to break down all the **macro activities** into smaller ones. Thus, we were able to divide and organise our work better.





PERT & CRITICAL PATH

Since our time for this phase was limited we decided to also implement a **PERT system** to be sure of our timeline. Our system is made with 3 main time decided:

- **OPTIMISTIC (A):** the timeline assuming everything goes smoothly
- **PESSIMISTIC (B):** the timeline with all possible delays
- **MOST LIKELY (M):** the most probable timeline

Using the formula below we were able to estimate the actual time needed:

[redacted]

Thanks to this and the variance formula, we were also able to identify the **Gaussian curve** to prevent delays and various issues we might have encountered, adjusting our schedule based on the most time-variable activity, resulting in an even more organized **Gantt chart**.

[redacted]

DURATION TASK	MOST LIKELY DEADLINE	PESSIMIST DEADLINE
TASK		

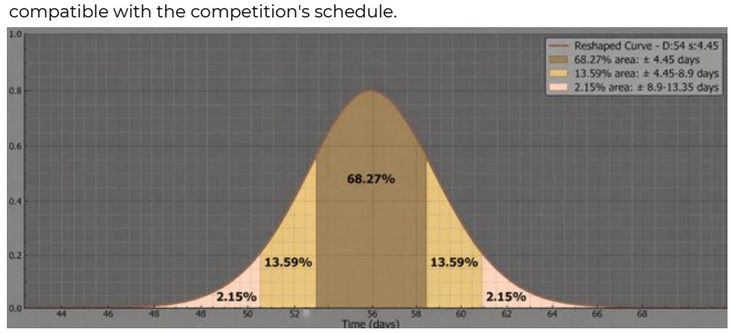
Using these indicators, we were able to identify the **critical path**, highlighted in gold.

[redacted]

[redacted]

GAUSSIAN CURVE

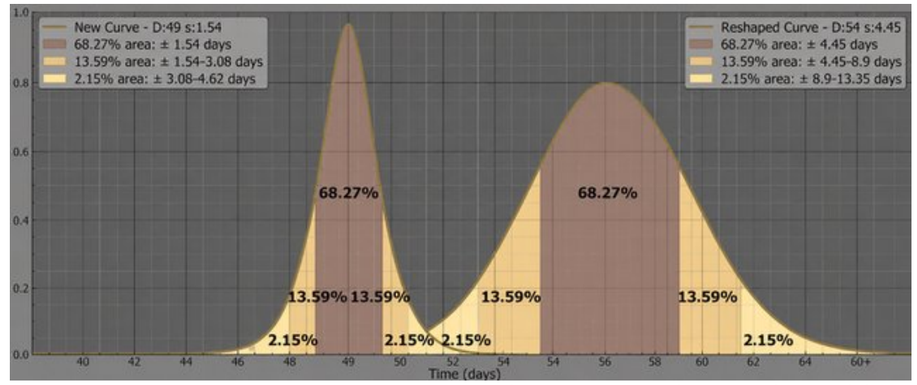
Thanks to this chart, we were able to assess the **probability of completing the project within the competition timeframe**. By analysing the critical path, we determined the project's maximum duration, excluding the *Verbal Presentation activity*, which would take place after the submission deadline.
The chart shows that achieving a **98%** probability of **project completion** would have required **64 days**. However, with only 55 days available, this was not compatible with the competition's schedule.



Initial Gaussian curve- Credits: Gemini PRO

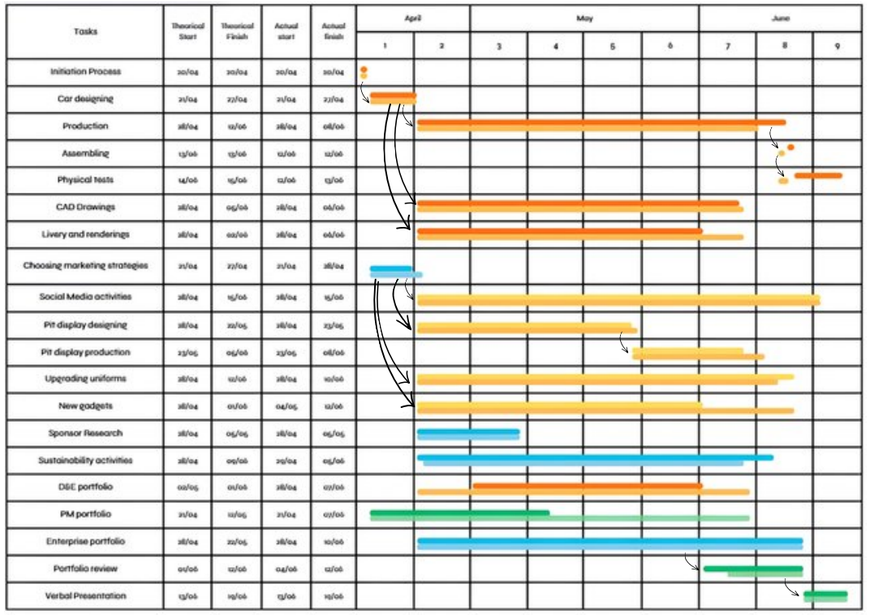
STRATEGIES FOR SCHEDULE DELAYS

After analysing the initial schedule, we found it necessary to **shorten deadlines** and **reduce the gap between the optimistic and pessimistic timelines** to improve the project's chances of success. The revised schedule included a small buffer before the final delivery date, as shown in the Gantt chart below. As a result, we reduced the project duration to **53 days** while maintaining a **98% probability** of completion, leaving a **small margin before the competition deadline**.

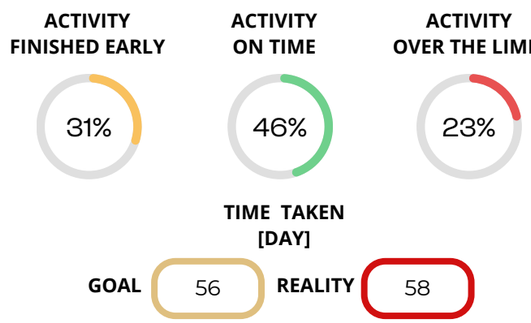


Gaussian curves comparison - Credits: Gemini PRO

GANTT CHART



Thanks to all these implemented systems we were able to predict and use wisely our time and resources and also finish early some of the activities.



Compared to the other phases we had the chance to prepare completely for the national finals while preventing burnout.

RESOURCE MANAGEMENT

Since the previous team in our school had **trouble with expences** and incomes through the school system we decided to optimize our processes and use their technique.
We adopted their **no profit association** since they didn't have anymore member inside the project. This change of ownership helped us remove the inconvenience.

A.S.A. with BANK ACCOUNT

STEM Project Schio

ASA logo Credits: ProioxisRT

After defining the 3 main **bureaucratic figures** (president, vice president and secretary) we took the lead of the association and begun the transfer of our **funds** into the account. This choice was made because the **school** had a **limited spending** budget along with a month **long process** for any kind of purchase.

This way we were able to stay within our timeline for the purchases and have a more work-likely approach with companies, rising our credibility and affidability.

PROS	CONS	SKILL AQUIRED
Greater spending budget	lot of time spent for acquisition	greater management of money
VAT discharged at 11%	more paperwork needed	better understanding of obligations and rights
monitoring of spending more easy	-	actual approach toward taxes and businesses
contractual forms	-	budget management and definition
more credibility as a team	-	-
more indipendence	-	-

Pros vs Cons vs Skills of the ASA account - Credits: Proioxis

SOFTWARE NEEDED

Our team prioritized **cost-efficiency** by utilizing free or organization-**provided software** for all design and simulation tasks. This strategic choice eliminated licensing fees, allowing us to **reallocate the budget** toward the World Finals expenses.

SOFTWARE	PURPOSE
Solidworks	3D modelling - FEM Analysis
Ansys Discovery	CFD Analysis
Autodesk CFD	CFD Analysis
Google Documents - Google sheets	Document Creation
Google Drive - Notion	File Management
Canva Pro	Post Editing Document Design
Whatsapp - Discord	Team communication
WhatsApp - Phone calls - Gmail	Sponsor Communication

Software needed Credits: ProioxisRT

Utilizing free software licenses slashes overhead costs, allowing the team to **redirect precious budget** directly into high-quality car components.

SPONSOR RESEARCH

To secure **more committed sponsors** and make communication and collaboration easier, we decided to focus on the **local area** and seek support from local businesses. As these organisations have a **direct interest** in developing and promoting the local area, they have proved **more willing to support** our project and our initiatives.

EXPENDITURE TRACKING AND COST BENEFIT ANALYSIS

EXPECTED VS ACTUAL EXPENCES

DATE	DESCRIPTION	BUDGET	REAL EXPENSES	FUND PROVIDER

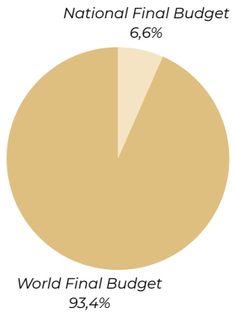
Coloured in light orange there are the actual expences that we had to bear through financial support

Estimated income and expenditure

Actual inflows and outflows over time

BUDGET ALLOCATION

After defining our final budget we decided to find more sponsors who could offer us **services instead of financial** support, in order to reduce to the minimum the actual expences we needed to bear.
This way we were able to use only **6,6% of** our **liquid budget** , preserving the rest for the world final that will occur in October in Singapore.



Liquid budget allocation Credits: ProioxisRT

INCOME STATEMENT

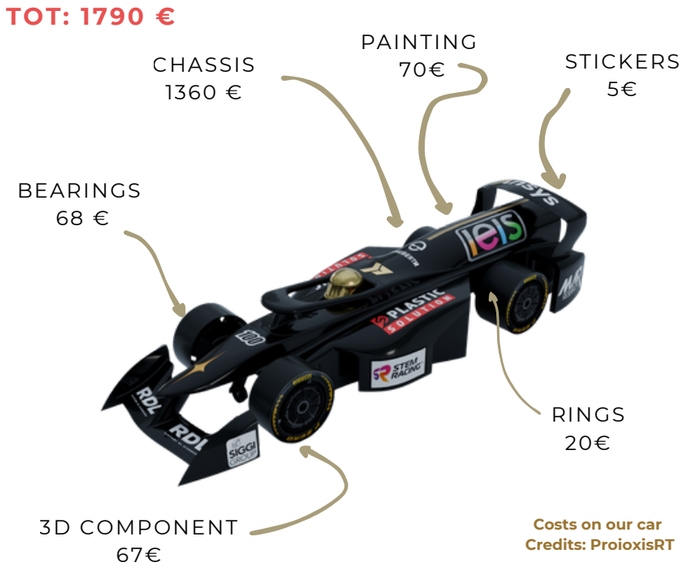
After our change of strategy, made thanks to **Randstad**, we were able to achieve a much **greater results in finding sponsors** that could help us. Instead of spamming every company we found online we began searching for **specific branches** we were interested into.

TOTAL INCOME	31765,00 €
TOTAL EXPENCES	2332,00 €

Income Statement Credits: ProioxisRT

COSTS FOR EACH CAR

Based on treatments and processes our sponsors provided, we were able to **estimate a total cost** for each car competing in the National Finals. This breakdown helped us understand better where **costs are justificated with the quality** needed or if we needed to find something else to improve them.



Costs on our car Credits: ProioxisRT

TEAM MEMBERS

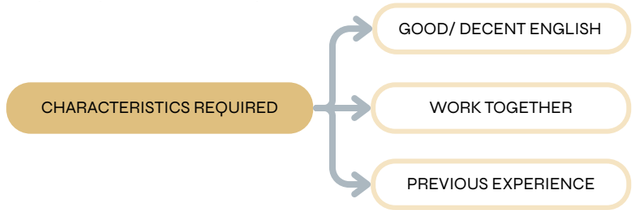
The RACI matrix is a **responsibility assignment chart** used to clarify roles and expectations for project tasks. It ensures that every action item has a designated owner and that **communication** lines are clearly defined.

DEFINITION OF ROLES

- **TEAM LEADER** → Responsible for strategic management, operational coordination and compliance with regulations
- **BUSINESS LEAD** → Responsible for fundraising, financial management and business plan development
- **DOCS LEAD** → Responsible for drafting, reviewing and finalising all technical and operational documentation
- **CAR DESIGNER** → Responsible for drafting, reviewing and finalising all technical and operational documentation
- **PILOT** → Manages team branding and works to improve response times
- **MARKETING LEAD** → Head of corporate communications, corporate identity and social media management

CHOICE OF THE TEAM MEMBERS

Once the roles were decided we focused on **choosing the right person for each role**. Firstly, we choose people between the rookies of the school based on their abilities: we searched for people who can **work well together** and **speak decently english**. Another characteristic we were searching for but wasn't necessary was the previous partecipation to the competition.



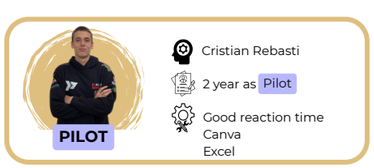
This led to a second phase for the selection of the team: we divided the **tasks** and each person had a certain amount of time to complete it. By doing this we were able to see the **willingness** of people and the work **time organisation**.
After this selection we were able to decide the below sohowed team members:













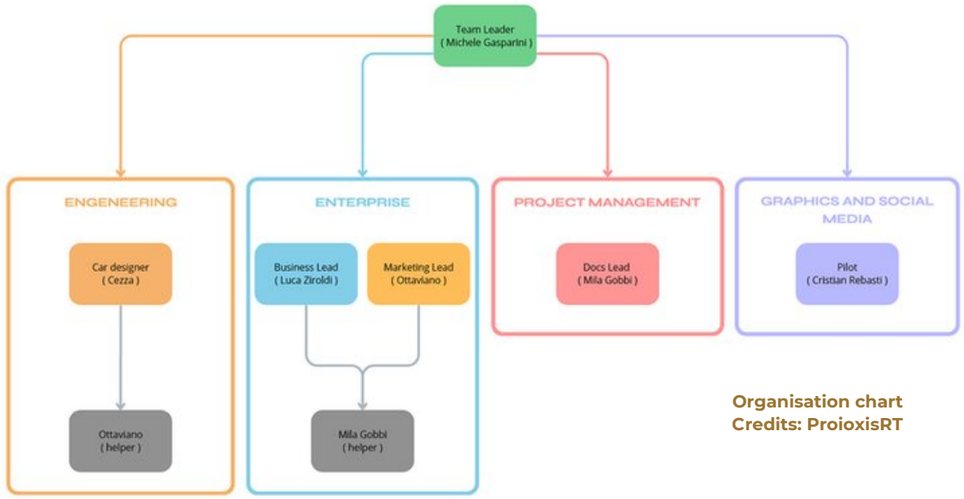
For this phase we decided to make **some changes** inside the team in order to give **continuity** to the project inside the school. This is one of the main reason we decided to implement **three younger and promising students**.
Thanks to this choice we were able to teach them all our **knowledge** and prepare them for future competitions while carrying our name high.

TEAM STRUCTURE

Our team follows an integrated **hierarchy** where every role is interconnected. The Team Leader synchronizes the Car Designer's **technical** specs with the Pilot's **performance** data, while the Business and Documents leads ensure these **innovations** are **funded** and recorded. This collaborative structure ensures that engineering decisions are always supported by available resources and real-world testing.

OPERATIONAL ORGANIZATION AND COMMUNICATION FLOW

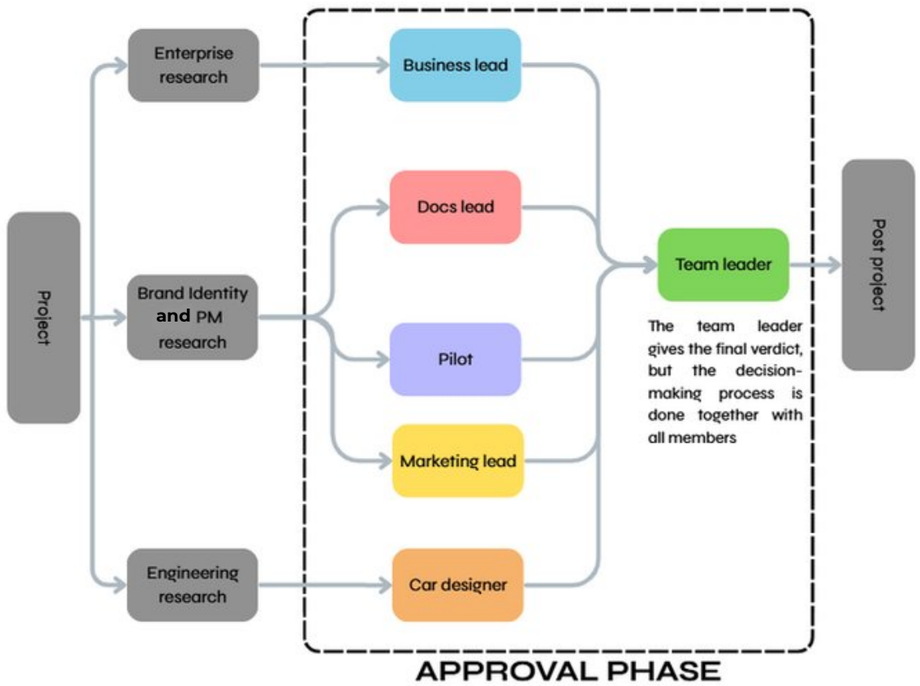
Our Organization Chart uses the Team Leader to bridge all the branches without complications. Communication follows vertical **goal-setting** and cross-functional **data sharing** for total alignment.



Organisation chart
Credits: ProioxisRT

RESEARCH AND TEAM INTEGRATION

While the operational organisation follows a vertical pattern, research path is an **horizontal pattern** that sees the Team Leader as a collector of ideas and all the members on the **samel level** both for decision and researching phases.



Team integration chart
Credits: ProioxisRT

RACI

The RACI matrix is a **responsibility assignment chart** used to clarify roles and expectations for project tasks. It ensures that every action item has a designated owner and that **communication** lines are clearly defined.

- **R = RESPONSABLE** = The person or sub-team who actually executes the work to complete the task. They are "hands-on."
- **A = ACCOUNTABLE** = The person who has the final authority and is ultimately answerable for the correct and thorough completion of the task. They approve the deliverable.
- **C = CONSULTED** = The experts whose input, opinions, or specialized knowledge are needed before or during the task. Communication is two-way.
- **I = INFORMED** = People who need to be updated on progress or outcomes after the task is completed. Communication is one-way.

RACI chart
Credits: ProioxisRT

	TEAM LEADER	CAR DESIGNER	DOCUMENTS LEAD	BUSINESS LEAD	PILOT	MARKETING LEAD
Design of the car	A	R	I	I	I	C
CFD-FEM analysis	A	R	I	I	I	C
Technical drawings	A	R	I	I	I	C
Plan the work	R	C	C	A	C	C
Define the roles	R	C	C	A	C	C
Social Media	C	I	I	A	R	I
D&E Document	A	R	A	C	I	R
Enterprise Document	A	I	C	R	A	I
PM Document	C	I	R	A	A	I
Communication with sponsors	A	I	C	R	I	I
Budgeting	R	I	I	A	I	I
Team branding	C	I	I	A	R	I
Pit display	C	A	I	I	R	I
Gadget obtaining	I	I	A	R	A	I
Car Assembly	C	A	A	A	R	A
Team Uniforms	C	I	I	A	R	I

COMMUNICATION

Drawing on insights from previous years, we recognized the **critical importance of communication** within the project. Consequently, to drive improvement in this area, we have established **specific strategic goals**.

GOALS

- STRONG RELATIONSHIPS WITH OUR PARTNERS
- CLEAR COMMUNICATION
- KEEP TRACK OF OUR IMPROVEMENTS

HOW TO ACT?

Keep stakeholders informed of progress made, changing communication based on the priority previously assigned (page 1)

STAKEHOLDERS	TOOLS	FREQUENCY	DATA
Team members		Daily	Status of the devel. - Finances - Schedule - Project data - Scope
Professors		Weekly	Development status
[redacted]		Monthly	[redacted]
		Monthly	

Tab of communications schedule- Credits: ProioxisRT

We implemented a **differentiated communication plan,** matching tools and update frequencies **to specific stakeholder** requirements.
The following table summarizes our standard operating protocol. However, these schedules were not rigid; they were subject to **contextual adaptation**.
A prime example occurred with our manufacturing suppliers: during **critical production windows**, our interaction frequency shifted **from monthly to weekly** to mitigate risks and monitor progress closely.

TOOL	PRO	CONS	IDEAL USE
	Very direct	Not always available	First impression, quick and imminent informations
	Very popular and quick	Can be misunderstood	Ideal for exchanging ideas and making quick decisions
	Easy to organise comprehensively	Technical issues	Ideal for collaborating online during calls
	There are many customisable tools	It takes a bit of time to get the hang of how it works	It is ideal for bringing together notes, databases and scheduling in a single platform

Pros and cos for tools chart - Credits: ProioxisRT

RISKS

The **probability and impact matrix** (PIM) allows the team to visually **categorize threats** into Low (Brown), Medium (Yellow), and High (Red) priority levels, ensuring that resources are allocated efficiently to **mitigate the most critical issues** first.
Following the risk analysis, we considered how best to address these risks: whether to accept them, try to avoid them, or minimise their potential impact on our project.

= Low-threat: 0 - 4
= Medium-threat: 4.1 - 8
= High-threat: 9 - 16

RISK	RISK VALUE	IMPACT	PROBABILITY	RESPONSIBILITY	LEVEL OF CONTROL	PROBLEM OCCURRENCE COEFF.	SOLVING
[redacted]	0-16	0-4	0-4	/	0-10	0-16	[redacted]
	9	3	3	BUSINESS LEAD	6	1,3	
	2	2	1	DOCS LEAD - BUSINESS LEAD	4	0,5	
	4	4	1	TEAM LEADER	3	1,3	
	9	3	3	BUSINESS LEAD	5	1,8	
	8	4	2	TEAM LEADER	6	1.3	
	4	4	1	TEAM LEADER	6	0.7	
	12	4	3	CAR DESIGNER	8	1.5	
	16	4	4	CAR DESIGNER	10	1.6	
	12	4	3	CAR DESIGNER	10	1.2	

Risk evaluation - Credits: ProioxisRT

Logically, the best solution would be to eliminate the possibility of them occurring altogether, but it is clear that in most cases all we can do is **reduce the likelihood of them happening** through preventive measures and/or mitigate the effects they might have. In our case, we chose to **analyse each medium or high-risk** individually, in order to devise strategies that would allow us to feel confident and prepared for any eventuality, because when problems arise, the whole team and the entire project are affected. The table below illustrates our **risk assessment** and the **solutions adopted** for each of them.

RISK	TYPE	Positive or negative	AREA AFFECTED	RESPONSE	RESPONSIBILITY	SOLUTION
[redacted]	Financial	negative	Resources	Mitigate	BUSINESS LEAD	[redacted]
			Quality	Accept		
	Financial	negative	Resources	Avoid	BUSINESS LEAD	
	Time	negative	Timing	Avoid	TEAM LEADER	
			Scope	Mitigate		
	Manifacturing	negative	Quality	Accept	CAR DESIGNER	
			Timing	Mitigate		
	Manifacturing	negative	Quality	Accept	CAR DESIGNER	
			Timing	Mitigate		
	Assembling	negative	Quality	Avoid	CAR DESIGNER	
			Scope	Transfer		

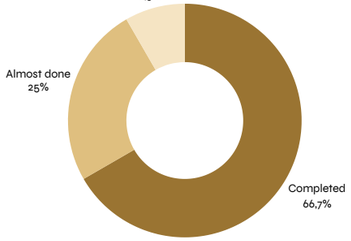
Risks management study - Credits: ProioxisRT

KPI DEFINITION

As we already described on the first page, we used the **S.M.A.R.T. system** to identify the **KPIs** by defining for each deliverable specific strategies and parameters. By doing this we were able to find the areas which needed **improvement**.

AREA	TASK	PARAMETER	TARGET	RESULTS	PERCENTAGE
Portfolios	D&E	Pages done	11	11	**100%**
	PM	Pages done	6	6	**100%**
	Enterprise	Pages done	12	12	**100%**
Car	Checkings	Weight	48.00 g	49.00 g	**98%**
		Drag	0.12	0.13	**92%**
		Time	1.100 s	1.150 s	**96%**
	Painting	/	10 g	9.7 g	**100%**
	Assembling	/	Done	Done	**100%**
Marketing	Social Media	Views	100 000	241 619	**> 100%**
		Followers	1000	693	**69%**
		Likes	3500	3700	**> 100%**
Business	Budget	Capital	5000 €	5000 €	**100%**

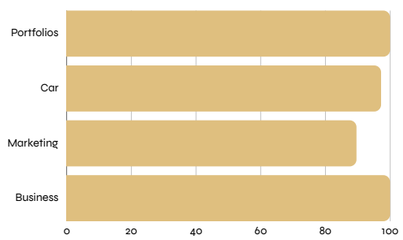
KPI chart - Credits: ProioxisRT



Based on the KPI chart we were able to define our **next steps** and monitor every aspect of our project. Combining the **trend** of each task with the **stressometer** we implemented, we were able to **intervene** and **help** the teammates with difficulties.

This approach allowed us to **complete** the **tasks** of each field with a percentage greater than 90% **a week before** the deadline.

This method has proven to be **effective** especially thanks to the **status reports** and **update** calls we carry out every Sunday.



% after intervention Credits: ProioxisRT

SIGN-OFF PROCEDURE

The approval process is formed by **4 phases**. The work needs to be presented to the **responsible** and approved before receving the approval from the **team leader** and then from the **whole team**. If one of these three don't approve the work needs **adjustments** otherwise it gets **definetely approved.**

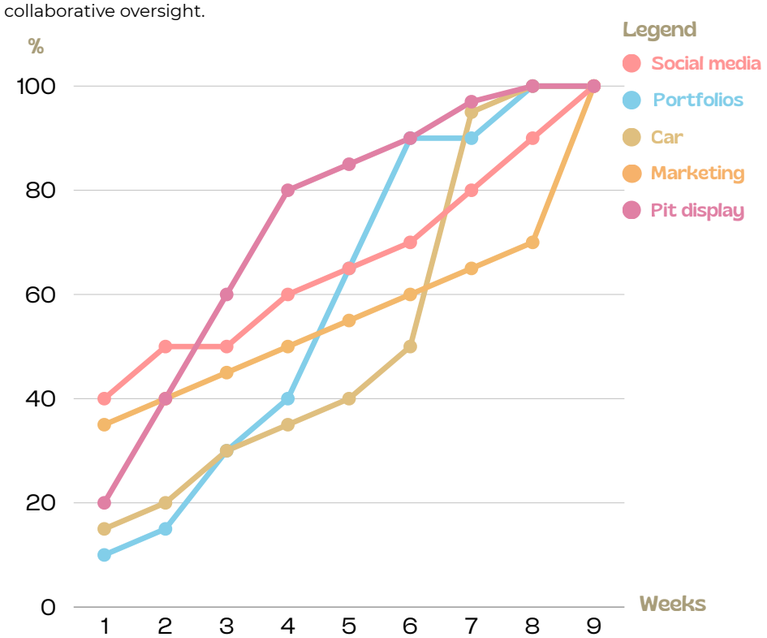


IN-GROUP MONITORING

[redacted]

WEEKLY UPDATE CALLS

Weekly update calls for the project provide a **streamlined forum** for technical synchronization and real-time troubleshooting. These brief sessions allow the team to **bridge design gaps** between subsystems, ensuring that the vehicle's development stays on track and **deadlines are met** through consistent, collaborative oversight.



Status Reports - Credits: ProioxisRT

Weekly update calls helped us create a **reliable rhythm** that keeps everyone aligned, instantly **highlighting problems** before they delay the project.
By replacing scattered messaging with a dedicated moment for confront, the team ensures **clear accountability** and seamless **collaboration** across all sub-departments.

STATUS REPORTS

Our ongoing Status Reports utilize dynamic tracking to explicitly document tasks signed off via the 'Approved Level' metric. By monitoring weekly progress, we **actively highlight areas of concern and identify scope creep early**. Whenever tasks overrun, this data immediately triggers a clear action plan to reallocate resources and maintain deadlines.

	STATUS OF THE PROJECT					
TASK	STATUS	STARTED LEVEL [%]	COMPLETION LEVEL [%]	COMPLETION LEVEL - WEEK BEFORE [%]	APPROVED LEVEL [%]	
D&E	On going	100,00%	83,33%	0,00%	66,67%	
PM	COMPLETED	100,00%	100,00%	3,57%	71,43%	
ENTERPRISE	On going	100,00%	76,92%	0,00%	66,67%	
PROJECTING	On going	100,00%	62,50%	60,71%	100,00%	
PRODUCTION	COMPLETED	100,00%	100,00%	0,00%	100,00%	
BUY COMPONENTS	COMPLETED	100,00%	100,00%	0,00%	100,00%	
ASSEMBLING	COMPLETED	100,00%	11428,57%	0,00%	100,00%	
WEB SITE	COMPLETED	100,00%	100,00%	100,00%	100,00%	
UNIFORM	COMPLETED	100,00%	100,00%	0,00%	100,00%	
SOCIAL-MEDIA	On going	100,00%	25,00%	0,00%	0,00%	
LIVERY	On going	100,00%	25,00%	25,00%	0,00%	
RENDERING	On going	100,00%	25,00%	25,00%	100,00%	
AGENCY	COMPLETED	100,00%	100,00%	50,00%	100,00%	
BUDGET	On going	100,00%	56,69%	37,30%	100,00%	

Status Reports - Credits: ProioxisRT

The weekly report enforces a **structured review of progress**, transforming raw team data into actionable insights for better decision-making.
Documenting weekly achievements and blockers creates a **clearer path**, ensuring total alignment and **preventing** critical tasks from slipping through the cracks.

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Status Reports - Credits: ProioxisRT