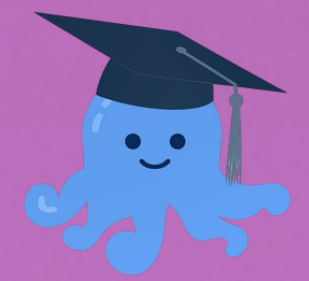


NOVA
RACING



ENTERPRISE PORTFOLIO



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Scoping and Project Schedule



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Project Initiation

The Nova Racing project was formally initiated at our kick-off meeting in September 2025, marking the beginning of our Season 25–26 campaign. The purpose of this meeting was to **align the entire team** around a shared objective and answer the **six fundamental questions of project management** before any work began:

Why compete?

To **represent our school** at the STEM Racing / F1 in Schools national competition and **pursue the highest possible placing**, while developing **real-world skills** in engineering, enterprise, and project management.

Who are we doing the work for?

For **ourselves** as a team, for our **school**, and for the **sponsors** who have invested in our success. We all believe that even if we don't win, the lessons learned, people met and work put in will all stand to us in years to come.

What are the deliverables?

The competition car (designed, manufactured, tested), enterprise portfolio, engineering portfolio, pit display, verbal presentation, digital media presence, and team uniform.

How will we measure success?

Through our competition results, the quality of each deliverable against the marking scheme, and our own satisfaction with the standard of work produced. We also defined success as completing the project **on time, within budget**, and with **no unresolved issues** at submission.

Scope Statement

Our **scope statement** was developed using three inputs: the project charter, the STEM Racing competition regulations (which defined mandatory deliverables and acceptance criteria), and our kick-off meeting inputs. The team reviewed a first draft at a dedicated Monday meeting, discussing and refining each parameter until consensus was reached. The final scope statement was as follows:

Nova Racing - Scope

Season 25–26 STEM Racing Campaign.

The project will run from September 2025 until the final competition date, giving the team an overall project duration of approximately seven to eight months.

Project Objective

The primary objective of the project was to **complete** and **submit all official competition deliverables** by the required deadline, to the best of our ability

In Scope

Our project scope includes the **design, manufacture, and testing of the competition car**, alongside the creation of both the **Enterprise Portfolio** and **Engineering Portfolio**. Also included are the **pit display design** and construction, **verbal presentation** preparation, **team uniform development**, **digital** and social media management, **sponsor acquisition** and relationship management, as well as budget and financial management.

Out of Scope

Activities intentionally excluded from the project scope are **preparation for future competition** seasons, activities not required for the official competition, **physical on-track car testing**, and the development of branded merchandise.

Acceptance Criteria

For any deliverable to be considered complete, it first had to be reviewed by the relevant team lead, either Engineering or Enterprise, before being peer-reviewed by another team member. In addition, all deliverables were required to fully comply with official STEM Racing regulations.

Constraints

The team operates within a budget of approximately **€1,400 (excl. Boston's €3000 non cash sponsorship)** and consisted of **six members** working across an eight-month project window. Additional constraints included **limited access to the school workshop (for pit display)** outside standard hours and **reduced team availability** during **school examination** periods in November/December and February/March.

Key Deliverables

The project's main deliverables included **two competition cars** (a primary and reserve vehicle), the **Enterprise Portfolio, Engineering Portfolio, pit display, verbal presentation**, digital media content, team uniform, and sponsorship prospectus.

Assumptions

The project plan assumed that competition regulations would remain unchanged after publication, **sponsor funding would be received** on schedule, and all team members would remain **available and committed** for the duration of the campaign.

Work Breakdown Structure

A **Work Breakdown Structure** breaks a project into smaller, bite-sized chunks of work. It organises everything that needs doing into a **clear hierarchy**, making the project **easier to plan**, assign, and track.

Preliminary Timeline

Before developing our detailed schedule, we mapped the key milestones onto a **linear preliminary timeline** to establish the overall shape of the project. This gave the team a shared understanding of the **major phases and deadlines** in the project. This preliminary timeline identified two critical constraints that helped our scheduling decisions. First, the **school exam periods** in November/December and February/March would significantly reduce available time, meaning intensive engineering and portfolio work needed to be front-loaded or scheduled around these times. Second, **manufacturing was dependent on a finalised CAD design**, establishing this as a hard dependency that could not be worked around

Nova Racing Season 25–26 — Work Breakdown Structure				
WBS ID	Level	Work Package	Deliverable	Activity
1.0	1	ENGINEERING		
1.1	2	Engineering	Car Design	
1.1.1	3	Engineering	Car Design	Research aerodynamic concepts (Coandă, Venturi, Magnus)
1.1.2	3	Engineering	Car Design	Initial CAD concept in SolidWorks
1.1.3	3	Engineering	Car Design	CFD simulation — iteration 1
1.1.4	3	Engineering	Car Design	Design refinement based on CFD results
1.1.5	3	Engineering	Car Design	CFD simulation — iteration 2
1.1.6	3	Engineering	Car Design	Final CAD design sign-off
1.1.7	3	Engineering	Car Design	Regulation compliance check
1.2	2	Engineering	Car Manufacturing	
1.2.1	3	Engineering	Car Manufacturing	CNC toolpath programming
1.2.2	3	Engineering	Car Manufacturing	CNC machining — primary car
1.2.3	3	Engineering	Car Manufacturing	CNC machining — reserve car
1.2.4	3	Engineering	Car Manufacturing	3D printing of auxiliary components
1.2.5	3	Engineering	Car Manufacturing	Hand finishing and surface preparation
1.2.6	3	Engineering	Car Manufacturing	Paint and livery application
1.2.7	3	Engineering	Car Manufacturing	Assembly (wheels, axles, bearings)
1.2.8	3	Engineering	Car Manufacturing	Quality control inspection
1.3	2	Engineering	Car Testing	
1.3.1	3	Engineering	Car Testing	Initial track test runs
1.3.2	3	Engineering	Car Testing	Performance data analysis
1.3.3	3	Engineering	Car Testing	Adjustments and final test runs
1.3.4	3	Engineering	Car Testing	Final car sign-off
2.0	1	ENTERPRISE		
2.1	2	Enterprise	Sponsorship	
2.1.1	3	Enterprise	Sponsorship	Create sponsorship prospectus
2.1.2	3	Enterprise	Sponsorship	Identify and contact target sponsors
2.1.3	3	Enterprise	Sponsorship	Negotiate and confirm partnerships
2.1.4	3	Enterprise	Sponsorship	Deliver ROI activities to sponsors
2.2	2	Enterprise	Enterprise Portfolio	
2.2.1	3	Enterprise	Enterprise Portfolio	Plan portfolio structure and page allocation
2.2.2	3	Enterprise	Enterprise Portfolio	Write content for each page
2.2.3	3	Enterprise	Enterprise Portfolio	Design and layout (graphic design)
2.2.4	3	Enterprise	Enterprise Portfolio	Peer review and editing
2.2.5	3	Enterprise	Enterprise Portfolio	Final sign-off and print
2.3	2	Enterprise	Engineering Portfolio	
2.3.1	3	Enterprise	Engineering Portfolio	Document design process and decisions
2.3.2	3	Enterprise	Engineering Portfolio	Document manufacturing process
2.3.3	3	Enterprise	Engineering Portfolio	Compile testing data and analysis
2.3.4	3	Enterprise	Engineering Portfolio	Layout, review, and print
2.4	2	Enterprise	Pit Display	
2.4.1	3	Enterprise	Pit Display	Conceptual design and sketches

Gantt Chart

Our **Gantt chart** was the primary scheduling tool used throughout the project. It put the WBS activities into a visual timeline that every team member could reference at a glance.

The Gantt chart was **built in stages**:

Activity listing: All WBS activities were laid out as rows, grouped by team + logistics added extra (Engineering, Enterprise, Logistics).

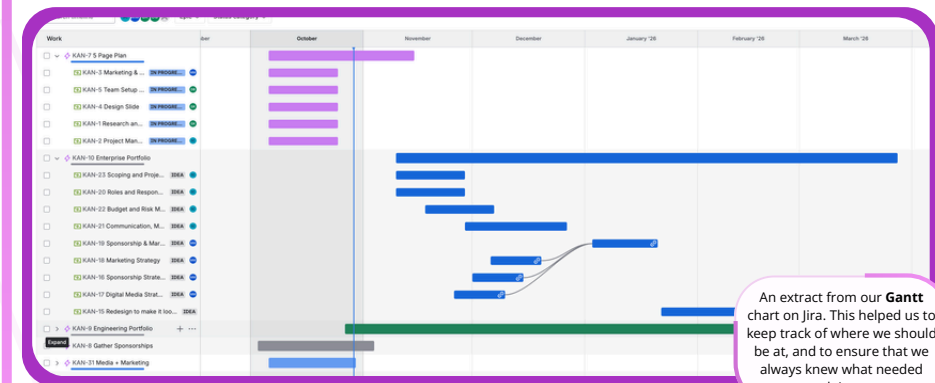
Duration estimation: Each activity was given a time estimate based on team discussion, past experience, and comparison with timelines published by previous competition teams. Estimates were validated by the relevant task owner.

Baseline vs. Actual tracking: We maintained both a baseline schedule (set at the start of the project) and an actual schedule (updated fortnightly). By overlaying the two, we could visually **identify schedule variance** and take **corrective action** before delays compounded.

The Gantt chart included the following key features:

- **All 40+ WBS activities** listed with their assigned team member
- Duration bars showing the planned start and end date for each activity
- Dependency arrows connecting linked tasks
- **Exam period blocks** marked as reduced-capacity periods
- One-week submission buffer built in before the competition date

The Gantt chart was maintained in **Jira** and reviewed at every Monday meeting. When schedule variance was detected, Darragh was in charge of finding the cause within the team and determined whether corrective action was needed, such as reallocating resources from high-float (not time necessary) activities to the critical path (time necessary)



An extract from our Gantt chart on Jira. This helped us to keep track of where we should be at, and to ensure that we always knew what needed doing.

Roles and Responsibilities



Our Organisational Structure

From the beginning of the Nova Racing project, we quickly realised that a **well-defined team structure** would be essential if we wanted to **compete at a high level**. At our first formal meeting, we established a clear team hierarchy to ensure we stay **organised** and ensure **accountability**. Our structure is built around a project-based framework, with two divisions: an **Engineering Team** and an **Enterprise Team**, both reporting to our Project Manager (part of the enterprise team). This two-teamed approach mirrors real-world motorsport organisations, allowing for both the technical and commercial job roles involved in the project to operate in parallel.

Deliverable / Activity	Darragh (PM)	Harry (Manuf.)	Matthew (Design)	Gilles (Research)	Sean (Business)	Joe (Graphic)
Project Schedule & WBS	A	I	I	I	I	I
Sprint Planning (Jira)	R/A	C	C	C	C	I
Car CAD Design	I	C	R/A	C	I	I
CFD & Aerodynamic Research	I	I	C	R/A	I	I
CNC Machining & 3D Printing	I	R/A	C	C	I	I
Car Assembly & Quality Control	C	R/A	R	C	I	I
Budget & Financial Tracking	C	I	I	I	R/A	I
Sponsor Outreach & Relations	C	I	I	I	R/A	C
Enterprise Portfolio Content	C	C	C	C	C	R
Portfolio & Display Design	I	I	I	I	C	R/A
Social Media & Marketing	C	I	I	I	C	R/A
Pit Display Construction	C	R	C	I	A	R
Verbal Presentation Prep	R/A	R	R	R	R	R
Regulation Compliance	A	C	R	C	I	I
Risk Mgmt. (Supernova Protocol)	R/A	C	C	C	C	I

We planned out and created a **RACI Matrix** using Google Sheets. This was changed over time as things were added/edited

To ensure nothing went under the radar or was skipped over, we implemented a **primary and secondary role system**. Each member holds a **lead role** aligned with their **core strengths** and, importantly to us, **what they wanted to do**. Each member also had a supporting role in another area. This structure provides built-in redundancy as if a team member is unavailable or overloaded, their secondary counterpart can step in seamlessly. It also provides a valuable second perspective on every deliverable, reducing the risk of errors going unnoticed. This became **very useful** when one of our members, **Joe**, got very **sick for nearly two weeks**

Using Technology to Stay Organised



Jira became the backbone of how we tracked who was doing what. We set up a shared board everyone could see, regardless of whether they were on the engineering or enterprise side, with every task tagged to a primary owner and their secondary counterpart looped in so nothing fell through the cracks. Darragh ran our weekly meetings off the dashboard, which meant **meetings were less about chasing updates** and more about actually solving problems. It also gave us a practical way to apply our RACI thinking, a glance at any ticket showed who was responsible, who needed to sign off, and who just needed to be kept in the loop. Once a task was on the board with a name attached, there was no ambiguity about ownership.

Team Members & Role Definitions

Darragh Bardon
-Project Manager-



Primary Role: Project Manager | Secondary Role: Marketing Support
Darragh, as the project manager, is responsible for the overall coordination and delivery of the Nova Racing project. He leads and organises weekly, sometimes bi-weekly meetings, maintains the project schedule in Jira, and ensures all team members remain aligned with deadlines and deliverables. His responsibilities include defining the project scope, managing the Work Breakdown Structure (WBS), tracking progress via Jira dashboards, arranging transport and logistics for events.
Key Skills: Jira, Canva, SolidWorks, Onshape, TikTok,

Matthew McElroy
-Manufacturing Engineer-



Primary Role: Manufacturing Engineer | Secondary Role: Design Support
Matthew is primarily responsible for ensuring our CAD designs get made. His role involves sourcing all required components, organising CNC-machining and 3D-printing, and most importantly ensuring the manufactured car meets both competition regulations and our desired performance targets. He works in close collaboration with our Design Engineer (Harry) helping with CAD mock-ups and ensuring we get a clean, super-lightweight design.
Key Skills: SolidWorks, Fusion 360, Onshape, 3D printing

Gilles Kearney
-Research Engineer-



Primary Role: Research Engineer | Secondary Role: Graphic Design Support
Gilles leads all research and development activities for Nova Racing. His passion for physics, F1 and applied science drives the technical innovation behind our car design. He is responsible for researching aerodynamic concepts such as the Coandă Effect, Venturi Effect, Magnus Effect, and downforce optimisation, and translating these into actionable design parameters. Gilles ensures that our R&D efforts are aligned with what is needed to make our car as fast as possible, and his findings directly inform the decisions made by our Design and Manufacturing Engineers (Harry and Matthew).
Key Skills: SolidWorks, Fusion 360, Onshape, CFD interpretation

Harry Dowling
-Design Engineer-



Primary Role: Design Engineer | Secondary Role: Research Support
Harry leads the CAD design process and is responsible for ensuring that every area of our car complies with the STEM Racing regulations. He works closely with our Research Engineer (Gilles) on Computational Fluid Dynamics (CFD) testing and iterates on prototypes based on simulation results. Harry responsibilities also extend to the visual aesthetics of the car. He builds, tests, and refines prototypes using the aerodynamic concepts identified during our research phase.
Key Skills: SolidWorks, Fusion 360, Photoshop, CFD analysis, regulation compliance

Sean Cahill
-Business Manager-



Primary Role: Business Manager | Secondary Role: Project Support
Sean manages all financial and commercial operations for Nova Racing. Using his experience from running his own company, Studytok. Sean is responsible for sponsor outreach, budget management, procurement, and ensuring healthy cash flow throughout the project lifecycle. He maintains our financial records in Google Sheets, sources at least two competing suppliers for every purchase, and manages our tiered sponsorship packages (Bronze through Platinum). His fiscally responsible nature ensures that every euro spent delivers maximum value toward our competitive objectives.
Key Skills: SolidWorks, Onshape, Jira, Google Sheets, financial modelling, negotiation

Joe Tuohy
-Graphic Designer-



Primary Role: Graphic Designer | Secondary Role: Enterprise Portfolio Support
Joe is responsible for all visual designs and brand identity across the Nova Racing project. Using mainly Canva, he transforms complex engineering and business concepts into what we consider professional and visually compelling graphics. His work spans the enterprise portfolio, pit display design, social media content, sponsor materials, and car livery. Joe maintains strict adherence to our brand guidelines, ensuring consistency in colour (supernova-inspired palette), typography, and logo usage across every deliverable.
Key Skills: SolidWorks, Fusion 360, Canva, Jira, brand design, visual communication

Responsibility Assignment (RACI) Matrix

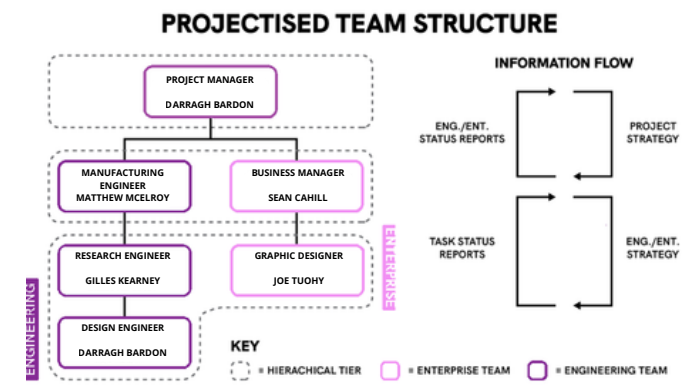
To ensure complete clarity over task ownership and decision-making authority, we developed an **RACI matrix** covering every major deliverable. An RACI matrix is a project management tool used to **clearly define roles and responsibilities** for tasks, decisions, or deliverables within a project. RACI stands for **Responsible** (who actually does the work), **Accountable** (who owns the outcome), **Consulted** (provides their input), and **Informed** (kept up to date).

How We Assigned Responsibilities

We did **not assign tasks arbitrarily** as we all agreed that if **people liked their role**, it **wouldn't feel like work** and they would be more productive. After establishing our roles, we developed a tiered assignment system where tasks were first categorised by focus area (engineering or enterprise), then matched to individuals based on three criteria considered simultaneously: the **expertise required**, the **team member's current workload**, and the **priority of the task**. Tasks were only assigned when all three factors aligned, which kept the workload balanced across the team and prevented any single member from becoming a bottleneck.

Communication Framework

Communication is key in a project like this. We used **Snapchat** for day-to-day coordination, in and outside of school, and **Microsoft Teams** (formal file sharing, status reports, and strategy discussions). We organised structured meetings every Monday, with occasional Friday check-ins during high-intensity phases. **Minutes were recorded at every meeting** to maintain a traceable record of decisions and action items, ensuring we could always refer back to what was said, agreed, and planned. Our communication flow follows the organisational hierarchy we set out at the beginning, the Engineering and Enterprise teams report status updates to the Project Manager, who monitors progress and communicates direction back down. Cross-team visibility is maintained through our shared Jira board, where every task is visible to all members regardless of division.



Budget and Risk Management



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NOVA RACING



Financial Strategy

From the start, we knew that **sound financial management** would be just as critical to our success as engineering performance. With limited resources and a fixed competition deadline, **every euro had to be allocated deliberately**. Sean (Business Manager) took overall ownership of the team's finances, conversing often with the engineering team to see what was needed.

Our financial strategy was built on **three principles**:

Plan Conservatively - Track Rigorously - Spend Transparently

Budget Strategy

Before approaching any sponsors or committing to purchases, we needed to understand the full cost of competing. We used a combination of **two estimation techniques** to arrive at our **Budget at Completion (BAC)**:

Parametric estimation: We researched the costs incurred by previous Irish F1 in Schools teams competing at regional and national level, adjusting for our specific requirements (six team members, travel to nationals, pit display materials, manufacturing). This produced an initial estimate of approximately €3,800.

Three-point estimation: To stress-test our parametric figure, we applied a beta distribution formula using optimistic (€2,900), most likely (€3,800), and pessimistic (€5,200) cost scenarios:
 Estimated Cost = (Optimistic + Most Likely + Pessimistic) ÷ 3

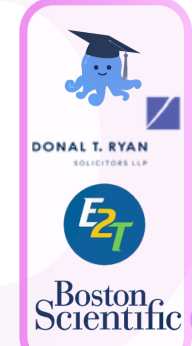
$$\frac{2,900 + 3,800 + 5,200}{3} = \text{€}3967$$

This confirmed our parametric estimate and gave us confidence in setting a **BAC of €4,100**, which included a small management reserve buffer of approximately 4% to absorb unexpected cost increases without requiring additional fundraising. This budget was built on the belief that we would have to cover the CNC costs ourselves

Revenue Strategy

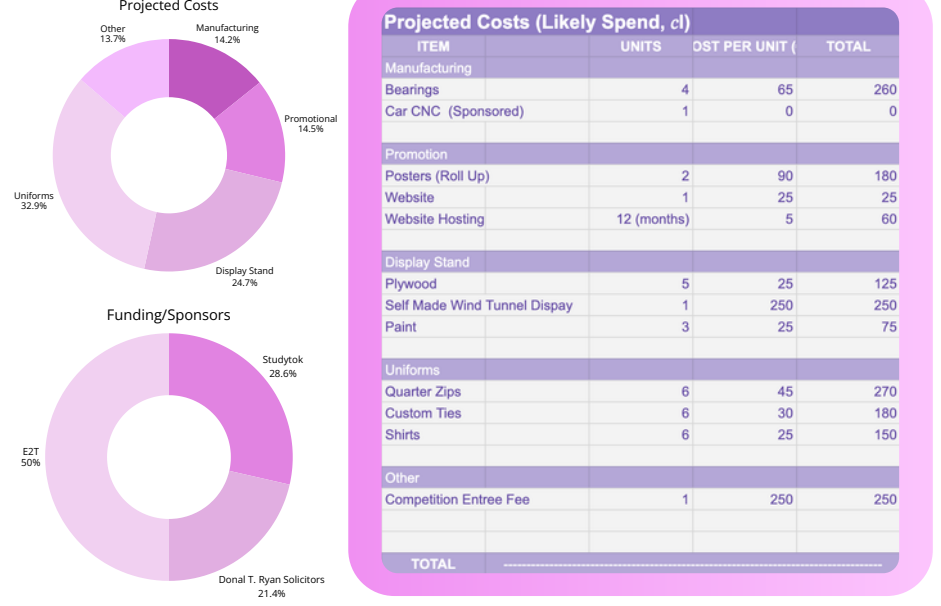
Our revenue strategy centred on **securing sponsor partnerships** that **aligned with the Nova Racing brand**. Rather than relying on a single large sponsor, we deliberately **diversified our income** across multiple partners to **reduce dependency risk**. Revenue was planned and tracked as below.

Funding / Sponsors	
Sponsor	Amount (€)
Studytok	400
Donal T. Ryan Solicitors	300
E2T	700
TOTAL	1400



Expenditure Budget

We structured our **expenditure budget** around **deliverable categories**, mirroring our Work Breakdown Structure. This allowed us to see at a glance how much of the budget was allocated to each area of the project and prevented any single deliverable from consuming a disproportionate share of resources.



Accounting Methods & Financial Tracking

All financial activity was tracked in a **dedicated Google Sheets workbook** maintained by Sean and accessible to the entire team. The workbook contained four linked tabs:



Revenue Tracker: Recorded all incoming funds, including the sponsor name, date received, amount, and payment method. Each entry was reconciled against our bank account or school account to ensure accuracy.

Expenditure Tracker: Logged every purchase with the date, description, category (matching our expenditure budget categories), amount, purchaser, and approval status. No purchase was made without prior approval, our expenditure approval process (below) ensured this discipline.

Budget vs. Actual Dashboard: Used conditional formatting to automatically highlight variances. Cells turned green when actual spend was within 10% of planned, amber when between 10-25% over, and red when exceeding 25% of the planned figure. This visual system made it immediately obvious if any category was trending over budget.

Cash Flow Forecast: Plotted **expected inflows** (sponsor payments) against **projected outflows** (planned purchases) on a monthly timeline. This allowed us to anticipate periods where cash on hand might be low and proactively push sponsor invoicing or **delay non-critical purchases**. By front-loading our revenue collection and scheduling major expenses (pit display, uniforms, manufacturing) for periods with healthy cash reserves, we avoided ever falling into deficit.

Expenditure Approval Process

To maintain financial discipline, we implemented a **formal approval process** for all expenditure:

- 1. Request** - The team member identifies a required purchase and submits the item, estimated cost, and justification to Sean via the WhatsApp group or at the Monday meeting.
- 2. Approval** - For purchases under €100, Sean can approve independently. For purchases of €100 or above, both Sean and Darragh must approve jointly. All approvals are recorded in the Expenditure Tracker with the approver's initials and date.
- 3. Sourcing** - Sean obtains at least two competing quotes for every purchase exceeding €50. For items under €50, a single quote is acceptable but must still be recorded.
- 4. Purchase & Receipt** - Once approved, the purchase is made.

This process ensured that no money was spent impulsively, that we consistently sought value for money, and that a complete paper trail existed for every transaction.

Cost & Revenue Variance Analysis

At each fortnightly status report, Sean calculated **cost variance** and **revenue variance** to **monitor financial health**:
Cost Variance (CV) = Planned Expenditure to Date – Actual Expenditure to Date

A positive CV meant we were under budget; a negative CV meant we were over budget.

Revenue Variance (RV) = Actual Revenue to Date – Planned Revenue to Date

A positive RV meant we had collected more funds than expected; a negative RV signalled a shortfall requiring attention.

These figures were included in the Resources section of every status report, giving sponsors and the school coordinator ongoing confidence that their contributions were being managed responsibly.

Risk Identification

Risk management was **embedded into our project from the kick-off meeting**. During our initial brainstorm, the full team **identified potential risks**, with Darragh documenting every suggestion. We then refined this list using a structured approach: each risk was **categorised by type** (Technical, Financial, Schedule, External)
 Our final risk register contained some of the following identified risks:

Possible Problem	Ranking	Response/Prevention
Loss of important files, CAD	5	Everything is stored online in Teams as well as having local versions on each role manager's device
Failed to Raise Enough €	4	Every resource needed is checked for with atleast 2 suppliers ensuring we keep our expense low. Uniforms are a last expense ensuring we have the most important expense bought
Team Member Leaves	4	The team is not entirely reliant on any one person for anyone thing. By having people work together on tasks through our team structure, it ensures that more than one person are familiar with any task
Uniform Sizes Incorrect	2	Double check sizings. Order early so we have the chance to return/order again

Each risk was assessed using a **Probability and Impact Matrix (PIM)**. We scored every risk from **0.0 to 1.0** for the likelihood of it occurring (**Probability**) and the severity of its consequences (**Impact**). The product of these scores produced a PIM rating, which we classified into three threat levels:

- Low threat:** 0.00–0.20 PIM rating
- Medium threat:** 0.21–0.40 PIM rating
- High threat:** 0.41–1.00 PIM rating

Response Planning — The Supernova Protocol

Whilst we hoped for the best, we knew it would be naive to not prepare for the worst. Following this thinking we developed a system we call **'The Supernova Reaction Protocol'**. A play on a supernova explosion. This system worked by firstly defining each possible problem and rating them from **1-5** on how badly each problem could affect the project, with **1** being, **little negative effect**, and **5**, being a **major negative**.

This helped us in multiple ways.

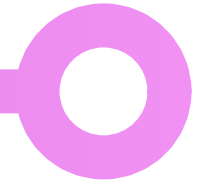
- It helped us to see what was most critical to the projects completion which helped us focus our time on what would make the greatest difference in moving the project forward
- It allowed us to **develop response plans** in the event that any of these happen, ensuring we are never on the back foot and are always moving forward.

Supernova Reaction Protocol		
Possible Problem	Ranking	Response/Prevention
Loss of important files, CAD	5	Everything is stored online in Teams as well as having local versions on each role manager's device
Failed to Raise Enough €	4	Every resource needed is checked for with atleast 2 suppliers ensuring we keep our expense low. Uniforms are a last expense ensuring we have the most important expense bought
Team Member Leaves	4	The team is not entirely reliant on any one person for anyone thing. By having people work together on tasks through our team structure, it ensures that more than one person are familiar with any task
Uniform Sizes Incorrect	2	Double check sizings. Order early so we have the chance to return/order again
Verbal Presentation "Freeze"	2	Practices after school in the run up to the competition, ensuring everything is known inside-out

Risk Management



Boston Scientific



The Supernova Reaction Protocol - Expanded

Whilst we hoped for the best, we knew it would be naive not to prepare for the worst. Following this mindset, we developed a system we call the Supernova Reaction Protocol, a name inspired by the explosive power of a supernova and aligned with our brand identity.

The protocol is a **structured, risk-management framework** designed to ensure that no setback could completely derail the project. We began by identifying every major potential risk and rating each from 1–5 based on its likely impact on the team and project outcomes, with 1 representing minimal disruption and 5 representing a critical threat. This process **immediately highlighted which areas were most important** to protect, helping us **prioritise our time and resources** toward the risks that could most significantly affect project success.

Supernova Reaction Protocol		
Possible Problem	Ranking	Response/Prevention
Loss of important files, CAD	5	Everything is stored online in Teams as well as having local versions on each role manager's device
Failed to Raise Enough €	4	Every resource needed is checked for with atleast 2 suppliers ensuring we keep our expense low. Uniforms are a last expense ensuring we have the most important expense bought
Team Member Leaves	4	The team is not entirely reliant on any one person for anyone thing. By having people work together on tasks through our team structure, it ensures that more than one person are familiar with any task
Uniform Sizes Incorrect	2	Double check sizings. Order early so we have the chance to return/order again
Verbal Presentation "Freeze"	2	Practices after school in the run up to the competition, ensuring everything is known inside-out

However, identifying risks alone is only useful if action follows. For every **medium and high-level risk**, we created **two separate response strategies**: a **mitigation** plan and a **contingency** plan. The mitigation plan outlined actions taken in advance to reduce the likelihood or impact of the issue occurring, while the

contingency plan detailed the exact steps we would take if the problem actually materialised.

For example, our **highest-rated risk**; "**Loss of important CAD or Enterprise files**" (Impact: 5), was mitigated by storing all files in Microsoft Teams cloud storage with local copies on each person's personal device.

Our contingency response was a documented recovery procedure capable of restoring files within 30 minutes. This **dual approach** reflected an important lesson we learned throughout the project: prevention alone is fragile, while recovery alone is slow. By combining both, we created a system capable of absorbing shocks gracefully, ensuring the team was never caught on the back foot and could continue moving forward even under pressure.



Risks That Materialised — A Live Case Study

In **January 2026**, we faced a real instance of "**team member illness**", a Medium risk we had identified at kick-off. One of our team members was out for nearly two weeks during an active sprint, with several tasks assigned solely to him at risk of slipping. Our **pre-planned response** activated immediately: because every

primary role had a documented secondary backup as part of our roles and responsibilities framework, his outstanding tasks were **absorbed by his designated counterpart** without needing to convene an emergency reshuffle or rework the Gantt chart. Because the response was pre-defined rather than improvised, we recovered without affecting our sprint deliverables or pushing back any downstream dependencies. The incident validated our framework and reinforced our commitment to proactive, systematic preparation. **The team that prepares for the worst will never be phased by it.**

Joe Touhy
Graphic Designer
Missed almost two weeks due to illness

Sean Cahill
Business Manager
With Graphic Design as a secondary role, he was able to quickly take up what was needed

Risk Register & Ownership

Every risk in our register has a **named owner**, the team member best placed to detect and respond to it. The owner is not supposed to be the one to blame; it is supposed to be a responsibility for monitoring, reporting, and triggering the response. The register contains for each risk: **the risk**, the **risk description**, **category**, **probability** score, **impact** score, **calculated PIM rating**, threat tier, named owner, mitigation plan, contingency plan, last review date, and current status (Active, Materialised, Resolved). As of writing, the register currently contains over 20 active risks across all three categories, with each entry traceable back to the meeting where it was raised.

Risk Categorisation

We applied a **structured taxonomy** to ensure no area went under-examined, classifying every identified risk into one of four categories:

Technical Risks CAD file loss, software corruption, manufacturing defects, design flaws found late in testing, CFD simulation errors, 3D printer breakdowns.

Financial Risks Sponsorship shortfalls, cost overruns, supplier price increases, currency fluctuation on imported parts, unbudgeted travel costs

The Competition Delivery delays, exam-period bottlenecks, illness, scope creep, dependency slippage on the critical path, missed sprint targets.

External Risks Supplier stockouts, transport disruption to nationals, competition rule changes mid-season, weather affecting filming or events.

This categorisation gave each risk a "**home**" within our register, made trends easier to spot, and ensured ownership questions had clear answers, **financial risks went to Sean**, **technical** to **Harry and Matthew**, **schedule** to **Darragh**, and external risks were jointly owned.

Critical Material Suppliers — Supply Chain Redundancy

To support our risk response for supply chain delays, we **identified both preferred and secondary suppliers** for every critical material. This multi-supplier approach ensured that if our preferred source experienced stock issues or delivery delays, we could pivot immediately without losing time. One problem we faced early on in the project was when '**Boston Scientific**' who had covered the costs of making the car in previous years, **never responded to our emails**. We then pivoted to reaching out to other similar companies in Ireland, as well as looking for more sponsors to try to cover the cost ourselves (through sponsors). **We had already planned** our budget around having to cover the costs of manufacturing the car ourselves so this was not a huge issue. This issue was **reconciled** however when Boston eventually got back to us, the emails having gone to spam and unnoticed

Probability & Impact Matrix (PIM)

Each identified risk was scored on two dimensions to determine its overall threat level. **Probability (0.0–1.0)** measured how likely the risk was to occur during our project window, while **Impact (0.0–1.0)** measured how severe the consequences would be on schedule, budget, or quality if it did occur.

The product of these scores produced a **PIM rating** that placed each risk into one of three threat tiers:

$$PIM = P \times I$$

$$0.00 \leq PIM \leq 0.20 \Rightarrow LowRisk$$

$$0.21 \leq PIM \leq 0.40 \Rightarrow MediumRisk$$

$$0.41 \leq PIM \leq 1.00 \Rightarrow HighRisk$$

Example, for a risk with a probability of 0.8 and an impact of 0.4;

$$0.8 \times 0.4 = 0.32$$

$$0.2 < 0.32 < 0.41 \Rightarrow MediumRisk$$

High-threat risks were reviewed weekly with documented mitigation and contingency plans; medium-threat risks were monitored fortnightly; low-threat risks were logged but not actively managed beyond a quarterly check that their rating remained valid. This tiered approach prevented us from spreading our attention too thin and ensured the most dangerous risks received the most rigorous response.

Communication, Monitoring & Controlling



Boston Scientific



Stakeholder Communication Plans

We all agreed that clear, consistent communication with everyone involved in the project was essential to keeping **Nova Racing on track**. (pun intended) Beyond our internal team channels (WhatsApp, Microsoft Teams, Jira, and weekly meetings), we developed formal communication plans for each of our external stakeholder groups to ensure the **right people** received the **right information** at the **right time**.

Stakeholders

Team Members

Communicated information: task status, sprint progress, blockers, meeting minutes. Frequency: daily via Snapchat; weekly via Monday meetings. Platforms: Snapchat, Jira, Microsoft Teams.

School Coordinator (Mr. Gleeson)

Communicated information: project milestones, budget summaries, logistics, competition deadlines. Frequency: weekly verbal update, fortnightly written summary. Platforms: in-person meetings, Microsoft Teams.

Sponsors (E2T, Studytok, Donal T. Ryan Solicitors)

Communicated information: project progress, ROI delivery updates, logo placement confirmations, social media post scheduling. Frequency: fortnightly email updates; monthly video call with E2T as principal sponsor. Platforms: email, Microsoft Teams.

Mentors & Industry Contacts

Communicated information: technical queries, design feedback, manufacturing guidance. Frequency: as needed, typically bi-weekly. Platforms: email, Microsoft Teams.

Parents & School Community

Communicated information: team achievements, competition dates, fundraising updates. Frequency: monthly, plus event-driven updates. Platforms: social media, school newsletter.

Meeting Structure

Our **weekly Monday team** meetings followed a standardised agenda template to maintain **consistency and focus**. Every meeting was structured around five things:

- **Review of last week's action items**
 - Were all tasks from the previous meeting completed? Any carry-overs?
- **Jira board walkthrough**
 - Sprint progress review
 - Task status updates (To Do → In Progress → Done)
 - Identification of blockers.
- **Engineering & Enterprise status updates**
 - Each stream lead reported progress on their active deliverables.
- **Issues & risks**
 - Any new problems raised, discussed, and assigned for resolution.
- **Action items for the week ahead**
 - Tasks assigned with owners, deadlines, and acceptance criteria clearly stated.



Meeting Documentation

One of our team members, **Sean**, is on the **Student Representative Council** and learned the **importance of minutes** from this. As a result he thought it would be a good idea to do the same with our Nova project. **Minutes were recorded at every meeting** by Darragh (Project Manager) and uploaded to our shared Microsoft Teams folder. This created a documented trail of decisions and commitments that the team could refer back to at any point.

Status Reports

We thought of and implemented a fortnightly status report prepared by Darragh (Project Manager) and distributed to the full team and school coordinator. These reports served as a formal record of project progress and were structured around six sections:

1. **Summary & KPIs** - A brief overview of overall project status, with a **traffic-light indicator** (Green / Amber / Red) for each of the four key areas: Schedule, Budget, Quality, and Scope.
2. **Schedule Update** - Progress against our **Gantt chart**, highlighting tasks completed since the last report and tasks due in the upcoming fortnight.

3. **Budget Update** - Summary of **planned spending and expenditure** to date. Notes on anything that will need to be bought in the coming days/weeks

4. **Task Sign-Offs** - A list of deliverables that had been completed since the last report. Signed-off tasks were highlighted in green on our Jira board and noted in the status report with the date of completion

5. **Issues & Blockers** - Any **active problems**, with a brief description, the team member responsible for resolution, and the target resolution date.

6. **Outlook** - Key priorities and focus areas for the next reporting period, including any upcoming milestones, deadlines, or external commitments (e.g., sponsor meetings, school events).

Jira as Our Central Monitoring Dashboard

While written status reports provided a periodic view of progress, our **Jira board offered a real-time view** of where every deliverable could be viewed at any given moment. We configured Jira with a Kanban-style workflow built around four columns

1. **Backlog**,
2. **To Do**
3. **In Progress**
4. **Done**

and migrated every task from our **Work Breakdown Structure** into the system as an individual ticket. Each ticket was assigned to a clear owner and given a priority level of Critical, High, Medium, or Low, ensuring that effort was always directed where it mattered most.

This setup gave us **four key monitoring capabilities** that we relied on throughout the project. Sprint tracking was managed by Darragh, who moved tasks from the Backlog into the active sprint at the start of each two-week cycle; at the end of the sprint, any uncompleted tasks were reviewed and either **rolled into the next sprint** if the delay was minor, or **escalated to the Monday team meeting** if the slippage was significant.

Workload visibility was achieved by filtering tickets by assignee, allowing us to see at a glance whether any team member was overloaded or underutilised, which directly informed our task assignment decisions and supported the tiered allocation system outlined in our Roles & Responsibilities section.



Alongside Jira, we maintained a structured approach to issue identification and resolution, **recognising that problems were inevitable in a project of this complexity**. Our philosophy was to surface issues early, document them transparently, and resolve them systematically, and to that end we kept a running Issue Log in a shared Google Sheet, structured with the following fields: Issue ID, Date Raised, Description, Raised By, Priority, Assigned To, Target Resolution Date, Status, and Resolution Notes. This combination of real-time tracking in Jira and structured issue management in our log ensured that nothing fell through the cracks, and that the team always had a single source of truth for both progress and problems.

Each communication plan was documented in a shared Google Sheet, with the last contact date and next scheduled touchpoint tracked for every stakeholder. This ensured no relationship went cold and that sponsor engagement remained consistent throughout the project lifecycle.



What we're agreeing to

By signing below, each of us is agreeing to:

- Show up to Monday meetings on time and prepared, or let the team know in advance if we can't.
- Keep our Jira tickets up to date so the board actually reflects reality.
- Raise issues as soon as we spot them, instead of letting them get worse.
- Reply to team messages on WhatsApp and Teams within a reasonable time during the week.
- Be professional with sponsors, mentors, Mr. Gleeson, and anyone else outside the team.
- Not promise things to outside people without checking with Darragh first.
- Back each other up and keep the team a good place to work.

Sign-off

We've all read this and we're happy with it.

Darragh Bardon — Project Manager	Signed:	Date: 25/9/25
Harry Dowling — Design Engineer	Signed:	Date: 25/9/25
Sean Cahill — Business Manager	Signed:	Date: 25/9/25
Matthew McElroy — Manufacturing Engineer	Signed:	Date: 25/9/25
Gilles Kearney — Research Engineer	Signed:	Date: 25/9/25
Joe Tuohy — Graphic Designer	Signed:	Date: 25/9/25

Witnessed by:

Mr. Gleeson — School Coordinator

Signed: _____ Date: 25/9/25

An extract from our **Communication Plan** that we formulated and **agreed to** on our first meeting



Brand Identification

Before any marketing activity could begin, **Nova Racing needed a clearly defined brand** that would remain consistent across every platform and event. At the beginning of the project, the team ran through ideas and **collectively came up with our brand identity**, the **foundation** upon which all **marketing efforts** were built.

Our Mission

To be **bold** and **curious**, always willing to talk to someone and anyone to try to further our knowledge and our project.

To stand on the podium at the national STEM Racing finals, knowing that every member **gave their absolute best** and that we all felt that **we grew as people** through our project.

Our Slogan

“BORN FROM STARDUST,
BUILT FOR SPEED”

A reference to the **supernova**, the astronomical event at the heart of our brand. A supernova represents an **explosion of energy**, light, and the **creation of new elements**, mirroring Nova Racing's goals of turning our raw potential into something **extraordinary**. The phrase captures both the intensity of our ambition and the creative energy of our team.

Our Brand Philosophy

Nova Racing's identity is rooted in three pillars: **energy** (the drive and intensity we bring to every task), **precision** (the engineering and strategic rigour behind our decisions), and **impact** (the lasting impression we aim to make on judges, sponsors, and the wider community). These pillars informed every design choice, content piece, and public-facing communication.

Our Colour Scheme

Our visual identity draws from the **supernova phenomenon**; a palette of **deep cosmic purple** (#A731C2), vibrant **magenta** (#B51FB1), and novaic **pink** (#F3BAFD), offset by clean white for readability. These colours were selected for their **softness** and **memorability**, standing out in a competition space often dominated by blues, reds, and greens.

Marketing Goals

Our marketing strategy was anchored by **three clearly defined goals**. Each goal was aligned with a specific outcome and linked to the target audience segments most relevant to achieving it:

Goal One

Raise awareness of STEM Racing and the F1 in Schools programme. Promoting the competition itself, particularly within our school and local community, to encourage future student participation and demonstrate the real-world skills the programme develops.

Goal Two

Expose our team and showcase team member talents. Six students from Tipperary taking on national competition, our story is compelling, and we wanted to tell it in a way that highlighted the individual skills and collective effort of the team.

Goal Three

Build a **community of supporters** around Nova Racing. Beyond judges and sponsors, we wanted to connect with **students, teachers, parents, and local businesses** who could follow our journey and champion our success.

Target Audience

We identified **three key audience segments**, each with distinct characteristics that required tailored marketing approaches:

Students

Aged **12-18**, from our local school community. Our approach was digital-first, using a relatable tone and behind-the-scenes content to connect with them. **Target outcome:** Increase student interest in STEM Racing and grow our social media following.

Sponsors & Professionals

Aged **30+**, business-oriented, both locally and nationally. Communication was formal, with a strong focus on ROI and professional updates. **Target outcome:** Maintain sponsor satisfaction and attract future partnerships.

General Public

All ages, within the local and regional community. Content was less technical and more story-driven, shared across both traditional and digital channels. **Target outcome:** Raise awareness of the competition and our journey.

Marketing Budget

We allocated a **dedicated marketing budget** within our overall project finances, prioritising low-cost, high-impact activities while leveraging sponsor resources wherever possible.

Website domain and hosting:

Annual hosting secured through an **affordable provider**.

Social media promoted posts:

Targeted *Instagram promotions* used to amplify key campaigns.

Printed materials (business cards, brochures):

Produced for competition day and sponsor meetings.

Portfolio printing:

Included within the enterprise budget, so no additional marketing cost incurred.

Merchandise:

Cost of purchasing and customising our uniform for the day

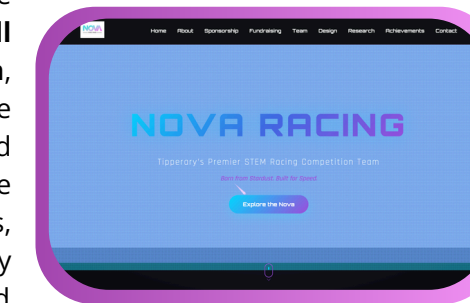
By keeping our marketing budget lean, we maximised the proportion of sponsor **funds directed toward engineering and competition preparation**. The majority of our marketing output, including social media content, website development, and graphic design, was produced in-house by Joe and the wider team at no financial cost, representing significant **“sweat equity.”**

Marketing Budget	
PRODUCT	COST (€)
Website domain and hosting	50.00
Social media promoted posts	40.00
Printed materials (business cards, brochures)	60.00
Portfolio printing	-
Merchandise	250.00
TOTAL ESTIMATED SPEND	

Digital Media Platforms

Our website served as the **central location for all Nova Racing information**, a single destination where any audience member could learn about our team, the competition, our sponsors, and our journey. Built by Sean, the site was structured

Novaracing.ie



as one long page, focusing on five key points:

Home

Hero image of the team/car, mission statement, and quick links to social platforms. Designed to make a strong visual impression in under three seconds.

About Us

Team member profiles with photos, roles, and brief bios. This humanised our team and gave sponsors and judges a face to associate with each role.

The Competition

An explanation of STEM Racing / F1 in Schools for visitors unfamiliar with the programme. Essential for our general public and parent audience segments.

Our Sponsors

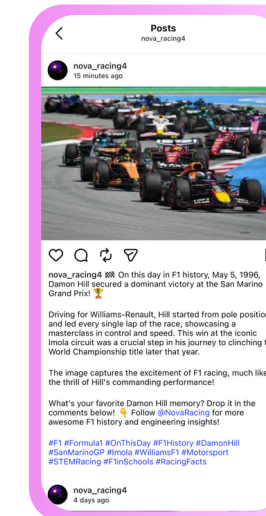
Dedicated page featuring each sponsor's logo, a brief description of the partnership, and a link to their website. This was a core ROI deliverable — giving sponsors a permanent, professional online presence linked to our brand.

Contact

A simple contact form and links to all our social media channels, making it easy for potential sponsors, media, or supporters to reach us. This is in fact how one of our sponsors, Donal, got in contact with us.

Marketing Materials

Beyond digital content, we developed a **suite of physical marketing materials** to support our brand at competition and in sponsor-facing contexts:



Business Cards - Designed by Joe with the Nova Racing logo, team member name and role, website, and social handles. Distributed to judges, sponsors, and industry contacts at events, with each team member carrying personalised cards.

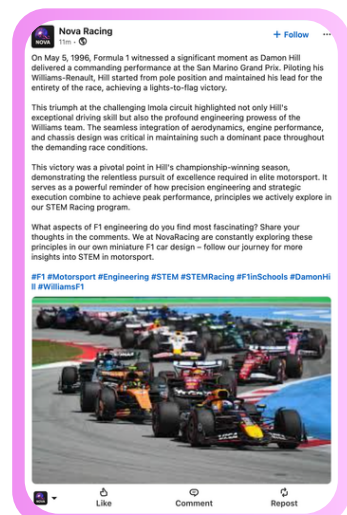
Team Brochure - A folded A4 summary of our team, the competition, sponsors, and achievements. Used as a leave-behind for sponsor meetings and a handout at the pit display.

Sponsorship Prospectus - A comprehensive digital document (also printed for key meetings) covering the F1 in Schools / STEM Racing competition, Nova Racing, our sponsorship tiers and ROI packages, budget, and marketing reach. Sean's primary tool during sponsor acquisition.

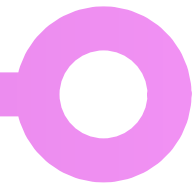
Pit Display Branding - All signage, banners, and display elements followed our Brand Guidelines for a unified, professional look.

Sponsor logos were positioned by tier, with prominence matching investment level.

Car Livery - Treated as a marketing asset, we wanted sponsor logos placed for maximum visibility based on camera angles and spectator sightlines, and Nova Racing branding prominently featured. Designed by Joe and approved by all sponsors before application.



Sponsorships



Sponsorship Pitch & Onboarding Process

Securing the **right sponsors** required a **deliberate, structured approach** rather than a spray and pray campaign. Given our limited budget needs and the importance of brand alignment, we prioritised **quality of fit over quantity of partners**.

We began with a research phase, identifying companies whose values, industry focus, or target audience aligned with our team and the wider F1 in Schools ethos. Each potential sponsor was assessed against three criteria: **relevance to our project, capacity to provide meaningful support**, and the **strength of mutual ROI potential**. Only those that scored well on all three were progressed to the pitch stage.

For each shortlisted sponsor, we developed a **tailored pitch deck**. Rather than sending a generic proposal, every deck was customised to highlight the specific value we could offer that company. For example, our pitch to E2T led with sustainability and STEM outreach, while our Studytok pitch focused on student demographics and content reach. This approach aimed to demonstrate that we had genuinely considered why the partnership would **benefit them, not just us**.

	Bronze €150	Silver €300	Gold €500	Platinum €1000
Logo on Pit Display	✓	✓	✓	✓
Verbal recognition on race day	✓	✓	✓	✓
Recognition on our social media	✓	✓	✓	✓
Logo on our uniforms		✓	✓	✓
Logo on our display Car			✓	✓
Logo on the cover of our portfolios			✓	✓
Logo on Race car				✓

We created 4 different tiers of sponsorships; Bronze, Silver, Gold and Platinum. This helped sponsors to decide where they wanted to enter

We then arranged **in-person** and **video meetings** to present our pitch directly. These meetings were a key part of the process, allowing us to **build personal connection, answer questions**, and perfect our offer in real time based on each sponsor's priorities. Once a sponsor agreed on the principle, we moved into a processing phase. This included a **confirmation email** outlining the **agreed tier** and benefits, a **signed sponsorship agreement**, collection of brand assets (high-resolution logos, brand guidelines, preferred messaging), and a kick-off communication setting expectations for the season ahead. This ensured every sponsor began the partnership with clarity, confidence, and a clear understanding of what they would receive in return.

Sponsorship Tiers

We developed a **four-tier sponsorship structure**, each with a clearly defined **set of ROI benefits**. The tiered approach served two purposes: it gave sponsors at different budget levels an entry point, and it ensured that larger contributors **received fairer, greater returns**, maintaining fairness and incentivising higher investment.

Our sponsorship model was designed to **create a clear hierarchy of value**, ensuring that each partner receives a level of exposure and engagement proportional to their contribution. This tiered approach allows us to cater to a range of sponsors while maintaining fairness and **delivering measurable return on investment (ROI)**.

Bronze - €100

This entry-level tier is aimed at smaller businesses seeking brand visibility within a student and local audience. Sponsors receive social media promotion (including an Instagram shoutout and logo mention), logo placement on our team poster or pit display, and acknowledgement in our event recap post. This provides cost-effective exposure and initial brand association with our project.

Silver - €300

Building on Bronze, this tier increases both visibility and engagement. Sponsors receive logo placement on the team car or uniform, tagging across multiple social media posts, and inclusion in a team video or update. This ensures repeated brand exposure across different platforms, strengthening recognition and audience reach.

Gold - €500

This tier is designed for sponsors seeking strong brand presence and deeper involvement. In addition to all Silver benefits, sponsors receive prominent logo placement across the car, uniform, and display materials, a dedicated social media feature, and inclusion in presentation materials and team documentation. Sponsors may also attend a car showcase or photoshoot, creating opportunities for direct interaction and content creation, further enhancing ROI.

Platinum - €1000

Our highest tier offers maximum exposure and exclusivity. In addition to all Gold benefits, there is the option for the team to be named after the sponsor, and their logo is featured as the primary branding across all cars. This ensures consistent, high-visibility placement across all media, presentations, and events, delivering the strongest possible brand association and impact.

Sponsor Relevance & Justification

We wanted to select sponsors whose **values, industry focus, and target audience aligned with our STEM Racing project**. We had a relatively small budget, which meant we did not need a wide range of sponsors and as a result we could be **more selective** of our sponsors.



Boston Scientific is a global leader in engineering and medical technology, with a strong presence in Ireland. Their involvement is highly relevant due to the strong link between **STEM Racing and real-world engineering**, design, and innovation. Supporting our team allows Boston Scientific to promote STEM careers to students and align their brand with future engineers and problem-solvers.

E2T works in **renewables** and the **shift away from fossil fuels**, exactly the kind of forward-thinking work that fits with what STEM Racing is about. Modern engineering and sustainability go hand in hand, and our project reflects that. Backing our team puts **E2T** alongside the next generation of engineers tackling these problems, and for us, their support gives the **sustainability side** of our project real weight.



Donal T. Ryan Solicitors is a local firm with deep roots in the community, and their sponsorship is a real vote of confidence in what we're doing. For them, backing a student team puts their name in front of **local families** and shows they care about **more than just the day job**. For us, it means we've got a respected local business in our corner, proof that the **community is behind us**.

Studytok is a student-led Irish education platform, making it highly aligned with our team both **demographically** and ideologically. As a product built by students, we were super happy to be supported by **our fellow peers**. By supporting our team, **Studytok** gains authentic exposure to its core market (leaving cert students) while reinforcing its brand as a leader in modern, student-driven education in Ireland.



Each sponsor was selected to represent a different but complementary area; **education, engineering, community, and sustainability**. This diversity strengthens our project by demonstrating a wide range of support while ensuring that every partnership has a clear and relevant purpose.

By **aligning sponsor values** with our **team's goals and audience**, we ensured that all partnerships deliver meaningful ROI, whether through brand exposure, community engagement, or long-term talent development.

Maintaining Sponsor Engagement

Securing sponsorship was only the first step. **Maintaining strong, ongoing engagement** was equally critical. Disengaged sponsors are unlikely to renew support in future seasons, and poorly managed relationships risk damaging our team's, and any future Rockwell Team's reputations.

Our sponsor engagement strategy was built around three key principles:

Consistency - Relevance - Transparency

We ensured **regular communication** at **regular intervals**, with tailored updates to each sponsor's specific interests, and provided honest reporting on both successes and challenges.

To manage this effectively, all communications were tracked in a shared Google Sheet. This included the sponsor name, last contact date, communication method, content shared, and next scheduled interaction. This system ensured that **no sponsor went more than two weeks without engagement**. Communication was adapted based on each sponsor's preferences and level of involvement:

- E2T: Monthly video calls combined with fortnightly email updates, covering engineering progress.
- Studytok: Fortnightly email updates alongside ad hoc WhatsApp communication
- Donal T. Ryan Solicitors: Fortnightly email updates focused on key milestones and upcoming visibility opportunities.

In addition to scheduled updates, we shared spontaneous **"good news"** moments with sponsors as they occurred, such as positive progress, or key manufacturing milestones. These real-time updates reinforced the value of their investment, demonstrating tangible progress and consistent activity throughout the project.

Sustainability & Community Impact



Environmental Sustainability in Practice

We applied a simple test to every material and process decision: is there a **lower-impact alternative** that meets our performance targets? Where the answer was yes, **we chose it**. Our wood for our pit display was sourced from a **local supplier within Munster**, rather than internationally shipped stock, reducing transport emissions and supporting an Irish small business at the same time. Where possible, we selected **biodegradable** or **recyclable materials** for our pit display construction, car design, and marketing materials including FSC-certified plywood and water-based paints.



Inclusivity and Team Culture

A sustainable team is an inclusive one. Within Nova Racing, we operated by **three internal commitments**: every voice contributes at every meeting, every role rotates secondary support so no single member is indispensable, and every disagreement is **resolved** through evidence rather than supposed seniority. Our RACI matrix and tiered task allocation system were designed specifically to prevent any one person from **dominating decisions** or being **overloaded**. Workload visibility on Jira ensured the team could see, in real time, whether anyone was carrying a disproportionate share of tasks. The result was a team culture where every member contributed across both engineering and enterprise streams at some point in the project.

Digital-First Operations

All internal documentation, meeting minutes, status reports, the risk register, the Gantt chart, our Jira board, and the portfolios themselves, were created and shared digitally. Printed copies were produced **only for sponsor meetings** and **the competition itself**, dramatically reducing paper consumption over the project lifecycle. Sponsor-facing materials were preferably shared as PDFs, with printed versions limited to genuine in-person meetings.



Community Engagement Beyond the School

Our impact extends beyond Rockwell's gates. Nova Racing is a Tipperary team, and we wanted our local community to feel **invested** in our journey. We met in person with every local sponsor, and Donal T. Ryan Solicitors specifically commented that our **community engagement** was a key reason they backed the team. Our monthly newsletter, distributed to the Sponsors, kept them informed of milestones. Across Instagram and LinkedIn, we deliberately posted content that



explained STEM Racing to a general audience and demonstrating to future students that a national-level engineering competition is within reach.

Industry Mentorship & Knowledge Sharing

Sustainability is not just to do with the environment, it is the sustainability of **knowledge across generations** of teams. We engaged with industry mentors, including alumni of previous successful Irish F1 in Schools teams, whose input on portfolio structure, sponsor engagement, and competition-day logistics was invaluable. We have committed to providing the same support to future Rockwell teams when our season ends, **paying forward the help we received**.

Team Wellbeing & Workload Management

We took team wellbeing seriously, recognising that a burned-out team produces a burned-out portfolio. Workload was monitored through **Jira's assignee filter**, and any team member voicing an overload led to a workload discussion at the next Monday meeting. We also explicitly **protected exam-period downtime**, front-loading work in October–November so that December–January schoolwork was not compromised. This discipline is what allowed us to remain on schedule without sacrificing academic performance, and not forcing members to prioritise one over the other

Career-Linked Storytelling

Gilles and Harry **presented to a Junior science class** on how the **technical concepts** students study in school, fluid dynamics, Newton's laws, Bernoulli's principle, apply directly to real-world engineering and the STEM Racing competition. The aim was to show that the curriculum has **practical reach**, and to spread awareness of the STEM Racing competition in our school. Sean + Darragh delivered a similar session for Transition Year business students focused on the **enterprise side** of the project, how a team raises money, manages a budget, and builds sponsor relationships, connecting with students whose interests sit closer to business than to engineering. Once again, showing off the STEM Racing competition and trying to inspire teams for next year



Nova Racing exists because **Bullet Racing** existed before us, and **Inferno Racing** after that. We are committed to passing forward what we have built. At the end of our season, our complete documentation, Jira board, Gantt chart, risk register, sponsor contact log, brand guidelines, CAD library, supplier list, and a written lessons-learned document, will be archived in a structured handover folder for the next Rockwell College team. We have also offered to brief any incoming team and **answer questions**. We are not just running our own race; we want to support a continuous school effort that will outlast any individual team.

Reusable Pit Display Components

A core part of our sustainability commitment was **reusing structural components** from last year's pit display rather than building everything from scratch. The freestanding frame and several backboard panels were salvaged from the **previous Rockwell team**, sanded, and refinished in our supernova brand palette, saving timber, reducing landfill waste, and cutting our pit display material costs significantly.



Our Commitment to Responsible Engineering

Modern engineering is not just about performance, it is about **responsibility**. As a team that proudly counts **E2T** (Energy 2 Transition) among our **principal sponsors**, we believe Nova Racing has a duty to operate sustainably and to share our journey with the community that supports us. Sustainability and outreach were **not afterthoughts** bolted on at the end of the project; they were woven into our decision-making from kick-off, influencing how we sourced materials, designed our processes, and shared our story. Our goal was to leave the world, and our community, measurably better than we found it.

Alignment with E2T's Mission

E2T (Energy 2 Transition) is a **sustainability-focused company** whose mission centres on the global shift away from fossil fuels and toward clean energy solutions. Their decision to back Nova Racing was **deliberately tied** to our willingness to operate as a sustainability-minded team, and we honoured that partnership by treating **environmental responsibility** as a measurable project deliverable rather than a marketing claim. This alignment between sponsor values and team behaviour also strengthens the ROI argument we present to E2T, they are not just buying brand exposure, they are co-funding outcomes that match their corporate purpose.



Verbal Presentation & Pit Display Strategy



Boston
Scientific

DONAL T. RYAN
SOLICITORS LLP



NOVA
RACING

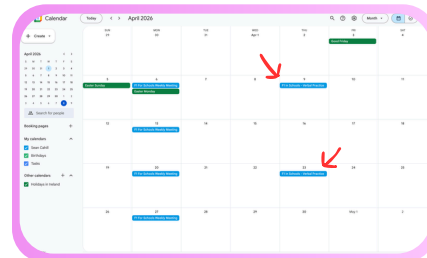


A Strategy Built for the Final Day

Months of project management, sponsorship work, and engineering only matter if we deliver on competition day. Our pit display and verbal presentation are the moments where everything we have built is **tested under pressure**, in front of judges, and against the very best teams in Ireland. We approached both deliverables with the same engineering focus we applied to the car itself, designing for purpose, prototyping under realistic conditions, and refining based on feedback. **Nothing on competition day should be improvised**; every element has been planned, rehearsed, and stress-tested in advance.

Rehearsal & Preparation Plan

A presentation succeeds or fails before the team ever walks into the room. From **April 2026**, we plan on running structured rehearsal blocks weekly. Each rehearsal will be timed, and reviewed against three criteria: clarity of message, timing accuracy, and individual delivery quality.



Mr. Gleeson will be asked to help out during the final two weeks to provide independent and more experienced feedback. We have also identified the

"**Verbal Presentation Freeze**", a known risk where a team member loses their place under pressure, and prepared a few verbal recovery cues that any presenter can use to hand off seamlessly to a teammate.

Roles on Competition Day

Every team member has a **defined role for the duration of the event**, mirroring the projectised structure we operate during the project itself:

Sean (Business Manager) - Lead presenter for project management section, time-keeper, primary judge interface, schedule manager for the day.

Darragh (Project Manager) - Lead presenter for sponsorship and marketing, sponsor liaison person if any sponsors attend, ROI talking-points lead.

Harry (Design Engineer) & Gilles (Research Engineer) - Lead presenters for engineering sections, technical Q&A.

Matthew (Manufacturing Engineer) - Manufacturing detail, car presentation, on-site repairs, spare parts kit owner.

Joe (Graphic Designer) - Pit display manager, photography for post-event social media, responsibility for clean up post event.

Verbal Presentation Structure

Our ten-minute verbal presentation has been scripted, timed, and structured around a **deliberate narrative arc**. The script is reviewed from time to time and adjusted based on **rehearsal** feedback.

The structure is as follows:

Closing

Results, Reflection, Looking Forward (90 seconds): what we achieved, what we learned, what we are leaving behind for future teams.

Engineering

Research, Design, Manufacture, Testing (4 minutes): how we built the car, with references to specific engineering decisions and their justification.

Opening

Brand & Project Vision (90 seconds): hook, slogan, mission, why we are here.

Enterprise

Sponsorship, Marketing, Project Management (3 minutes): how we built and ran the team as a business.

Each section has a **primary speaker** and a **designated backup**, ensuring continuity if any member is unavailable on the day. Transitions between speakers are prepared to be natural rather than abrupt.

Pit Display Design Philosophy

Our pit display isn't just a nice design, **it's a working environment that tells our story**, hosts our judging conversations, and showcases our brand. Joe led the design under **three principles**. Visual Hierarchy ensures a judge approaching our stand can identify our team name, slogan, and primary sponsor in **under three seconds**, with secondary information revealing itself on closer inspection, important elements at eye level, supporting elements above and below. Brand Consistency enforces that every printed element follows our consistent 'Brand Guidelines' (#A731C2, #B51FB1, #F3BAFD);



Physical Specifications & Construction

The pit display is built around a **freestanding modular frame**, ply-clad on visible surfaces and finished in our brand palette. Construction was led by Matthew with support from Joe, who used materials from our budgeted supplier list. Key features include a **backboard** (display centerpiece with team identity and project narrative), a **front presentation desk** (housing the car on a rotating, floating platform and copies of our portfolios), **two side wings** (sponsor wall and engineering content), and a **computer running our digital portfolio and CFD animations**. Every dimension was checked against the STEM Racing pit display footprint regulations before construction began.



Q&A Preparation & Anticipated Questions

Judges ask difficult questions on purpose. We have prepared for this by maintaining a live "**Anticipated Questions**" document where every plausible question we can imagine is logged with a model answer. The document currently contains **over 20 prepared responses**, organised into five categories: Technical (aerodynamics, manufacturing, materials), Project Management (planning, schedule, risk), Sponsorship & Marketing (ROI, tier structure, brand) and Team & Process (roles, conflict, learning). Each entry is reviewed and added to at every Monday meeting, and **team members rotate through which category** they are responsible for during practice sessions.

Competition Day Logistics

The day itself is a logistics challenge as much as a performance one. We have built a **Competition Day Plan** covering: transport (loading order, who carries what, contingency for vehicle failure), arrival and setup (timing, pit display construction sequence, brand check), break and refuel windows for the team, emergency contacts, and end-of-day teardown. The plan is owned by Darragh and every team member knows the plan.

Post-Competition Reflection Plan

We have **committed to a full post-competition retrospective within two weeks of the event**. Every team member contributes to a document covering what worked, what didn't, what we'd do differently, and recommendations for future teams. This document forms part of our handover package and ensures that whatever happens at competition, the value of the experience is captured for the team that follows, ensuring that we pass continue to build STEM Racing prevalence in Rockwell College

Digital Media



A Strategy Built for the Final Day

Nova Racing held its **first crew meeting on the 3rd of October 2025**, where digital media was quickly identified as going to be the bulk of our marketing strategy, the channel that would carry our brand to **sponsors, students**, and the wider **STEM Racing community**. Before posting a single piece of content, we conducted a structured planning phase across **three meetings**, mapping each platform to a specific audience segment, content style, and measurable outcome.

Our research, drawn from analysis of previous national finalists and broader F1 sponsorship data, made the platform mix clear: **LinkedIn** for professional reach, a **custom website** as our digital hub, and **Instagram** for community and student engagement.

Roles were assigned based on **individual strengths**: Sean and Darragh, as enterprise leads, took ownership of LinkedIn and the website.

Matthew, Sean and Darragh shared Instagram management. This aimed to ensure accountability and consistent posting.

All co-ordination was run through a dedicated **Microsoft Teams channel**, allowing us to plan posts, share drafts, approve content, and react to opportunities even when face-to-face meetings weren't possible.

Strategy

Our digital strategy was anchored by a single principle: every post must serve a defined audience and a measurable goal. We identified our **primary target audience** as adults aged **25-44** in **business** and **motorsport-adjacent industries** — the demographic with both the financial capacity and professional interest required for sponsorship. This was supported by our research into F1 Sponsorship Value by Age Group (see chart), which showed the 18-34 bracket scoring a relative index of 100, followed by 25-44 at 85, with 12-17 trailing at 60. This data directly shaped our content calendar: technical, ROI-focused content for LinkedIn; story-driven, behind-the-scenes content for Instagram; and a website built to convert interest into action.

To unify the strategy across platforms, we adopted our brand slogan, "**Born from Stardust, Built for Speed**", as a recurring hook, combining our cosmic visual identity with the energy of motorsport.

"BORN FROM STARDUST,
BUILT FOR SPEED"

We layered this with a secondary content stream of F1 historical moments posts, which aimed to catch the eye of long-time motorsport fans and **dramatically increase dwell time** on our profiles. Every piece of content was reviewed against three criteria before publishing: brand **consistency**, audience **relevance**, and **call-to-action clarity**.

LinkedIn

LinkedIn was led by Sean as our professional gateway, targeting sponsors, STEM educators, and industry contacts. The strategy had **two aims**: build a network of credibility through connections with previous STEM Racing teams and motorsport professionals, and use the platform to issue formal updates that demonstrated progress and ROI to current and prospective sponsors. By systematically connecting with alumni of the programme,

we gained early insight into sponsor **expectations**, portfolio **standards**, and **judge priorities**, which directly informed

our enterprise approach. Each post was written in a formal, milestone-driven tone, tagged with sponsor handles to amplify their visibility, and timed to coincide with key project moments such as sponsor confirmations, car milestones, and event participation.



Nova Racing Website — novaracing.ie

The website is the **centre piece of our digital presence**: a single, always-on destination where **any audience member** can learn who we are, what we're racing for, and how to support us. Due to Sean's prior experience in web and software development he led the development, using **Claude AI-assisted coding**, to design and build a fully responsive, professional site that reflected our brand guidelines pixel-for-pixel.

The site is structured as a single-page experience with five anchored sections:

Home

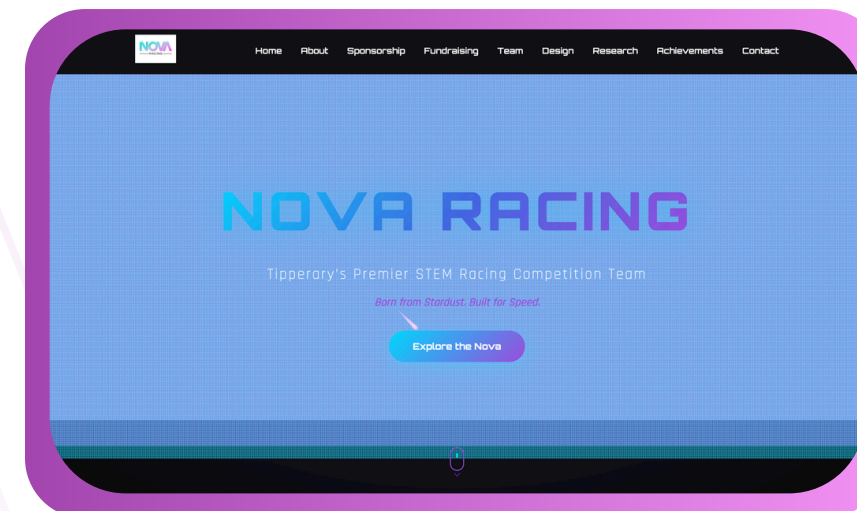
About Us

The Competition

Sponsors

Contact

Each section was engineered to convert a different audience action: judges learning about the team, sponsors learning more about us, and prospective supporters reaching out via the contact form (which **directly led** to one of our sponsorships with Donal T. Ryan Solicitors LLP). Weekly meetings ensured **coordinated bug fixes, content updates**, and **continuous improvement**. The result is a polished digital asset that doubles as a permanent ROI deliverable for every sponsor whose logo appears on it.



Instagram — @nova_racing4

Instagram was selected as our **community platform** after engagement-rate analysis showed it **consistently outperforms Facebook and X** for content of our target audience.

Engagement % per Post

Instagram → 0.5%-1%

Facebook → 0.1%-0.3%

X (Twitter) → 0.02%-0.1%



We wanted to aim our content around **three recurring formats**: **build progress reels** (behind-the-scenes engineering), **team-member spotlights** (humanising our brand),

and **F1 historical moments** (driving reach beyond our immediate network). Posts are co-ordinated through Teams, scheduled around peak engagement windows, and cross-promoted with sponsor tags to **maximise reach**. Instagram has become both our most active community-building channel and a funnel into the website.

