DJS IMPULSE

PROPOSAL

CSR

ADVANCED STUDENT
ROCKETRY & AEROSPACE
SKILL DEVELOPMENT

PREPARED BY

DJS IMPULSE
SVKM'S DWARKADAS J SANGHVI COLLEGE OF ENGINEERING
MUMBAI, INDIA

2026

Table of Contents

Table of Contents 1

Executive Summary 2

Organization Profile 3

Project Objectives 6

Implementation Plan 7

Expected Outcomes & KPIs 8

Detailed Budget 10

Risk Management & Sustainability 13

Visibility & Branding for CSR Partner 14

Contact Us 15

Executive Summary

The team, DJS IMPULSE aims to provide hands-on aerospace engineering training to undergraduate students through the design, fabrication, testing, and launch of student-built high powered rockets.

Over a 12-month period, the team will:

- Participate in national/international rocketry competitions
- Train 40+ engineering students in propulsion, avionics, structures, systems integration, and safety engineering
- Conduct rocketry/STEM workshops for school and college students
- Undertake applied research projects in areas such as propulsion optimization, flight data analytics, or avionics development

The initiative connects theoretical engineering with real-world aerospace by enabling students to design, manufacture, test, and launch high-powered rockets. Through hands-on work in structures, propulsion, avionics, testing, and launch operations, students gain end-to-end development experience along with skills in simulation, embedded systems, telemetry, documentation, and safety.

Total CSR Funding Requested: ₹ 2,00,000

Implementation: Through **Shri Vile Parle Kelavani Mandal's DJ Sanghvi College of Engineering**, aligned with Schedule VII (Education & Skill Development).

Key outcomes include industry-ready engineering graduates and increased STEM engagement among school students in Mumbai.

Organization Profile

About the Institution

Shri Vile Parle Kelavani Mandal (SVKM) is one of Mumbai's leading educational trusts, established in 1934, managing a wide network of reputed schools and higher education institutions across disciplines including engineering, management, science, and humanities.
Dwarkadas J. Sanghvi College of Engineering (DJSCE), established in 1994 under SVKM, is a premier autonomous engineering college in Mumbai. Approved by AICTE and affiliated with the University of Mumbai, the institution is known for its strong academic standards, industry engagement, and support for innovation-driven student initiatives.
With structured governance, faculty mentorship, and advanced laboratory infrastructure, DJSCE promotes experiential learning and multidisciplinary technical projects aligned with industry and national technological goals.

About the Team

A. Formation & Vision

DJS IMPULSE was established in 2023 as a multidisciplinary engineering initiative to bridge the gap between classroom-based theoretical learning and practical aerospace systems development.
Recognizing the limited exposure to hands-on propulsion testing, avionics integration, and flight validation in conventional curricula, the team was created to provide structured, safe, and research-oriented rocketry experience.

Vision:

To develop practical aerospace engineering capability through structured experimentation, research-driven development, and participation in national and international rocketry competitions.

B. Team Record & Development

Since its inception, DJS IMPULSE has focused on building foundational aerospace capability through structured design, fabrication, and testing activities.

High Powered Rocket Development

The team has successfully completed the conceptual design and fabrication of multiple sounding rocket configurations, focusing on structural integrity, aerodynamic stability, and subsystem integration.

NIMBUS was the team's first successfully developed high powered rocket.
The rocket was launched in AUGUST 2025, and had reached an apogee of upto 600m.

INDRA was the team's second successfully developed high powered rocket.
The rocket was launched in JANUARY 2026, and had reached an apogee of upto 900m.

Static Tests

The team has conducted controlled static motor tests to characterize propulsion performance and validate structural and safety parameters.

- Design and fabrication of a static test stand
- Instrumentation for thrust measurement and data logging
- Post-test performance analysis and thrust curve evaluation
- Iterative refinement based on test data

C. Technical Domains

The team operates through specialized technical subgroups, each focusing on a critical aerospace domain.

Structures & Airframe

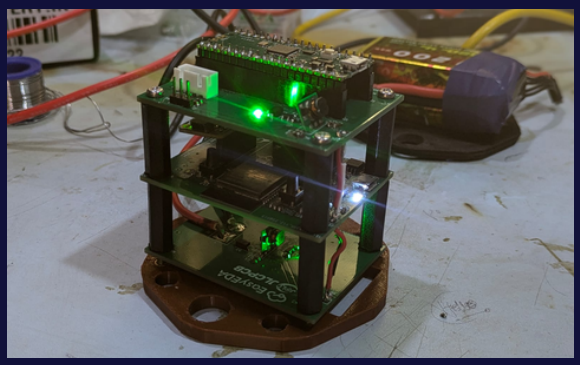
Responsible for mechanical design and fabrication of the rocket body, fin assembly, and structural reinforcements. This domain conducts stability analysis, material selection, and structural validation to ensure aerodynamic integrity and flight readiness.

Propulsion

Handles motor integration, static motor testing, thrust characterization, and safety compliance. This domain ensures safe propulsion handling, test stand operations, and performance validation.

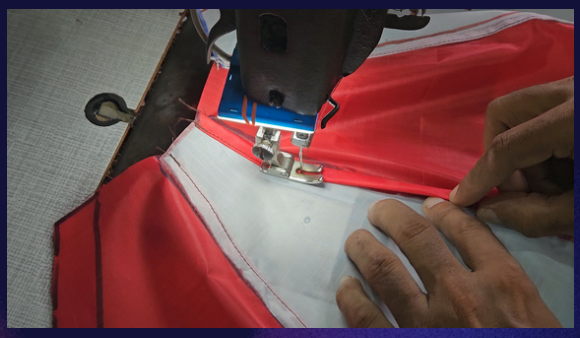
Avionics & Payload

Manages the development and integration of the flight computer and experimental payloads. Responsibilities include sensor calibration, power system design, data logging, event triggering, payload experimentation, and post-flight data analysis.



Recovery

Designs and validates deployment mechanisms and parachute systems to ensure safe descent and hardware recovery. Focus areas include deployment sequencing, descent rate optimization, and recovery load management.



Project Objectives

Primary Objectives

- Develop and successfully launch **student-built high powered rockets** with defined altitude and payload objectives within a 12-month cycle.

- Participate in International Rocketry Competition, **Latin American Space Challenge (LASC)**, and represent the institution, benchmarking performance against industry-aligned standards.

LATIN AMERICAN
SPACE CHALLENGE

- Train 40+ engineering students across propulsion, avionics, structures, recovery, and systems integration through hands-on project execution.

Implementation Plan

The project will be executed in structured phases over the year.

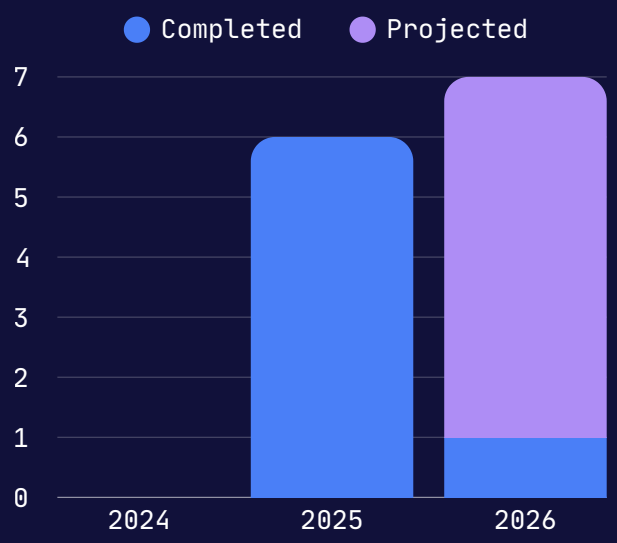
Month	LASC	Outreach
March	-	-
April	Design (PDR)	-
May	Manufacturing	-
June	Manufacturing (CDR)	Workshops
July	Testing	-
August	Testing (FRR)	Workshops
September	Competition	-
October	-	-
November	-	-
December	-	Impact Reporting

PDR : Preliminary Design Review
CDR : Critical Design Review
FRR : Flight Readiness Review

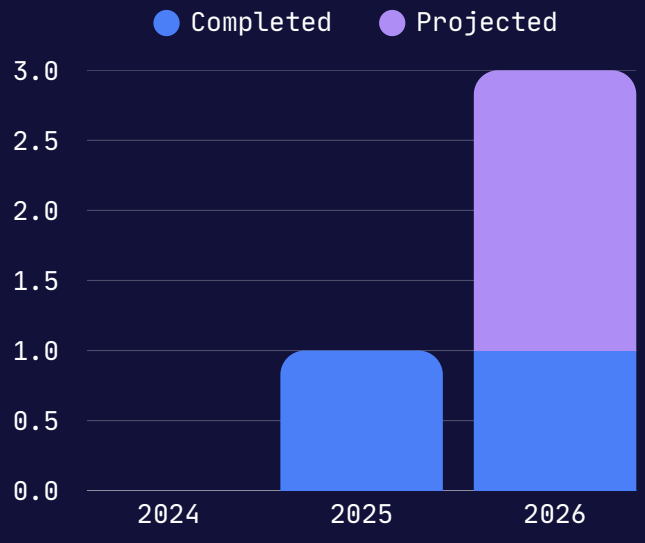
Key Performance Indicators

TECHNICAL EVOLUTION

2024 was our foundation of rigorous research. In 2025, we shifted to hardware validation with 6 successful static fires and our maiden launch. By February 2026, we have already matched 50% of last year's testing cadence.



STATIC TESTS



ROCKET LAUNCHES

3 STATIC TESTS FOR OUR FIRST LAUNCH NIMBUS

Projected Apogee of 850 meters.
Achieved Apogee **600 meters.**
Upto 70% accuracy.

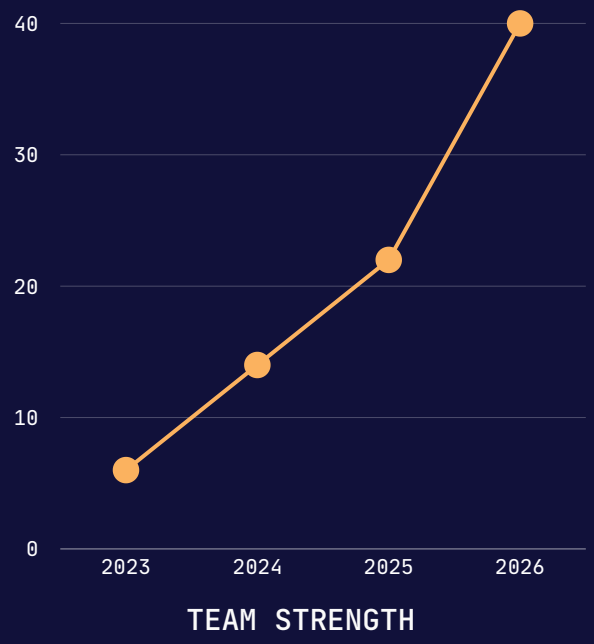
4 STATIC TESTS FOR OUR SECOND LAUNCH INDRA

Projected Apogee of 1000 meters.
Achieved Apogee **900 meters.**
Upto 90% accuracy.

Key Performance Indicators

SCALING TALENT

We have seen a 560% growth in team size since our inception. We aren't just building rockets; we are building a workforce. By the end of 2026, we will have 40 students trained in advanced CAD, avionics, and systems engineering.



COMMUNITY SERVICE & ENGAGEMENT

In the upcoming year, we AIM to host 2-3 technical workshops to train 100+ students in STEM basics

AT A GLANCE

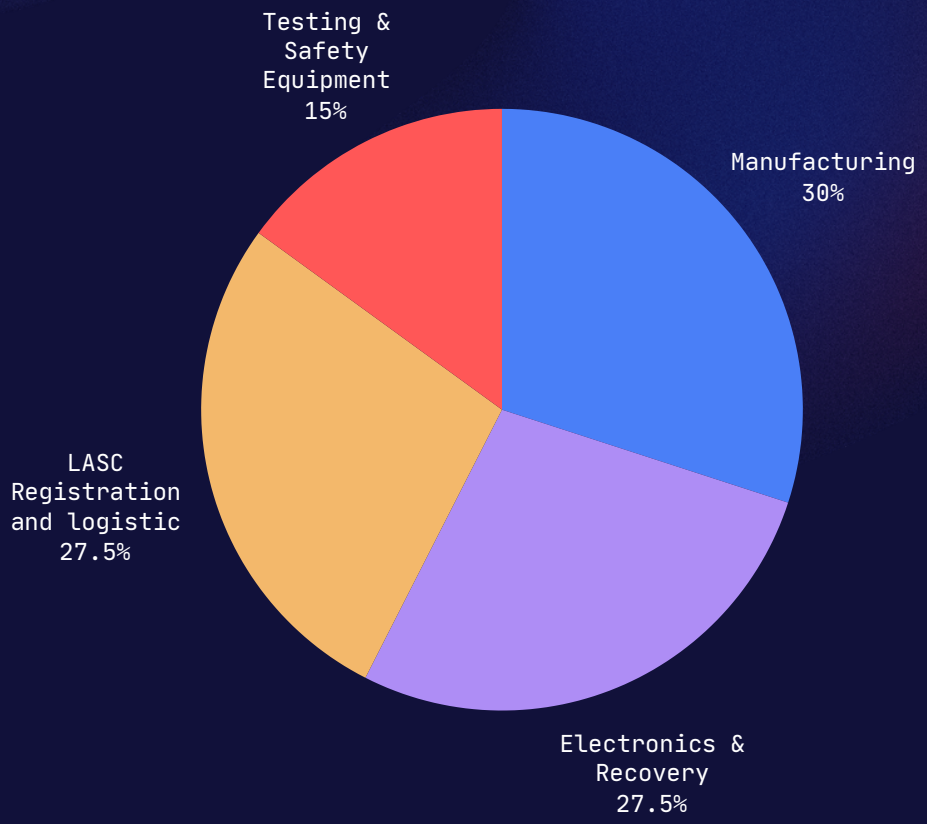
Metric	2024 (R&D)	2025 (Validation)	2026 (Performance)
Launches	0	1	**2+ (Projected)**
Static Tests	0	4	**6+ (Projected)**
Students Trained	14	22	**40**
Workshops	0	0	**2 (Projected)**
Reach	Local	Regional	**International**

Detailed Budget

Budget allocation overview and internal distribution

The total CSR funding requested is: **₹ 2,00,000**

The budget has been structured into three focused program components to ensure measurable technical development, research advancement, and community impact.



The budget distribution ensures:

- **57.5%** investment in **manufacturing of rocket and its related components**
- **27.5%** investment in **LASC registration and logistics**
- **15%** investment in **ensuing safety and comprehensive testing**

This balanced allocation supports both technical excellence and educational impact, aligning with CSR objectives related to education, skill development, and scientific advancement.

Detailed Budget

Budget allocation overview and internal distribution

COMPETITIVE ROCKET DEVELOPMENT

This allocation supports the design, fabrication, integration, and competition participation of a complete high powered rocket system.

TASKS & DOMAINS	BUDGET NEEDED
MANUFACTURING OF ROCKET & MOTOR	60,000
AVIONICS, PAYLOAD & RECOVERY	55,000
LASC REGISTRATION & LOGISTICS	55,000
TESTING & SAFETY EQUIPMENT	30,000
TOTAL	**2,00,000**

The budget prioritizes:

- Hands-on aerospace system development and competition readiness
- Establishment of structured propulsion research capability
- Community engagement through educational workshops

Each budget component is linked to clear project goals and measurable skill development outcomes. The allocation focuses on safety, proper documentation, and reusable infrastructure to ensure the program remains sustainable even after the funding period.

Sustainability

This project contributes to the United Nations Sustainable Development Goals (SDGs) by promoting innovation, quality education, and responsible engineering practices. Through hands-on aerospace development, students gain practical technical skills while building sustainable research infrastructure for future teams.

KEY **SDG CONTRIBUTIONS**:

- **SDG 4 – Quality Education**: Provides experiential learning in aerospace engineering, avionics, and systems integration.
- **SDG 9 – Industry, Innovation and Infrastructure**: Encourages development of indigenous student-led aerospace technology and experimental infrastructure.
- **SDG 12 – Responsible Consumption and Production**: Focus on reusable components, efficient material usage, and careful testing to minimize waste.
- **SDG 17 – Partnerships for the Goals**: Collaboration between students, faculty, and industry mentors to advance aerospace research.

- Static testing infrastructure will remain with us for future tests
- Documentation and design reports will be preserved for future batches
- Junior members will be trained annually to ensure continuity
- Reusable components will reduce future costs
- Research learnings will support advanced project development

THROUGH STRUCTURED PLANNING AND LONG-TERM KNOWLEDGE TRANSFER, THE PROJECT ENSURES RESPONSIBLE EXECUTION TODAY AND SUSTAINED AEROSPACE CAPABILITY FOR FUTURE STUDENT BATCHES.

Visibility & Branding

We view CSR support as a long-term partnership aimed at advancing aerospace education and technical capability. The sponsoring organization will receive structured visibility and recognition across project activities.

ON PROJECT BRANDING

- **Logo placement on Rocket Airframe**
- **Logo on team apparel**
- **Branding on workshop materials & presentations**
- **Acknowledgement in technical reports & documentation**

DIGITAL & MEDIA RECOGNITION

- **Sponsor acknowledgement on official social media platforms**
- **Recognition in post launch content**
- **Website acknowledgement**

INSTITUTIONAL RECOGNITION & ENGAGEMENT

- **Sponsor mention during college technical events**
- **Recognition during STEM workshops & outreach programs**
- **Oppurtunity for interaction session with student team**
- **Recognition during milestone review presentations**

REPORTING AND IMPACT VISIBILITY

- **Quarterly progress updates**
- **Documentation of student and outreach programs**
- **Final impact and utilization reports**

Contact Us!

We sincerely appreciate your interest in supporting student-led aerospace innovation. We look forward to the possibility of building a meaningful partnership and are happy to provide any additional information required.