



GOVERNMENT OF  
CHHATTISGARH



# IGNITE INDIA - 2025

A NATIONAL LEVEL ROCKETRY AND DRONE-TECH COMPETITION



Technology Partner



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# About us

**Inspirovision Technologies LLP (ISRO Certified Space Tutor)** proudly presents **IGNITE INDIA – 2025**, a national-level rocketry, drone-tech competition & showcase, to be held on **04<sup>th</sup> & 05<sup>th</sup> October 2025 in Bilaspur, Chhattisgarh**. IGNITE INDIA – 2025 is not just a competition — it is a national platform to spark India's next generation of aerospace talent, especially from grassroots regions where innovation thrives silently.

The program has been designed not only to celebrate flying machines, but to identify those rare teams who are ready to build the future of India's aerospace sector — and possibly, become part of something much bigger that's silently taking shape in the heart of Chhattisgarh. This event offers participants the chance to build and launch rockets, demonstrate high-performance drones, receive technical training, and unlock hidden opportunities in India's emerging space-tech landscape.

## What makes this program special?

Somewhere in Chhattisgarh, a new-age space startup is quietly scouting for real talent. Top teams from IGNITE INDIA may be invited to **join this stealth mission** — contributing to future space and drone projects.

## Event Details:

**Registration Fees:** INR 12,000 per team; Max 05 members (Mentor Optional). This event is open for all space enthusiasts **aged 14 and above** (Includes Stay, Meals, Certification & Event Access)

**Venue:** B.R YADAV Indoor Stadium, Raj kishore Nagar, Chhattisgarh.

**Date:** 04<sup>th</sup> & 05<sup>th</sup> October 2025

**Last Date to Register:** 15<sup>th</sup> August 2025

**Note:** Limited to 20 Teams Only – Apply early to secure your spot!



# Prize Structure for IGNITE INDIA – 2025

MAIN WINNERS (Top Performance in both categories)

RANK	PRIZE AMOUNT	NOTES
1st	INR 1,00,000	For the highest scoring team across all technical + innovation criteria
2nd	INR 50,000	For second highest overall performer
3rd	INR 30,000	For strong innovation/technical merit

Best in Category Awards  
(Awarded separately for Rocketry and Drone segments)

AWARD CATEGORY	PRIZE PER SEGMENT	TOTAL
Best Design	INR 20,000 × 2	₹40,000
Best Flight Performance	INR 20,000 × 2	₹40,000
Best Innovation	INR 20,000 × 2	₹40,000

Team Spirit & Safety Award (Only one for both category)

AWARD CATEGORY	PRIZE AMOUNT	NOTES
"Best Team Discipline & Flight Safety"	INR 25,000	For the most responsible, protocol-following team

## SPECIAL GUEST



**Shri. Arun Sao**  
Hon'ble Deputy Chief Minister of Chhattisgarh

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## CHIEF GUEST



**Shri. Vikas Shrivastava**  
Project Manager,  
GSLV Mk3 Project, VSSC



**Mrs. P. Anandhi**  
Former Scientist ISRO

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## VISIONARIES BEHIND IGNITE INDIA 2025



**Mr. Ranjeet Singh**  
Founder & CEO,  
INSPIROVISION TECHNOLOGIES LLP



**Prof. Nidhish Chaubey**  
E-Cell Incharge, D P Vipra College,  
Bilaspur



**Mr. Shivaganesh Gunasekaran**  
Founder & CEO,  
INI PUBLICATIONS PVT LTD



**Mr. Kaustabh Chakravorty**  
Chief Operating Officer,  
INSPIROVISION TECHNOLOGIES LLP



**Mr. Divyanshu Poddar**  
Founder  
Rocketeers Research Institute



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# IGNITE INDIA - 2025

A NATIONAL LEVEL ROCKETRY AND DRONE-TECH COMPETITION

## ROCKET GUIDELINES



Technology Partner



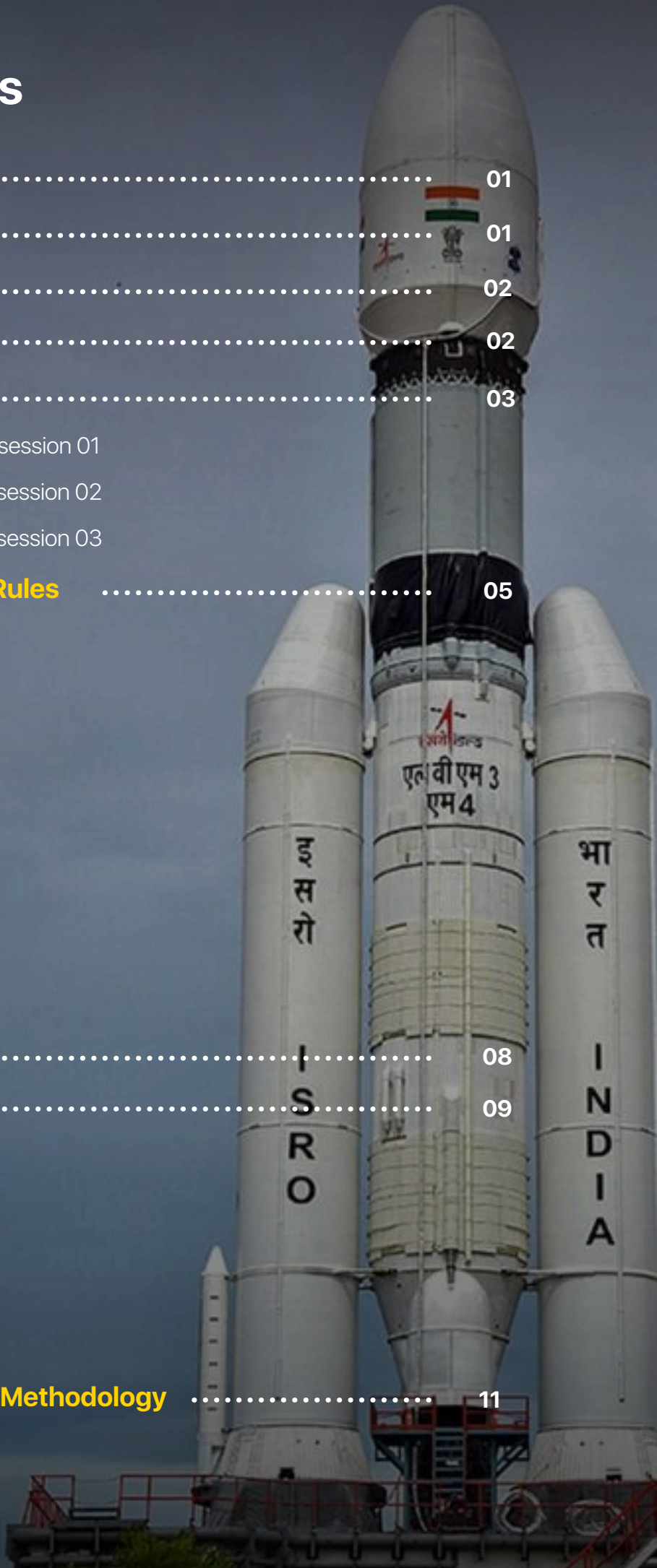
Research Partner



Publications Partner

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# Mission Objective

- To design and build an amateur rocket capable of carrying 1 kg payload to a maximum altitude of 1km.
- To launch and safely recover the rocket.
- To safely recover the payload.

# Competition Timeline

<b>DATES</b>	<b>EVENT SCHEDULES</b>
<b>15<sup>th</sup> August 2025</b>	<b>Last date of registration</b>
<b>16<sup>th</sup> August 2025</b>	<b>Introduction and Orientation</b>
<b>18<sup>th</sup> August 2025</b>	<b>Technical Training &amp; Mentorship session 01</b>
<b>20<sup>th</sup> August 2025</b>	<b>Technical Training &amp; Mentorship session 2</b>
<b>04<sup>th</sup> &amp; 05<sup>th</sup> Sept 2025</b>	<b>PDR (Preliminary Design Review) Submission Deadline</b>
<b>06<sup>th</sup> Sept 2025</b>	<b>Technical Training &amp; Mentorship session 3</b>
<b>25<sup>th</sup> &amp; 26<sup>th</sup> Sept 2025</b>	<b>DDR (Detailed Design Review) Submission and review</b>
<b>04<sup>th</sup> October 2025</b>	<b>Competition Day</b>
<b>05<sup>th</sup> October 2025</b>	<b>Launch Day</b>

# Organiser Provisions

- Launchpad and ignition system to be provided by organisers - Launch rail length is - 3658mm.
- Onsite casting tools to be provided by organisers - Induction stove, pan, wooden spoon, spatula, vibratory bed, gloves, safety goggles, weighing scales, trays, sieves, mixer grinder, rotatory mixer.
- Launch site provisions - work areas for each team, water and snacks, range safety, launch pad and launch control, launch site map.

# Orientation & Introduction

- Time - 120 mins
- The session shall be conducted online over Google Meet.
- All team members can attend the Orientation Program.

## Agenda

- 01) Introduction to Ignite Rocketry Challenge
- 02) Introduction to organizers', mentors and & judges
- 03) Competition guidelines & rules
- 04) Competition format - Day 1
- 05) Competition format - day 2
- 06) Training and mentorship details
- 07) General code of conduct & protocols

# Training & Mentorship

As part of the rocketry competition, three online training and mentorship sessions — each lasting two hours — will be conducted for all participating teams. These sessions are designed to cover a comprehensive curriculum including an overview of model, amateur, and orbital class rockets, subsystem and component design, amateur rocket construction techniques, aerodynamics, propulsion, and solid rocket motors. Additional modules will delve into avionics, payload design, data acquisition and analysis, as well as assembly, integration, and motor installation.

The purpose of these sessions is to equip student teams with the foundational and practical knowledge necessary to design, build, and launch safe and effective rockets. Training and mentorship are critical elements in such competitions, offering hands-on guidance and real-world context to theoretical learning. By engaging deeply with experienced mentors and structured content, participants gain valuable skills in systems engineering, teamwork, and problem-solving —laying the groundwork for strong learning outcomes and meaningful technical development.

## Technical Training & Mentorship Session 01

- Time - 120 mins
- The session shall be conducted online over Google Meet.
- All team members can attend the Orientation Program.

### Agenda

- 01) Overview of model, amateur & orbital class rockets
- 02) Details of components & subsystems
- 03) How to build an amateur rocket
- 04) Aerodynamics & structure
- 05) Rocket propulsion
- 06) Solid rocket motors

# Technical Training & Mentorship

## Session 02

- Time - 120 mins
- The session shall be conducted online over Google Meet.
- All team members can attend the Orientation Program.

### **Agenda**

- 01) Avionics
- 02) Payload
- 03) Data acquisition & analysis

# Technical Training & Mentorship

## Session 03

- Time - 120 mins
- The session shall be conducted online over Google Meet.
- All team members can attend the Orientation Program.

### **Agenda**

- 01) Assembly, integration and testing
- 02) Motor Integration

# Rocket Building Guidelines & Rules

## Rocket

- Any rockets with a stability factor below 1.0Cal shall not be permitted for launch
- Wet Weight - <15000gms
- Length - <2000mm
- Outer Diameter - <140mm

## Nose Cone

- Outer diameter - <140mm
- Length - <350mm
- Use of metals is not permitted

## Body Tube

- Outer diameter - <140mm
- Length - <1600mm
- Use of metals is not permitted

## Recovery System

- Target landing velocity - <6m/2

# Rocket Building Guidelines & Rules

## Internal Structure & Mounts

- Use of metals is not permitted except for screws or metal strips
- Metal strips thickness - <0.5mm
- Metal strips width - <50mm

## Motor Mounts

- Motor retention mechanism is mandatory
- Use of metals is not permitted except for screws or metal strips
- Metal strips thickness - <0.5mm
- Metal strips width - <50mm

## Avionics & Ejection System

- It is mandatory to deploy a recovery system
- The payload may also be deployed if required as per mission objectives
- It is mandatory to capture and store the following data points:
  - Apogee Altitude
  - Time stamps - launch, ejection trigger(s), apogee, landing

# Rocket Building Guidelines & Rules

## Payload

- Weight - =1000gms
- Underweight or overweight payloads shall not be allowed
- Use of mass simulator is permitted
- Payload innovation ideas:
  - Onboard data storage
  - Positioning and tracking data
  - Video (more points for multiple streams)
  - Biological experiment
  - sounding/environmental observations
  - Autonomous Independent powered flight
  - GPS/Navic (extra points for Navic)
  - Other innovative payloads

## Launch Lugs

- It is mandatory for all teams to use linear bearing - SC10UUOP as launch lugs

# Motor Guidelines & Rules

- Motor specs and design should be informed to organisers for approval. Only approved motors shall be permitted.
- Use of COTS Motors is permitted subject to approval on a case to case basis.
- The casting & curing setup provided by organisers during the competition is compatible only with KNSU, KNDX, KNSB Propellants.
- Access to the casting setup shall be provided to the teams 1 day before the launch event.
- Each propellant grain shall be inspected by the on-site experts. Use shall be subject to approval.
- The teams will get up to 3 attempts to cast in case their grain is rejected.
- Propellant weight - <3000 gms
- Motor dry weight - <4000 gms
- The teams have to bring their own specialized casting tools such as the ones listed below:
  - Fuel & Oxidiser
  - Casting tube
  - Inhibitor surfaces
  - Casting base
  - Core rods & rammer(if required)

# **PDR & DDR Review Details**

## **Preliminary Design Review (PDR)**

The PDR is the first major milestone in the rocketry competition where each college team presents the conceptual and preliminary design of their rocket. This includes early-stage engineering analysis, system requirements, materials selection, safety considerations, and expected performance metrics. The goal is to demonstrate that the team has a solid understanding of the mission requirements and a feasible plan to build and launch a safe, functional rocket.

## **Detailed Design Review (DDR)**

The DDR marks the stage where teams showcase their finalized rocket designs, supported by detailed engineering drawings, simulations, testing data, avionics architecture, and payload functionality. It reflects the team's transition from planning to execution, emphasizing technical accuracy, subsystem integration, risk mitigation strategies, and readiness for fabrication and launch.

## **Review Proces**

The reviews shall be conducted online individually for each participating team by a committee of five experienced mentors. Teams will be evaluated on their engineering rigour, design clarity, resourcefulness, innovation, and their ability to effectively present and communicate their ideas. This review plays a critical role in guiding teams toward building safe, high-performance rockets.

# PDR & DDR Review Details

## PDR Requirements

- Dimensions, specifications of the rocket
- Materials (tentative) of important components and sub-assemblies
- Basic motor design & thrust profile
- Open rocket simulation
- Targeted weight
- Targeted apogee
- Targeted stability factor
- Ejection mechanism details

## DDR Requirements

- Detailed Engineering drawings of complete system
- Materials (Final) of all components and sub-assemblies
- Avionics design with details of all components, circuit diagram, algorithm and code
- Payload design with details of all components, circuit diagram, algorithm and code
- Detailed motor design and specifications
- Trajectory simulations
- Grain design
- Burn simulations
- Ejection and deployment ground test video and data
- Payload drop test video and data

# Judgement Criteria & Scoring Methodology

Ignite Rocketry Challenge Score Sheet				
Details				
Team Name				
Team Number				
Institution				
Member 1 Name				
Member 2 Name				
Member 3 Name				
Member 4 Name				
Member 5 Name				
Judge Name				
Category	Metric	Total Points	Methodology	Awarded Score
Design (Teams shall be relatively scored on a Linear curve.)	Wet Weight	10	Lower is better.	
	Apogee	10	Higher is better.	
	Landing Velocity	10	Lower is better.	
	Stability Factor	10	Below 1.0Cal is not permitted. Closest or equal to 1.5Cal is better.	
	Rod Exit Velocity	10	Higher is better.	
	Flight Model Validation	10	Lower is better.	
Flight	Successful Stable Flight	10	0 in case of unstable flight or launch failure	
	Successful Recovery System Ejection	10	0 in case of no ejection	
	Successful Rocket Recovery	10	0 in case rocket is not recovered successfully	
	Successful Payload Recovery	10	0 in case rocket is not recovered successfully	

# Judgement Criteria & Scoring Methodology

	Attitude Ceiling Compliance	10	0 in case rocket overshoots 1000m	
Avionics	Apogee Altitude - Onboard data storage and on ground retrieval	10	Points are awarded on successfully achieving each functionality and/or successful data acquisition	
	Time stamps - launch, ejection trigger(s), apogee, landing	10		
	Ejection - recovery system	10		
	Rocket mounted camera	10		
	Real time telemetry	10		
	Dual deployment & recovery	10		
	GPS/Navic data - (extra points for Navic)	10		
	Redundancy	10		
	Altitude/Velocity/Acceleration Vs Time graph	10		
	Temperature	10		
	Any other innovation	10		
Payload	Success as per mission Objectives	10	Points are awarded if payload works as designed. 0 for dummy payloads	
	Innovation Score	10	Points are awarded on the basis of payload innovation	
Reporting & Review	PDR	10	Review committee to be at least 5 judges. Each team is scored by each judge between 0-10pts. Final score to be mean	
	DDR	10		

# Judgement Criteria & Scoring Methodology

			of all 5 scores.	
Award Category	Scoring Formula	Calculated Score		
General Award	$(0.5 * \text{Design Score}) +$ $(0.6 * \text{Flight Score}) +$ $((\text{Avionics Success Score}/3) + (\text{Avionics Innovation Score}/8)) +$ $(0.5 * (\text{Payload Success Score} + \text{Payload Innovation Score})) +$ $(0.5 * (\text{PDR Score} + \text{DDR Score}))$	0		
Best Design	Highest total design score	0		
Best Flight Performance	$((5 * \text{Design Score})/6) +$ $(\text{Flight Score})$	0		
Most Innovative	$(\text{Design Score}/6) + (0.5 * (\text{PDR Score} + \text{DDR Score})) +$ $(\text{Avionics Success Score}/3) +$ $(\text{Payload Success Score}) +$ $(3 * \text{Avionics Innovation Score}/8) +$ $(3 * \text{Payload Innovation Score})$	0		

**IGNITE INDIA – 2025** is not just a competition — it is a national platform to spark India's next generation of aerospace talent, especially from grassroots regions where innovation thrives silently. The program has been designed not only to celebrate flying machines, but to identify those rare teams who are ready to build the future of India's aerospace sector — and possibly, become part of something much bigger that's silently taking shape in the heart of Chhattisgarh.

Uniting innovation and national progress, IGNITE INDIA 2025 stands as a premier flagship event, made possible by the powerful collaboration with the **Government of Chhattisgarh** and **Inspirovision Technologies LLP**. We are honored to partner with **D.P. Vipra College, Bilaspur**, as our esteemed institution partner. **Rocketeers** serves as our technology partner, ensuring the seamless execution of our innovative endeavors. We are also grateful for the vital support of **9SP & Agastya Research Collective** as our research partner and **INI Publications Pvt Ltd, Tamil Nadu**, as our publications partner in making this event a success.

## Visionaries Behind IGNITE INDIA - 2025



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