NOVARIS

COMPETE · EXPERIENCE · EXPLORE

2027 · RMK EDITION

FUTURE TECHNOLOGY CHAMPIONSHIP

Where young innovators build tomorrow.

A one-day championship for school students in robotics, drones and innovation, with hands-on workshops, tech talks and a future tech experience zone.



01

WORKING MODEL

IDENTIFY · BUILD · DEMONSTRATE



02

ROBO RACE

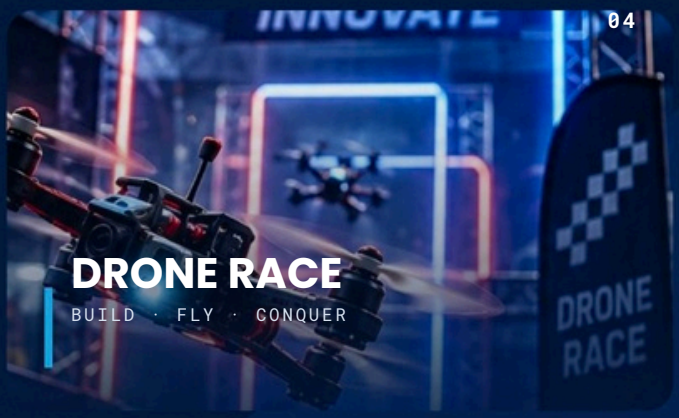
BUILD · NAVIGATE · REACH



03

ROBO SUMO

BUILD · BATTLE · OUTMANEUVER



04

DRONE RACE

BUILD · FLY · CONQUER

DATE

24th January 2027

Sunday

VENUE

R.M.K. Engineering College

Kavaraipettai, Tamil Nadu-601206

OPEN TO

Grades 3 – 12

Team Size: 1–2 Students

INSIDE THIS BROCHURE

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“Come to compete. Stay to experience. Leave inspired.”

NOVARIS brings competitions, hands-on technology and new ideas together for one day built entirely around young innovators.

4
TECHNOLOGY EVENTS

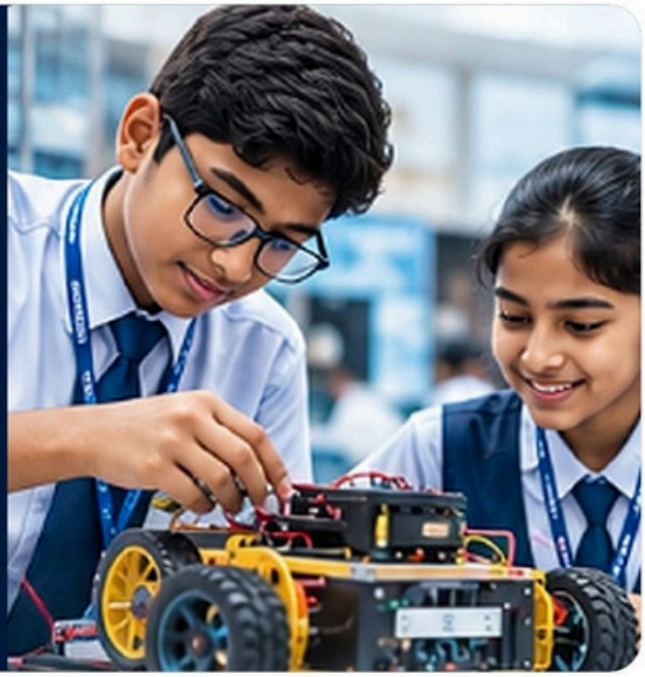
₹5 Lakh+
CASH PRIZE POOL

100%
PARTICIPANTS CERTIFIED

WHY JOIN NOVARIS

More than a competition.

A championship that challenges school students to compete, create and explore through robotics, technology and innovation, and to discover the technologies shaping tomorrow.



NOVARIS 2027, the Future Technology Championship, brings together young builders, thinkers and problem-solvers from Grade 3 to Grade 12 for one full day at R.M.K. Engineering College. Students bring the robots, drones and working models they have designed and built themselves, and put them to the test in front of expert judges.

The championship rewards clear thinking as much as technical skill. A simple, intelligent idea that works well can beat a complex one that doesn't. Beyond the arenas, every participant can explore emerging technology, attend talks by industry experts and join hands-on workshops, all included with registration.

Three ways to take part in the day

01

COMPETE

Enter one of four technology events and test your build against the best young innovators in the region.

02

EXPERIENCE

Step into the Future Tech Experience Zone and try emerging technologies hands-on.

03

EXPLORE

Learn from industry experts in Tech Talks and pick up new skills in guided workshops.

4	₹5 Lakh+	Awards	Free
TECHNOLOGY EVENTS	CASH PRIZE POOL	+ MEDALS FOR WINNERS	WORKSHOPS, TALKS & ZONE

· *Hosted at R.M.K Engineering College*

THE ESSENTIALS

The championship at a glance

DATE
24th Jan 2027
Sunday · full-day event

VENUE
R.M.K. Engineering College
RSM Nagar, Kavaraipettai, Gummidipoondi Taluk, Thiruvallur District, TN 601 206

ELIGIBILITY
Grades 3 – 12
Studying in these grades in the current academic year

TEAM SIZE
Up to 2 students
Both members take part in the event

FEE
₹1,000
Per team, per event ·

REGISTER
novaris.events/rmk
Direct entry · no preliminary round

Competition categories

SUB-JUNIOR
Grades 3 – 5

JUNIOR
Grades 6 – 8

SENIOR
Grades 9 – 12

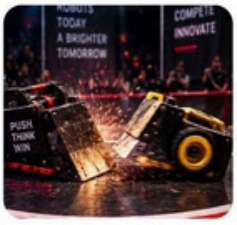
Four events. Pick your challenge.



Working Model
Identify a real-world problem within a theme and demonstrate a working solution.
PAGE 05 →



Robo Race
Drive your self-built robot through an obstacle-filled race arena, fast and in control.
PAGE 07 →



Robo Sumo
Push your opponent out of the ring and be the last robot standing.
PAGE 09 →



Drone Race
Pilot your own drone through an indoor aerial course of gates and precision zones.
PAGE 11 →

EVENT 01

Working Model

IDENTIFY · BUILD · DEMONSTRATE

A theme is given. Find a real-world problem within it, develop an idea to solve it, and turn that idea into a working solution you can demonstrate.



₹1,000 / TEAM | UP TO 2 MEMBERS | GRADES 3 – 12 | 24 JAN 2027

ABOUT THE CHAMPIONSHIP

The NOVARIS Working Model Championship is a platform for school students to showcase their **innovation, creativity and problem-solving skills** through a functional project. Teams participate directly at the NOVARIS event with their working model, prototype or technological solution.

WHO CAN TAKE PART

Students of Grades 3 to 12 compete in three categories: **Sub-Junior** (Grades 3–5), **Junior** (Grades 6–8) and **Senior** (Grades 9–12). Teams have a maximum of two students, and **both members should present and demonstrate** the project.

Themes · Real problems. Creative solutions.

01
Smart Lifestyle
Home, school, personal convenience, automation, accessibility, everyday problems

02
Green Planet
Clean energy, water conservation, waste reduction, recycling, pollution, sustainable living

03
Future Mobility
Smart transportation, electric mobility, ADAS, traffic management, parking, public transport, future vehicles

04
Healthy Future
Health monitoring, assistive technology, elderly care, emergency response, hygiene, fitness, wellbeing

05
Future Food & Farming
Smart farming, irrigation, crop monitoring, food wastage, food storage, agricultural automation

06
Safe & Secure
Personal, school and road safety, disaster management, fire safety, security systems, accident prevention

07
Future Learning
Smart classrooms, learning aids, EdTech, accessibility in education, interactive and personalised learning, STEM tools

08
Open Innovation
Any innovative idea or solution that does not fit within the other themes

PROJECT REQUIREMENT

Your project must be a functional working model, prototype or technological solution.

It does not need advanced technology to score well. **A simple but intelligent solution that works effectively may outperform a technically complex project** that lacks clarity, usefulness or execution.

From idea to demonstration

IDENTIFY	IDEATE	BUILD	TEST	DEMONSTRATE
Pick a theme and a real problem	Develop an idea to solve it	Make it a working model	Check it works, improve it	Explain and show it to the judges

1.5 × 3 ft
MAX MODEL SIZE
Larger needs prior permission

Own power
POWER SUPPLY
Not provided by organisers

2 students
MAX TEAM SIZE
Both present the project

AI allowed
FOR LEARNING & CODING
You must explain the result

Rules & guidelines

01 **Originality.** The project should be the students' own work. Commonly available components, development boards, sensors, software and other materials may be used.

02 **Working model.** The project should be functional and capable of being demonstrated at the event.

03 **Student understanding.** Students should understand the project, its working principle and the technology or concepts used.

04 **Project construction.** The model should be stable and durable enough for demonstration. Avoid asbestos sheets and cardboard.

05 **Model size.** Below 1.5 ft × 3 ft. Projects exceeding this size require prior permission from the organisers.

06 **Power supply.** Not provided. Teams make their own arrangements; any special electrical requirement must be confirmed with the organisers in advance.

07 **Safety.** Projects must be safe to operate, with no hazardous materials and no risk to participants, judges or the venue.

08 **Presentation.** Teams must explain their idea and demonstrate the working of their project to the judges.

09 **Use of AI.** AI tools may be used for learning, research, brainstorming or coding assistance. Students must understand and be able to explain the final project.

10 **Disqualification.** Projects may be disqualified for plagiarism, unsafe practices, deliberate misrepresentation or inappropriate behaviour.

11 **Judging.** The judges' decision is final. In case of a tie, an additional interaction or demonstration may be conducted.

12 **Organisers' rights.** The schedule, competition format or procedures may be modified when required for the smooth conduct of the event.

✦ **Stage final:** depending on the number of participating teams, an additional final round may be conducted where students present their model on stage.

What the judges look for

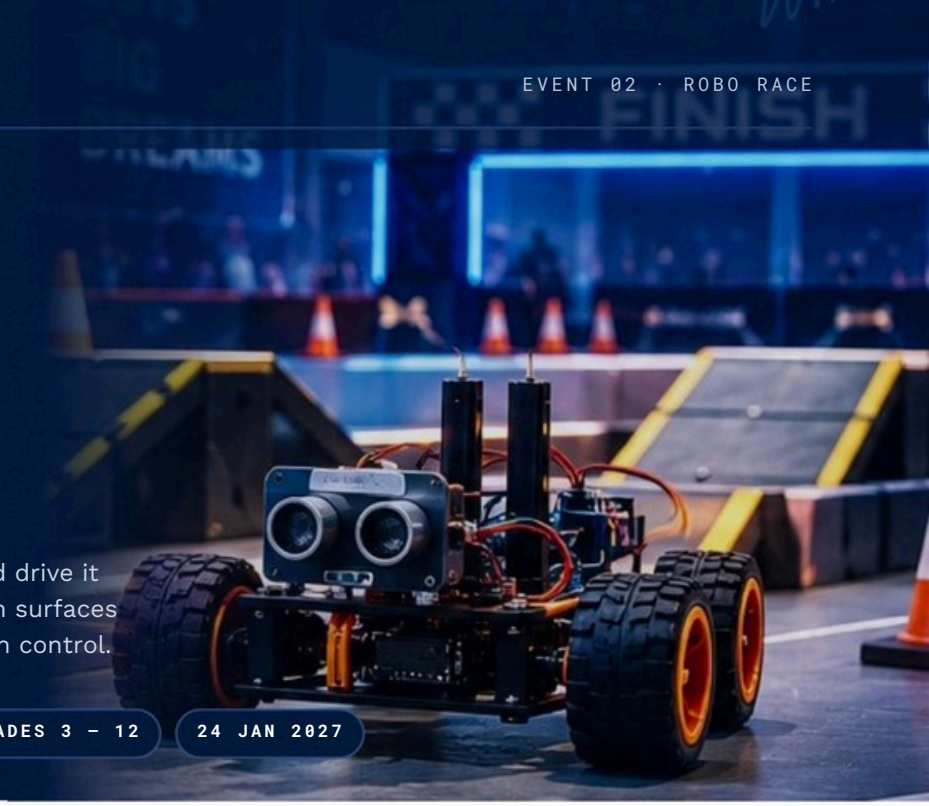
Originality · A model that works · Your understanding · Usefulness & clarity · Presentation

EVENT 02

Robo Race

BUILD · NAVIGATE · REACH

Design, build and control your own robot and drive it through a race arena of turns, ramps, uneven surfaces and obstacles, as fast as possible and fully in control.



₹1,000 / TEAM | UP TO 2 MEMBERS | GRADES 3 – 12 | 24 JAN 2027

GENERAL INFORMATION

Robo Race is a hands-on robotics competition that tests **speed, control, stability, precision, engineering skill and problem-solving**. Teams must **build and bring their own robot**; the event is not intended for commercial RC cars, ready-made robotic toys or completely pre-assembled robots.

WHAT IT DEVELOPS

- Engineering & fabrication
- Problem-solving
- Robot control & navigation
- Mechanical design & stability
- Creativity & innovation
- Teamwork

Robot specifications

25×25×15	3 kg	12V DC	Wireless
MAX SIZE · CM	MAX WEIGHT	MAX VOLTAGE	CONTROL
Length × Breadth × Height	Including battery	Anywhere in the robot	Electrically powered only

BUILD RULES

- Each team must design and build its own robot.
- No IC engines or other combustion-based power systems.
- Commercial RC cars, remote-controlled toys or ready-to-use racing vehicles are not permitted.
- Fully pre-assembled kits without meaningful participant-built integration are not permitted.
- LEGO-based construction is permitted.
- Commercial components (electronics, motors, wheels, batteries, controllers) may be used.
- The robot must be safe for participants, officials, the arena and other robots.

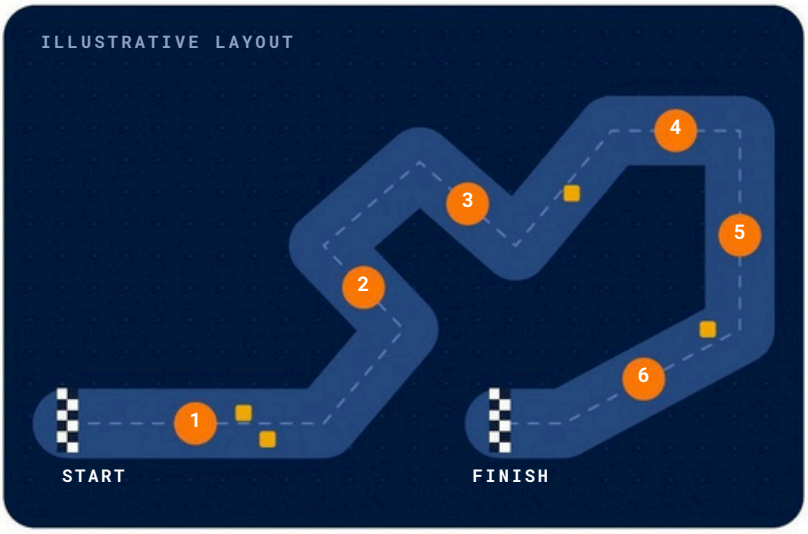
BATTERY & POWER

- Only electrically powered robots; maximum 12V DC.
- Batteries must be securely mounted inside the robot and never exposed in a way that creates a safety risk.
- Teams arrange their own batteries, chargers and power adapters.
- Organisers may inspect the power system before the competition.

Arena preview. Turns, ramps, speed breakers, uneven terrain, narrow passages and obstacles. The final layout is revealed at the event briefing, and teams can inspect the arena before their run.

THE RACE ARENA

Seven kinds of challenge



1. **Speed Track**
   Maximum speed and acceleration
2. **Zig-Zag Path**
   Steering and navigation
3. **Sloped Ramp**
   Motor power and traction
4. **Speed Breakers**
   Stability and suspension
5. **Uneven Terrain**
   Balance and wheel control
6. **Narrow Passage**
   Precision and manoeuvrability

■ **Obstacle Sections**
Control through challenging conditions

Exact layout, dimensions and challenge elements are revealed by the organisers at the event briefing.

Race rules

01 Only registered team members may operate the robot during their run.

02 No external assistance is permitted once the run has started.

03 The robot must remain within the designated race track.

04 Robots start from the designated starting point.

05 The timer starts when the robot begins its run and stops at the designated finish point.

06 If the robot gets stuck, the team may recover or reposition it as instructed by officials.

07 Any recovery or manual intervention may result in a time penalty or score deduction.

08 Teams must follow the instructions of race officials at all times.

09 A restart may be given only at the discretion of the organisers.

10 The organisers' decision on timing, penalties, eligibility and qualification is final.

Scoring & penalties

Rankings are point-based: faster completion and successful navigation earn higher points. Your score can be affected by:

+ Successful completion of track sections
+ Faster race completion time
− Missing or skipping designated sections
− Leaving the track
− Manual intervention
− Failure to follow race instructions
− Unsafe operation

Disqualification

- Robot violates size, voltage or weight limits.
- A commercial RC car or prohibited ready-made robot is used.
- Interfering with another team's robot, or intentionally damaging the arena or another robot.
- Unsafe batteries, wiring or mechanisms.
- Behaviour that compromises safety or fairness, or false information at registration or inspection.

EVENT 03

Robo Sumo

BUILD · BATTLE · OUTMANEUVER



Inspired by traditional Japanese Sumo wrestling. Two manually controlled robots meet in a circular arena, and the goal is simple: push your opponent out and keep your own robot in.

₹1,000 / TEAM | UP TO 2 MEMBERS | GRADES 3 – 12 | 24 JAN 2027

GENERAL INFORMATION

Teams **design, build and control** their own wireless robot, combining mechanical strength, speed, control and strategy to win each match. It is a test of engineering and of nerve: the best robot is the one that is well built *and* well driven.

WHAT IT DEVELOPS

- Mechanical design
- Motor control
- Wireless communication
- Strategic thinking
- Testing & problem-solving
- Sportsmanship

Match format

1 min	25 s	Knockout	Referee
MAX ROUND LENGTH	STATIONARY LIMIT	COMPETITION FORMAT	START COMMAND
Per match	No movement = disqualified	Winners progress	No early starts

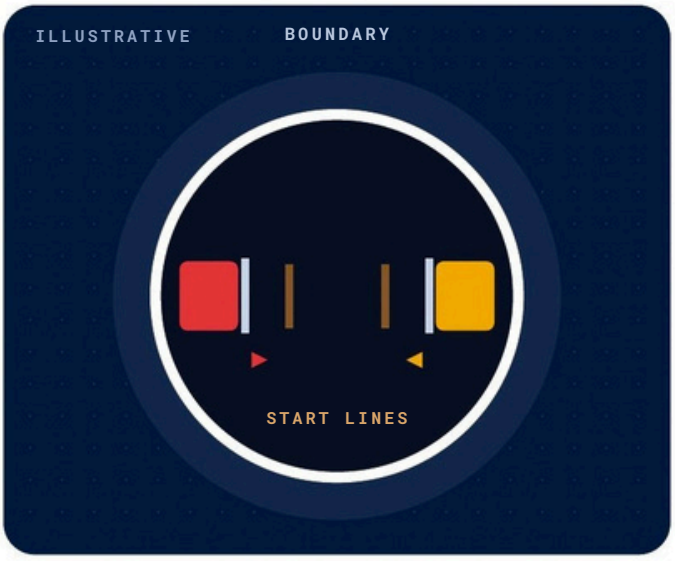
- Two robots compete against each other inside the Robo Sumo arena.
- Robots are placed at their designated starting locations.
- The match begins only after the referee's start command.
- Each round lasts a maximum of 1 minute.
- A robot wins by pushing the opponent **completely outside** the arena boundary.
- A robot loses if it leaves the arena by itself.
- A robot that stays completely stationary for 25 seconds is disqualified.
- If neither robot leaves the arena in time, the judges decide the winner.
- If both robots leave together, the robot that leaves the arena **last** wins.

BUILDER'S TIPS

Keep the robot low and use the full 3 kg for grip. A wedge-shaped front helps get under an opponent. Practise driving until it feels natural: in a 1-minute round, control often beats raw power.

THE ARENA & HOW TO WIN

Last bot standing



WIN 1 **Push out**

Push the opponent completely outside the arena boundary.

WIN 2 **Self exit**

The opponent robot leaves the arena by itself.

WIN 3 **Disqualification**

The opponent is disqualified under the event rules.

No exit within the time limit? The judges determine the winner, and their decision is final. Exact arena specifications are shared by the organisers before the event.

Robot specifications

35×30×15
MAX SIZE · CM
Length × Breadth × Height

3 kg
MAX WEIGHT
Complete robot

12V
MAX BATTERY VOLTAGE
DC rechargeable only

Metal
CHASSIS / FRAME
Metal or aluminium

DESIGN & BUILD

- Designed and built by the participating team.
- **Rubber wheels only**; metal wheels are not permitted.
- No restriction on the type of motor used.
- Wireless control only, through the team's own remote-control system.
- Commercial RC cars or remote-controlled toys are not permitted.

BATTERY & POWER

- DC rechargeable batteries only, such as Li-ion, LiPo or NiMH.
- Battery must be securely fixed so it cannot come loose during the match.
- Batteries must be safe, leak-free and able to last the whole match.
- A **230V AC power point** is provided at the venue for charging.

General rules

01 Report and keep your robot ready when your team is called.
02 Test only in the designated testing area; no practice on the competition arena.
03 Do not intentionally damage the arena or the opponent's robot.
04 The robot must be operated entirely by the team using its own wireless remote.
05 No external assistance is permitted during a match.
06 Moving before the start command resets the start, with one additional opportunity.
07 A repeated early start may result in disqualification.
08 Unethical behaviour, interference or rule violations may lead to disqualification.
09 The decision of the judges and referees is final.
10 The organising committee may modify or update the rules when necessary.

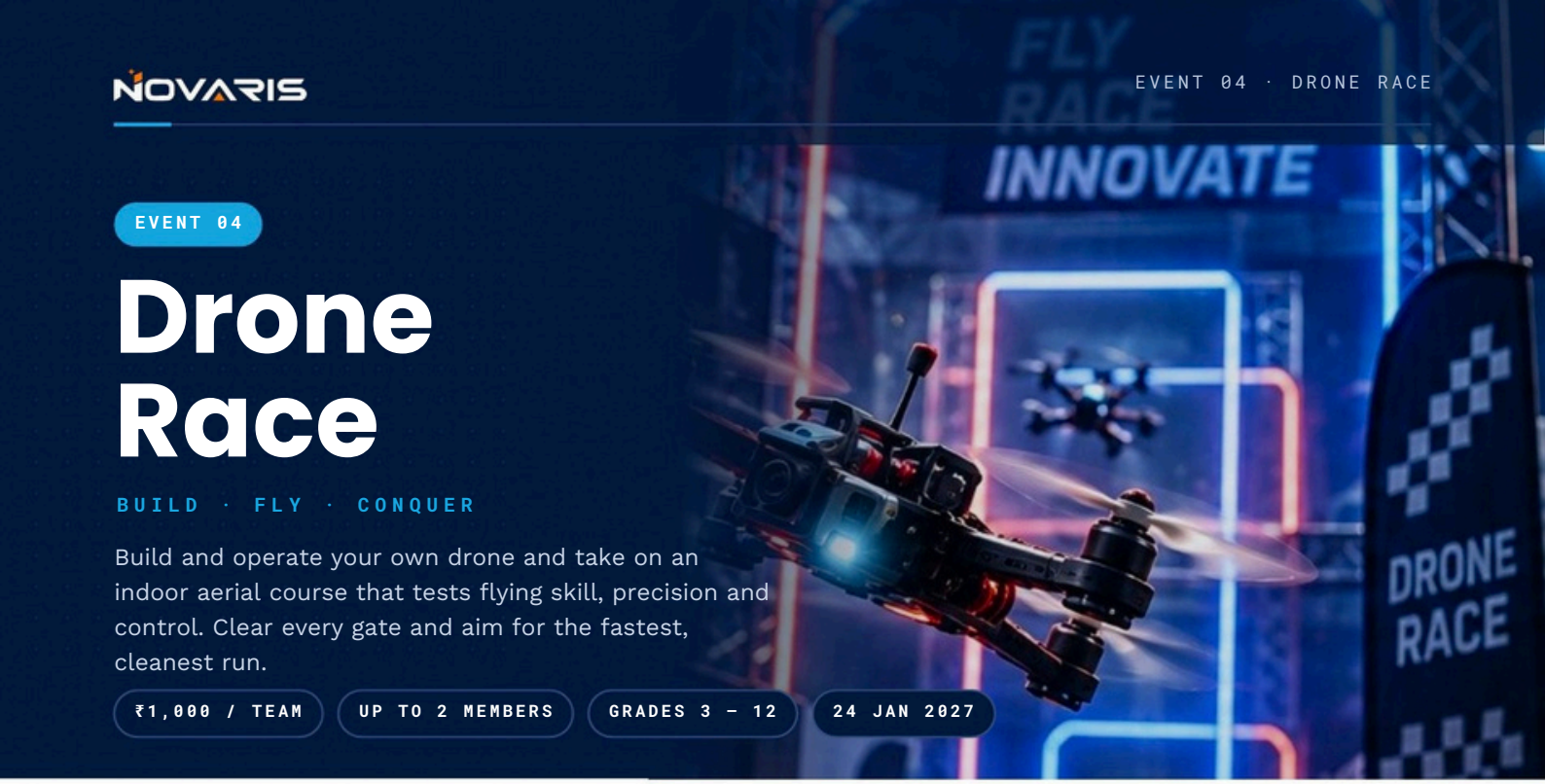
EVENT 04

Drone Race

BUILD · FLY · CONQUER

Build and operate your own drone and take on an indoor aerial course that tests flying skill, precision and control. Clear every gate and aim for the fastest, cleanest run.

₹1,000 / TEAM | UP TO 2 MEMBERS | GRADES 3 – 12 | 24 JAN 2027



GENERAL INFORMATION

Drone Race is an aerial robotics challenge where teams **build, configure and pilot** their own drone through a netted indoor course of gates, hoops and precision zones. It rewards steady hands and quick decisions, and the engineering behind a stable, well-tuned drone.

WHAT IT DEVELOPS

- Flight dynamics
- Electronics & tuning
- Piloting skill
- Spatial awareness
- Safety discipline
- Teamwork

Drone specifications

250 g	250 mm	3S LiPo	Guarded
MAX TAKE-OFF WEIGHT	MAX FRAME SIZE	MAX BATTERY	PROPELLERS
Including battery	Motor-to-motor diagonal	11.1V nominal	Full guards or ducts

BUILD RULES

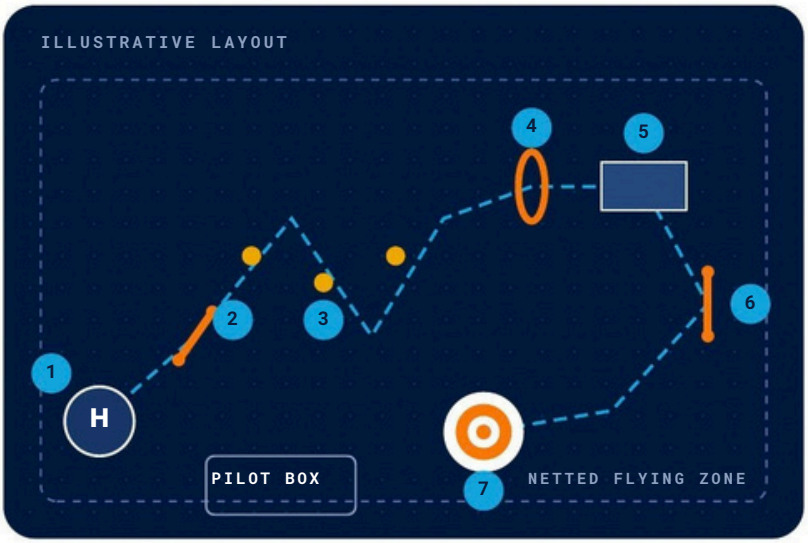
- Each team must build, assemble and configure its own multirotor drone.
- DIY kits are allowed when the team assembles, wires and configures them.
- Ready-to-fly commercial drones, camera drones and toy drones are not permitted.
- Manual piloting only; no autonomous or GPS waypoint flight during a run.
- No payloads, sharp edges or loose parts.
- Line-of-sight or FPV flying is allowed. FPV teams bring their own goggles and use the video channel assigned by the organisers.

RADIO, BATTERY & SAFETY SYSTEMS

- Team's own radio transmitter and receiver, with a dedicated arm / disarm switch.
- Failsafe must disarm or land the drone if the signal is lost; this is checked at inspection.
- Electric power only. LiPo batteries must be undamaged (no swelling) and securely strapped.
- Charge only in the designated area, using a LiPo-safe bag.
- Teams arrange their own batteries, chargers and spares.

THE COURSE

Seven stages, one clean run



1. **Take-off Pad** — Every run starts here
2. **Start Gate** — Timer is live
3. **Slalom Poles** — Weave left and right
4. **Hoop Gate** — Fly through the ring
5. **Tunnel** — Low, narrow pass
6. **High Gate** — Climb and hold height
7. **Precision Landing** — Land on target to finish

The final course, run time and scoring are announced by the organisers at the event briefing.

Flight rules

01 Only registered team members may pilot. One pilot per run; the teammate may act as spotter.

02 Arm the drone only in the flying zone, on the official's command. Outside it, keep batteries disconnected.

03 Runs start from the take-off pad. The timer starts at take-off and stops on landing at the landing pad.

04 Gates must be cleared in the given order and direction.

05 After a crash, the run may continue if the drone can take off again by itself.

06 Hand recovery only with the official's permission, and it carries a penalty.

07 No flying outside the netted zone or over people.

08 No external assistance once the run has started.

09 Restarts only at the organisers' discretion. Their decisions are final.

Scoring & penalties

Ranking is point-based, with higher points for clean navigation and faster times.

+ Gates cleared in the correct order
+ Faster completion time
+ Precision landing bonus
− Missed or skipped gates
− Hand recovery or restarts
− Leaving the flying zone
− Unsafe or reckless flying

Disqualification

- Exceeding weight, size or battery limits, or flying without prop guards.
- Using a ready-to-fly commercial or toy drone.
- Swollen or damaged batteries, or unsafe wiring.
- Flying over spectators or recklessly, or interfering with other teams' radio or video channels.
- False information at registration or inspection.

PACK FOR RACE DAY

Drone and spare propellers · at least three charged batteries · charger and LiPo-safe bag · transmitter · spare motors, tools and zip ties · FPV goggles if flying FPV

PRIZES AND RECOGNITION

Every builder is recognised

CASH PRIZE POOL

₹5,00,000

Exciting awards and prizes await the winners across all four events.

Awards + Medals

Recognition for winners across events and categories.

Certificates

A NOVARIS Participation Certificate for every participating student.

Finalist Honours

Finalists and winners receive additional recognition, awards and prizes as announced by NOVARIS.

EXPERIENCE MORE AT NOVARIS

Learn. Interact. Get inspired.

FREE FOR PARTICIPANTS

Future Tech Experience Zone

Explore emerging technologies live and try them hands-on, from robotics to the latest in future tech.

Tech Talks

Insights that inspire: learn from industry experts and real-world innovators about where technology is heading.

Hands-on Workshops

Get hands-on with new technologies in guided sessions led by experts, and take new skills home.

Included with registration. Hands-on workshops, Tech Talks and the Future Tech Experience Zone are free for all registered participants.

PARTICIPANT FACILITIES

We've got you covered

Focus on the experience. We'll take care of the essentials.

Snacks & Lunch

Available for registered participants and all accompanying companions during the event.

Bus Facility

Transport to . Engineering College from selected locations. Details are shared after registration.

Help Desk

Our team is on hand to help registered participants with event and transportation queries.

YOUR DAY GUIDE

Checklists for a smooth day

BEFORE THE EVENT

- [ ] Register at novaris.events/rmk and keep your confirmation handy.
- [ ] Read the rules for your event in this brochure carefully.
- [ ] Check size, weight and voltage limits against your build.
- [ ] Build, test and fix early; leave time for a full practice run.
- [ ] Working Model teams: confirm any special power needs with the organisers in advance.
- [ ] Charge all batteries and pack chargers, spares and tools.

ON THE DAY

- [ ] Arrive early and report when your team is called.
- [ ] Carry your registration confirmation and school ID card.
- [ ] Be ready for technical inspection of your robot or drone.
- [ ] Test only in the designated testing areas.
- [ ] Follow the instructions of officials and referees at all times.
- [ ] Explore the Tech Zone, talks and workshops between your events.

CODE OF CONDUCT

Fair play

Your work must be your own. Plagiarism or misrepresentation leads to disqualification.

Safety first

Safe builds, safe batteries and safe operation, always.

Respect

Respect other teams, their robots, the officials and the venue.

Honesty

Give accurate information at registration and inspection.

REGISTRATION

Four steps to the arena

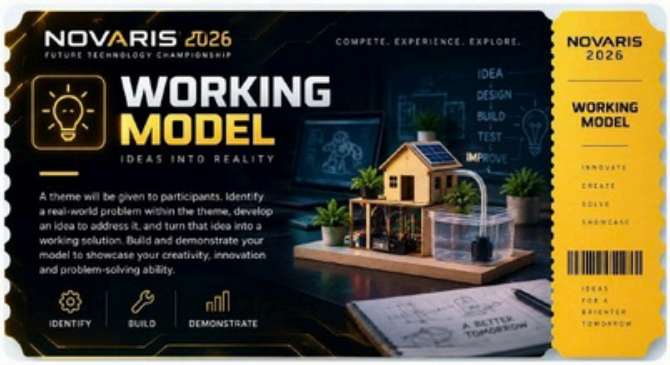
01
Visit
Go to novaris.events/rmk or scan the QR code.

02
Choose
Pick your event: Working Model, Robo Race, Robo Sumo or Drone Race.

03
Register
Add your team (up to 2 students) and pay the fee of ₹1,000 per team.

04
Confirm
Get your confirmation. Bus details are shared after registration.

Official event tickets









SCAN TO REGISTER

novaris.events/rmk

- Fee is ₹1,000 per team, per event. There is no preliminary paid round or separate screening fee.
- Students must be studying in Grades 3–12 during the current academic year.
- A stage final may be conducted based on participation.

VENUE & CONTACT

See you on 24th January



VENUE

R.M.K. Engineering College

RSM Nagar, Kavaraipettal,
Gummidipoondi Taluk,
Thiruvallur District
Tamil Nadu - 601 206

Sunday, 24th JANUARY 2027

CONTACT

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NOVARIS

COMPETE • EXPERIENCE • EXPLORE

Same curiosity. A brighter tomorrow.

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