

Presidency University

INNOVATEX 4.0

DRONETRIX NIGHT Official Rule Book

1. EVENT OVERVIEW

Event Name:

DRONETRIX NIGHT – Owing the Night Sky

Cluster:

MakerSpace Cluster

Event Type:

FPV Night Drone Racing & Night Drone Operations

Mode:

Offline

Team Size:

4 Members per Team (Mandatory)

Event Timing:

6:30 PM – 11:00 PM

Venue:

Presidency University Campus, Bengaluru


Faculty Coordinator:

Dr. Divyarani M. S.

Deputy Director, MakerSpace

Event Student Head:

Tanish K

 9606747879

2. EVENT OBJECTIVE

DRONETRIX NIGHT is a controlled night-time drone competition designed to test **FPV piloting precision, visibility management, and operational safety** under low-light conditions.

The event focuses on:

- Night FPV piloting discipline
 - LED-assisted visibility and orientation
 - Situational awareness in reduced visibility
 - Strict safety compliance
 - Advanced drone handling after dark
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3. TEAM COMPOSITION RULES

- Each team must consist of **exactly 4 members**
- No substitution allowed after registration
- All participants must be students

- Designated FPV pilot required
 - **Spotter mandatory for every FPV flight**
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4. DRONE TECHNICAL SPECIFICATIONS

Base Configuration

(All specifications below remain **identical to DRONETRIX DAY Rule Book**)

- **Drone Type:** Quadcopter only
- **Maximum Weight:** 2 kg (including battery)
- **Maximum Frame Size:** 450 mm
- **Maximum Motor-to-Motor Diagonal:** 300 mm
- **Propeller Size:** Maximum 6 inches
- **Battery Type:** LiPo only
- **Maximum Voltage:** 22.2V (6S LiPo)
- **Fail-Safe:** Mandatory (Immediate auto-land)
- **Frame:** Custom-built or 3D printed

Night-Specific Requirements

- **LED visibility on drone body is mandatory**
- LEDs must remain ON throughout flight
- LED placement must not obstruct propellers or sensors

FPV & Electronics

- FPV transmission: 5.8 GHz only
- Frequency coordination mandatory
- Backup batteries strongly recommended

NOT Allowed

- Autonomous or semi-autonomous systems
- Fixed-wing or hybrid aircraft
- Tilt-rotor systems
- Coaxial or contra-rotating propellers
- Tiny whoop drones
- RF jammers
- LED systems causing glare or pilot disorientation

Any violation results in **immediate disqualification**.

5. GENERAL RULES & GUIDELINES

Registration & Inspection

- Online registration mandatory
- Mandatory night safety briefing
- Low-light drone inspection required
- LED visibility check compulsory
- Teams responsible for all equipment
- Backup batteries compulsory

Flight Conduct

- Flights only in illuminated zones
 - Spotter must maintain visual line-of-sight
 - Officials' commands must be followed instantly
 - Unsafe night maneuvers strictly prohibited
 - Modifications only with official approval
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6. FLIGHT ARENA & NIGHT AIRSPACE RULES

- Fully illuminated **flight zones**, **no-fly zones**, and **spectator zones**
 - Take-off and landing only from designated pads
 - Safety barriers strictly enforced
 - Reduced flight height may be imposed by officials
 - No flying over audience, lighting rigs, or equipment
 - Entering no-fly zones = **immediate disqualification**
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7. NIGHT SAFETY RULES (MANDATORY)

General Night Safety

- LED failure during flight → **IMMEDIATE LANDING**
- Spotter must maintain constant drone visibility
- Emergency lighting available across arena
- Reduced speed may be enforced for safety
- Spectators prohibited from flight zones

Emergency Procedures

- Technical issue → **LAND IMMEDIATELY**
- Emergency stop command → all drones land
- One restart allowed only for verified technical failure
- Medical team on standby
- Fire extinguishers placed at multiple locations
- First-aid facilities available

Weather & Visibility Safety

- Flights paused for poor visibility
 - High winds or rain → immediate suspension
 - Officials may modify flight layout for safety
 - Final authority rests with event officials
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8. PENALTIES & DISQUALIFICATION

Immediate Disqualification

- LED system failure mid-flight
- Flying outside illuminated zones
- Unsafe night flying behavior
- Ignoring officials' instructions
- Entering no-fly areas
- Use of prohibited equipment

- Ethical misconduct

Penalties

- Collisions, unsafe maneuvers, or repeated violations
 - Continued violations may end the run
 - Judges' decisions are final
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9. JUDGING & EVALUATION

Teams will be evaluated on:

- FPV night flight control
- Drone stability & visibility
- Safety compliance
- Team coordination
- Overall discipline

Detailed scoring and tie-breakers will be applied as per official judging standards.

10. AWARDS & RECOGNITION

- Prizes awarded to top performers
 - Special recognition for night FPV excellence
 - Participation certificates for all teams
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11. GENERAL INSTRUCTIONS

Before the Event

- Complete registration before deadline
- Prepare LED-equipped drones
- Bring spare batteries and LEDs
- Report early for inspection

During the Event

- Maintain strict discipline
- Follow official announcements
- Stay within designated team areas
- Report safety concerns immediately

After the Event

- Attend awards ceremony
 - Collect certificates and prizes
 - Submit feedback if required
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12. OFFICIAL NOTE

This **DRONETRIX NIGHT Official Rule Book** is the **final governing document** for night drone operations under **INNOVATEX 4.0 – MakerSpace Cluster, Presidency University**.

All decisions by judges and officials are **final, binding, and non-negotiable**.

Prepared By:

Tanish K

Event Student Head – DRONETRIX NIGHT

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