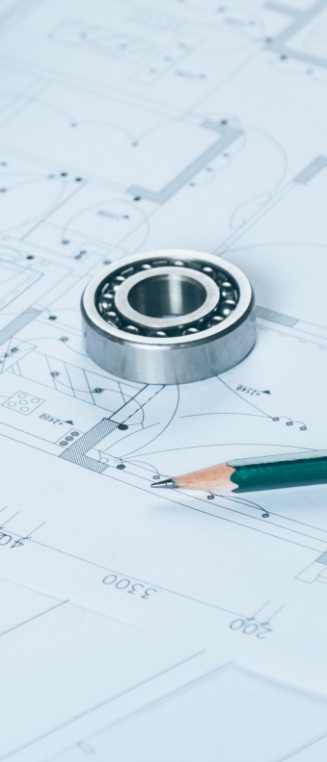


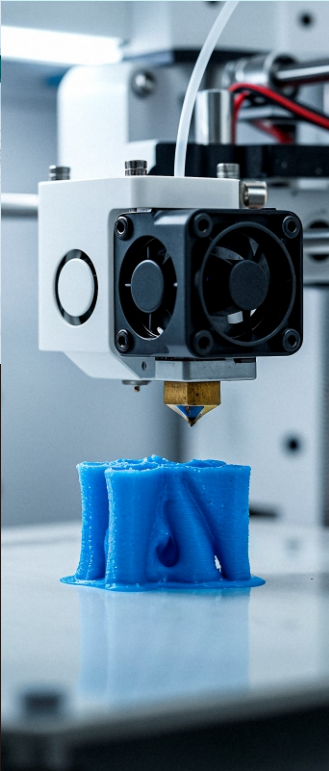


**Alicorn Aviation**

**Aviation | Drone**  
[www.alicornaviation.com](http://www.alicornaviation.com)



**DRONE DESIGNING  
& PROTOTYPING**



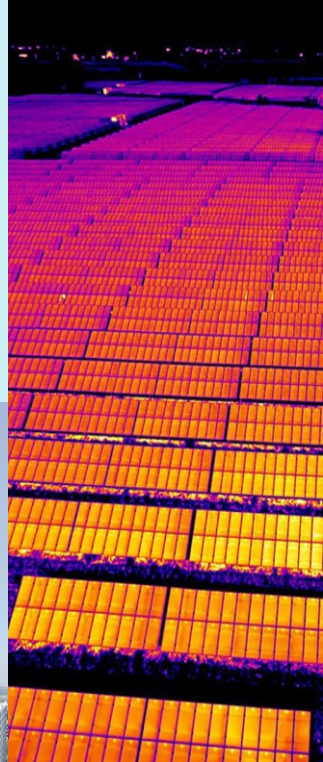
**CONSULTATION**



**AERIAL  
CINEMATOGRAPHY**

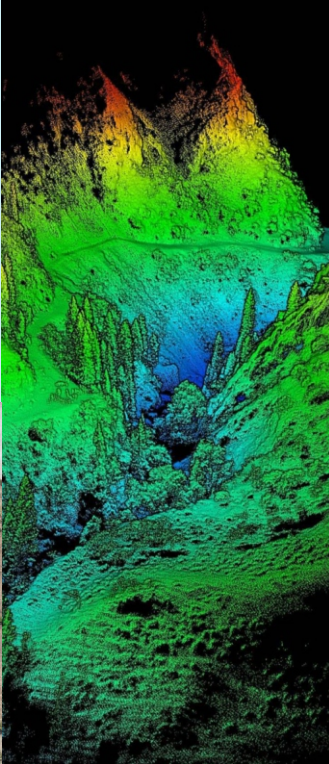


**360° PANORAMIC  
TOURS**



**THERMAL  
IMAGING**

**AERIAL  
PHOTOGRAMMETRY**



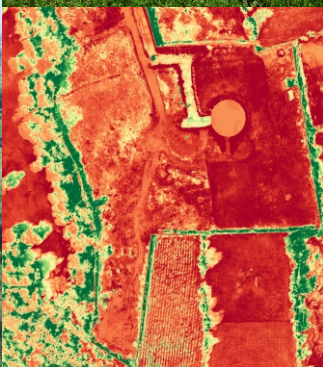
**INDUSTRIAL  
SURVEY  
SOLUTION**



**BATHYMETRY  
SURVEY**



**LIDAR  
SURVEY**



**AGRICULTURE  
CROP SPRAYING/  
CROP HEALTH  
ANALYSIS**

# Drone Type Certification Consultation

End-to-End DGCA Certification Support. Drone Type Certification from the Directorate General of Civil Aviation (DGCA) is mandatory for manufacturing, selling, and operating drones in India. We provide complete consultancy support to help your Unmanned Aircraft System (UAS) comply with Drone Rules, ensuring faster approvals with reduced regulatory risk. Our services cover compliance assessment, engineering documentation, IV&V, testing support, and certification coordination delivering a structured and audit-ready certification process.

## Our Services

**Regulatory & Compliance:** Drone Rules compliance assessment Certification requirement identification Platform categorization (Micro / Small / Medium / Large).

**Engineering Documentation:** Certification manuals and technical documentation, FEA analysis, Center of Gravity (CG), Tools and Equipment Calibration & Testing and NABL reports.

**IV&V and Testing Support:** Independent Verification & Validation (UAS, firmware & GCS) Ground and flight test planning Functional, endurance and fail-safe testing.

**Certification Support:** Application and compliance matrix preparation Audit, inspection, and demonstration support Non-conformity closure and regulatory response Final Type Certificate approval assistance.

**Post-Certification Support:** Compliance maintenance and upgrades Documentation updates and change impact assessment Renewal and regulatory audit support.

# RPTO Certification Consultancy

End-to-End DGCA RPTO Certification Support. We provide complete consultancy services for Remote Pilot Training Organization (RPTO) approval under the Drone Rules, Government of India. Our experts support drone training institutes throughout the certification life cycle from initial planning to final DGCA approval ensuring a smooth, compliant, and audit-ready process.

## Our RPTO Consultancy Services

**Feasibility & Compliance:** Assessment Eligibility assessment as per DGCA Drone Rules Infrastructure, manpower, and drone eligibility review Compliance gap analysis Training category mapping (Small / Medium / Class-specific drones)

**RPTO Documentation Preparation :** DGCA compliant manuals and documentation including : RPTO Operations Manual, Training & Examination Manual, Safety Management System (SMS) Manual, Emergency Response & Risk Mitigation Plan DGCA-aligned course curriculum.

**Infrastructure Documentation :** Support Classroom, simulator, and flying area layout planning Safety zone and site layout drawings Facility, utilities, and access control documentation Audit-ready formatting aligned with DGCA requirements.

**eGCA Portal Application Support :** RPTO registration and application submission Document upload and version management Query resolution and corrective action support

**Audit & Inspection Readiness :** Pre-audit compliance review Mock audit and readiness assessment Support during DGCA inspection Observation closure assistance

**Post-Approval Support :** Operational compliance guidance Training record management processes Renewal and amendment assistance Change management support (new drones or locations).

# Drone Designing

At Alicorn Aviation, we specialize in drone designing that complies with Government Rules & Regulations and international military and industrial standards. Our expert team transforms your ideas into UAV designs that are aerodynamically efficient, structurally robust, and flight-ready.

## 1. Regulatory Compliant Design

- Designs fully compliant with Government Rules & Regulations for UAVs.
- Incorporates airworthiness and operational safety standards
- Documentation ready for certification submission

## 2. International Standards Adherence

- Structural and environmental designs following international military and industrial standards
- Durability against vibration, shock, temperature, humidity, and other environmental extremes
- Optimized for defense, industrial, and research applications

## 3. Aerodynamic & Structural Optimization

- Advanced CFD simulations for aerodynamic efficiency
- Advanced FEA & Modal simulations Structural analysis for vibration, stress, load, and fatigue resistance
- Weight and payload optimization for maximum performance

## 4. Modular & Custom Designs

- Scalable designs tailored for specific payloads and missions
- Modular architecture for easy upgrades and maintenance
- Compatible with multiple propulsion systems and sensors

# Drone Prototyping & Fabrication Services

## 1. Rapid Prototyping

- Convert CAD designs into physical prototypes quickly using 3D printing and CNC machining
- Test design feasibility and functionality before full-scale production & Iterative approach for efficient design improvements

## 2. Advanced Manufacturing & Fabrication

We use a wide range of manufacturing processes to build UAV components from plastics, metals, and composites:

- Injection Molding
- Casting, Carbon Fiber Molding / Composite Lay up
- Sheet Metal Fabrication
- Thermoforming & Vacuum Forming
- 3D Printing / Additive Manufacturing
- CNC Machining
- Laser Cutting & Engraving
- Epoxy & Resin Casting
- Hybrid Composite Manufacturing
- Surface Finishing & Coating

## 3. Functional & Performance Testing

- Ground and flight tests to ensure stability, endurance, and performance
- Simulated and real-world testing for vibration, shock, and environmental resilience
- Compliance with Government Rules & Regulations and international standards

## 4. Structural & Environmental Validation

- Evaluate structural integrity under load, stress, and fatigue conditions
- Test performance in varying temperature, humidity, and environmental extremes
- Ensure prototypes meet durability and safety requirements for industrial and defense use



# Aerial Cinematography

Our aim is to bring a cinematic approach to every aerial shoot. We deliver professional aerial cinematography services for corporate companies, professional firms, and private businesses, producing visually compelling and high-quality aerial content. All pre-production planning and site risk analysis are handled by our experienced production team, with filming carried out by DGCA - approved drone pilots. Post-production is completed in-house by our skilled editors and digital artists, ensuring complete creative control and consistent quality.

## Advantages

- Provides a bird's-eye view of terrain and infrastructure
- Time-saving and cost-effective compared to traditional methods
- Captures and preserves existing ground conditions at a specific time
- Enables stereoscopic and 3D views for better visualization
- Delivers accurate and timely information
- Safer and more economical than conventional surveying techniques
- Accessible to remote and difficult terrains such as mountains and dense forests
- Offers high-resolution, up-to-date imagery unmatched by traditional maps
- Fast turnaround, with visuals available within hours of capture

# 360° Panoramic Tours

We are taking 360-degree interactive panoramic virtual tours to the next level with the introduction of drones. It is now possible to create aerial 360° panoramic tours from a unique perspective... The Sky! Offering the viewer a full 360° horizontal view as well as a vertically 180° view up and down.



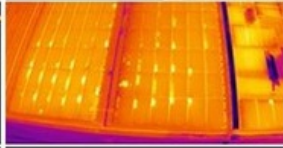
## Advantages of a full spherical interactive panoramic video

- Greatly enhances location and product understanding and improves marketing through visualization.
- A high-resolution, full-screen spherical panoramas provide real impact and unsurpassed detail, making it the ultimate 360° panorama.
- People are more likely to visit your website again just to experience the virtual imersive effect and enjoy the views.
- There is a higher chance that visitors of your website will refer the virtual experience to family and friends.
- An online Virtual Tour makes your website and location/property / brand undoubtedly stand out from your competitors.
- A site with a virtual tour and interactive media will receive 38% more views than a competitor's site that is lacking media.
- By adding an aerial interactive 360° virtual tour, your website becomes unique and appealing, and you will gain a competitive edge, improve your brand awareness and increase sales and enquiries.

# Thermal Imaging



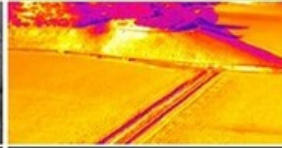
POWER LINE INSPECTION



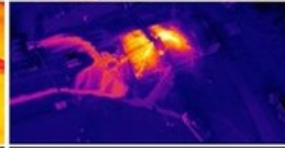
SOLAR PANEL INSPECTION



SEARCH AND RESCUE



PRECISION AGRICULTURE



FIRE FIGHTING

Drone-based aerial thermal imaging enables fast, accurate, and reliable inspection of large areas with pinpoint precision. Using advanced thermal and infrared cameras, we capture radiometric temperature data for detailed analysis and reporting, helping identify issues that are not visible to the naked eye.

Our thermal drone techniques allow rapid inspection of roofs, buildings, solar panels, electrical systems, and underground utilities, detecting heat loss, faults, and energy inefficiencies. Thermal imaging helps diagnose hidden problems early and reveals opportunities to improve safety, reduce energy loss, and lower maintenance costs.

**Applications of Thermal Imaging:**

- Solar panel inspections.
- Electrical and power system inspections.
- Roof and building condition assessment.
- Oil & gas facilities and pipelines.
- Public safety, security, and surveillance.
- Search & rescue and law enforcement operations.

# Aerial Photogrammetry

Work Smarter with Drone Data



Aerial photogrammetry is a specialized application of aerial photography used to measure and analyze the geometric properties of objects and terrain from images. By combining drone-captured photographs taken from multiple angles, we generate accurate 2D maps and 3D models of the same area.

Our photogrammetry process involves expert analysis of aerial and terrestrial imagery to extract precise information about physical features and the surrounding environment, supporting surveying, planning, and decision-making.



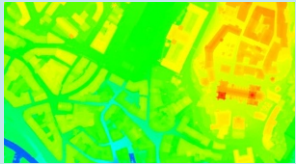
### Color point cloud

The color point cloud uses RGB data from a raster for colorization. Each point of the point cloud receives the RGB value of the raster pixel that has the same location.



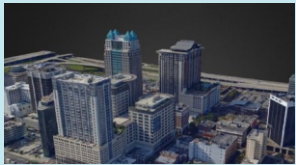
### Orthomosaic

2D image map geometrically corrected such that the scale is uniform. Color balanced to be visually pleasing.



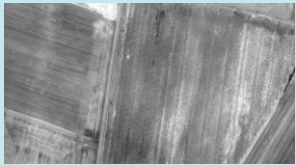
### Digital surface model (DSM)

2.5 D model of the mapped area that contains (X,Y, Z) information, but no color information.



### 3D Textured Mesh

A representation of the shape of the model that consists of vertices, edges, faces and the texture from the images that is projected on it.



### Reflectance Maps

A reflectance map compiles the reflectance values of each pixel and geometry into a single function.



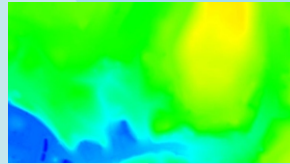
### Classified point cloud

The point cloud is classified in 5 predefined groups: ground, road surface, high vegetation, building, human made object. The results of the classification are used for the DTM generation.



### Contour lines

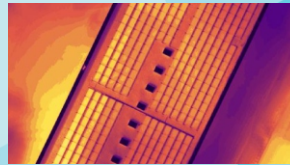
These are lines connecting points of equal elevation. They allow to better understand the shape of the land surface (the topography) on a map.



### Digital terrain model (DTM)

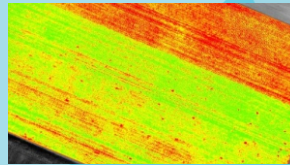
### Digital elevation model (DEM)

2.5 D model of the mapped area after filtering out objects such as buildings, that contains (X,Y, Z) information but no color information.



### Thermal Maps

Thermal maps are 2D maps displaying the thermal information from infrared imaging cameras for each pixel.



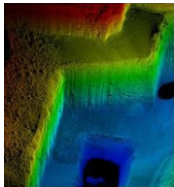
### Index Maps

Each index is associated to an index map. For each pixel on this map, the value of the pixel is derived from the associated reflectance maps.

# LiDAR Surveying

## Capture data safely and faster with UAV solutions

Our mission is to build complete 3D digital mapping solutions – crafted with quality hardware, innovative, intuitive software, & vehicle flexibility in mind – to deliver surveyor-friendly solutions, enabling faster, safer & more economical service options without compromise.



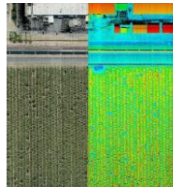
### MINING

Powerful tool for identifying & targeting new areas w/ high exploration potential

Precise volumetric measurements day & night

Rapid data turn-around time

Precision slope modeling

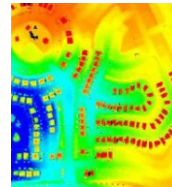


### OIL AND GAS

High point density for proper modelling & localization of pipelines

High accuracy and point density for easy detection of erosion around supporting structures & access paths

Small beam divergence reduces position error on small targets

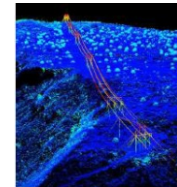


### DEVELOPMENT PLANNING

Maximize efficiency by combining ground & aerial scans

Fused RGB imagery & high point density allows for easy separation of vegetation near buildings, producing cleaner building models

360° field of view ensures the underside of structures are scanned as well



### UTILITY INFRASTRUCTURE

High sensitivity for detection of small ground wires, guy-wires & small vegetation

Small beam divergence reduces position error on small targets

High accuracy measurement of ground & vegetation clearance for line re-rating, ad well as vegetation management

**Our systems are flexible to your surveying demands.  
The following are a few applications optimal for LiDAR surveying:**

- Capturing Topography in Open
- Pit Mining Areas
- Power line, Railway Track & Pipeline Inspection
- Terrain & Canyon Mapping
- Construction Site Monitoring
- Corridor Mapping
- Agriculture & Forestry
- Flood Zone Mapping
- Landslide Survey & Mapping
- Earthquake Disaster Mapping

**LiDAR BENEFITS**

Get precise survey results faster with rapid, remote sensing data collection combined with quick & easy data analysis. Enable real-time point cloud visualizations to instantly adjust scan routes in the field. A non-intrusive mapping method to obtain precise geo-referenced data, while maintaining the highest work-site safety standards.

# Industrial Survey Solution

## Offshore Rigs

Oil rigs and mines located offshore may attest to be a tedious and visibly hazardous operation as a consequence of the high risks and dangers of oil tanks and infrastructure. Besides, oil leaks, operational delays, equipment damage are few of various factors that go on to show the complications associated with offshore oil rig inspections. Profound and exhaustive yet detailed surveillance and analysis of offshore oil platforms, oil leakage, gas emission monitoring and most essentially security are the vital and advantageous services that are entailed by the utilisation of drone.

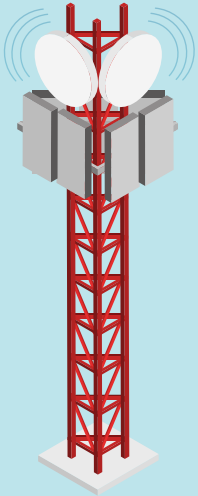


## Refinery

Being a prominent aspect of the oil and gas companies and the said industry, oil refineries have to be under continual and constant monitoring. Inspection of oil refineries require the use of highly thermo - sensitive devices that can freely navigate without many limitations. This, quintessentially, gives way to the use of drones by the virtue of their thermo -sensors and aerial flight capabilities. Reduced risks, reduced costs and heightened efficiency prove to be favourable to the oil and gas industry, as a whole.

## Chimney/ Silo Stack

As a means of convenient application of resources, drones in the spheres of chimney and smoke stacks, vitally reduces human risks. More so, features of good lighting, thermal cameras and sensors, data review services, accurate measurements testify drones to be a valuable inspection tool. Ease of access to inaccessible areas of survey and decrement costs for inspection also justify the same.



## Telecommunications Tower

Autonomous commercial drones are changing the way cell tower companies are auditing and inspecting wireless infrastructure by enabling the rapid, repeatable, and safe collection of high resolution imagery and video of tower structures and equipment. Solution for cell towers helps operators and service providers safely operate drones, meet compliance requirements, and integrate aerial data with GIS and other business systems.

# AGRICULTURE CROP SPRAYING & ANALYSIS

Solution For Your Farm



# Precision Crop Spraying



## Fertilizer

Giving your crops the boost, they need to thrive, fertilizers are a great way to maximize your yields. Spraying drones can spread fertilizers faster and more efficiently when compared with traditional methods.



## Pesticide

Pests eat both your crop and your profits. Using a drone to spray specific spots with pesticides can protect your yields, while also reducing hazardous man-hours.



## Herbicide

Weeds and invasive plants can choke out your crops, gobble up your soil's nutrients, and eat into your profits. Specifics, targeted spraying of herbicides to just the spots that need it can help reduce your costs, while also protecting healthy plants from excess exposure to chemicals.



## Fungicide

Excess moisture can compromise your plants defences allowing mold and fungi to quickly spread from plant to plant. Quick and precise application of fungicide from your spray drone can stop the spread of mold before it decimates your harvest. healthy plants from excess exposure to chemicals.

## Crop Health Analysis



Vegetation Indices



Crop Health Assessment



Irrigation Analysis

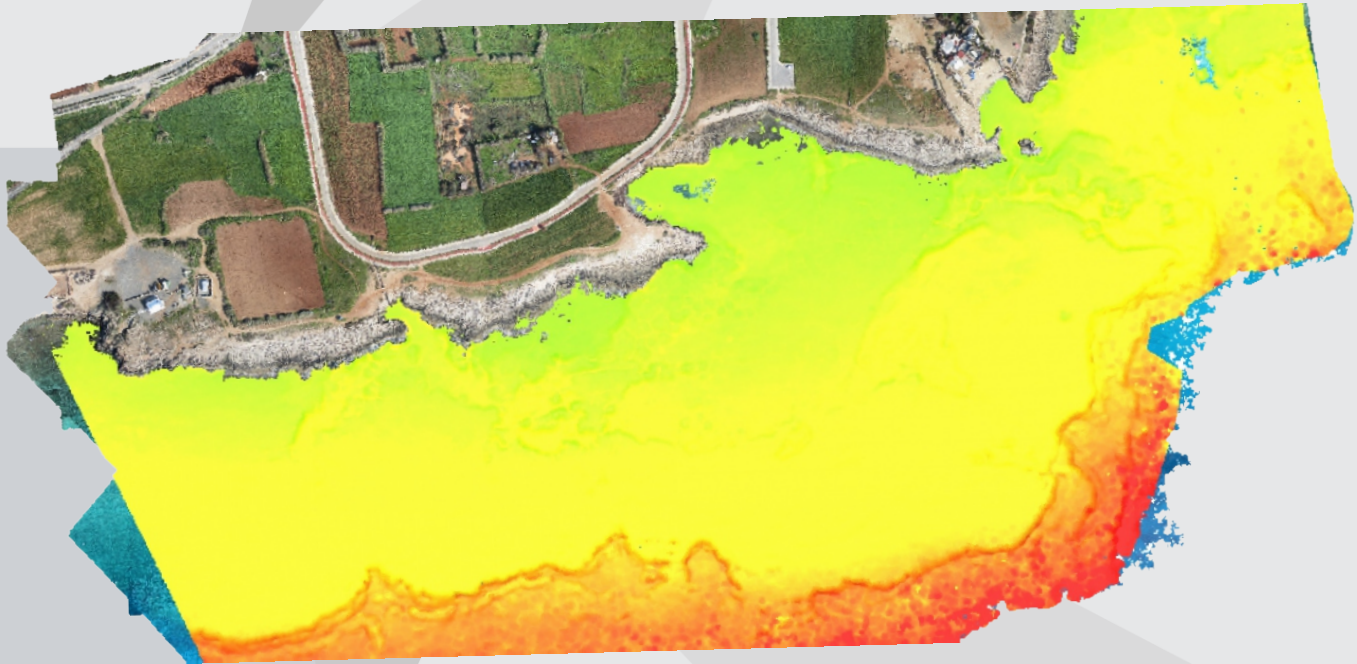


Soil Analysis

# Bathymetric Survey

A new approach for simple and fast deployment

When characterising water-body beds, lakes and/or rivers, the acquisition of bathymetric data is an entryway for many studies: dredging, determination of water depths, cartography...



## **WHY BATHYMETRIC WITH UAV**

Bathymetry is the scientific measurement of water depth in rivers, lakes, reservoirs, oceans, and ports. Using advanced UAV based bathymetric survey systems, we capture accurate depth and seabed data to support dredging, water resource management, infrastructure planning, and environmental studies.

Drone bathymetry enables the creation of detailed models for currents, tides, sediment movement, water temperature, and salinity, offering faster and safer alternatives to conventional hydrographic survey methods.

## **ADVANTAGES OF THE BATHYMETRIC DRONE**

Absence of people on the water safety.

Quick launching and from any type of bank.

High manoeuvrability.

Automation of operations.

## **DELIVERABLES**

Digital Terrain Model, isobaths.

Profiles.

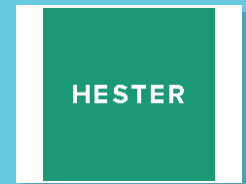
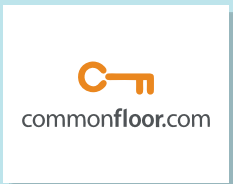
Bathymetric differential, erosion/filling...

Calculations of volumes, changes to sediment stocks.

Study of the volume of water remaining.

Morphodynamic study.

# Our Clients



# Our Clients



[www.inpod.in](http://www.inpod.in) | [info@inpod.in](mailto:info@inpod.in)



Events | Exhibitions | Conferences



Jayantilal & Co.





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