



RPAs & UTILITIES GIS APPLICATION

LOOK AT THE BIGGER PICTURE.



Agenda

- **Introduction**

collaborators and partners
company introduction

- **Traditional method bottlenecks**

- **Why Drones in Utilities?**

- **Key Benefits of RPAs**

- **Drone Technology Overview**

software

payloads

aircrafts

- **Drone Applications in Utilities**

solar inspections

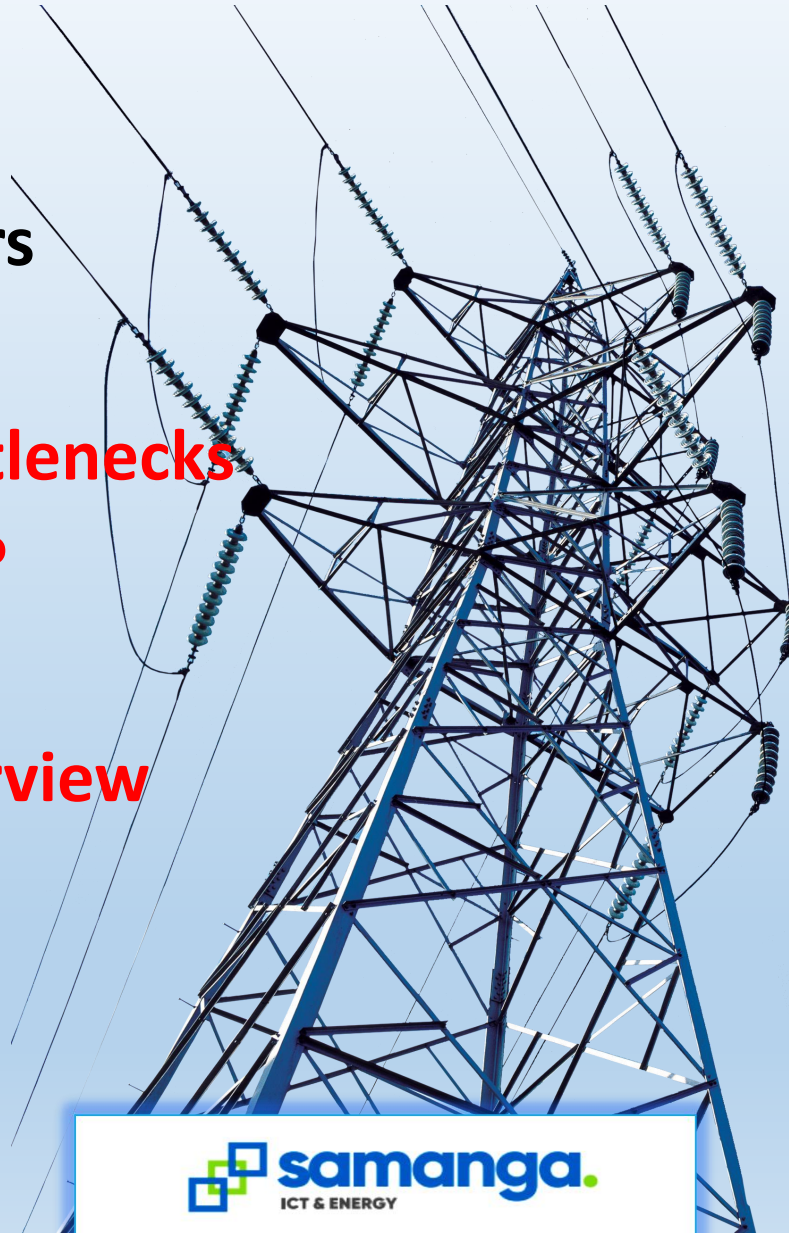
Tower inspection and mapping

- **Brief Hands-On Session**

Basic mission planning

Flight management and

operation





Samanga Solutions Limited is a regional market leader in the Information Communication Technology (ICT) and Energy Sectors. Established in 2012, we have created a strong customer base ranging from Ministries, Departments & Agencies (MDAs), Private Enterprises and the general consumer.

Over the years, we have set up strategic partnerships with international industry-leading manufacturers and vendors in the ICT and energy space to provide innovative customized solutions to our clients.

We rely on our strong local team that is composed of passionate, multitalented, professional individuals driven by excellence and the need to find creative solutions to problems.

We provide professional end to end solutions which include; consulting, system and software design, system integration, supply & installation of software & hardware, provision of support & maintenance and commissioning.

vision



Connecting a New Africa.

mission



To lead the way in connecting Africa through innovative technology solutions.

values



- Client Service
- Accountability
- Integrity

Products & Solutions



ICT



• Radio Communication Solutions (Mission Critical and Commercial)



• Video Surveillance Solutions & Body Worn Cameras



• Biometrics and Access Control



• Transport & Smart Parking Solutions
• Manned Aerial Vehicle Solutions
• General ICT Services

Energy



- Electrical Power Switchgear and SCADA Automation Solutions
- Power Distribution Materials and Accessories
- Power Metering and Protection Solutions
- Road Lighting Infrastructure Solutions (Street Lighting, Digital Display Boards and Traffic Signalisation & Enforcement Systems)
- Renewable Energy (Off Grid, On-Grid & Hybrid) Solutions

MINISTRY OF ENERGY & MINERAL DEVELOPMENT
UGANDA ELECTRICITY GENERATION COMPANY LIMITED
UGANDA ELECTRICITY TRANSMISSION COMPANY LIMITED
UGANDA ELECTRICITY DISTRIBUTION COMPANY LIMITED
UMEME

- Design, Supply, Installation and Commissioning of SCADA Controlled Auto Reclosers and Power Distribution Boards
- Supply of Energy Meters for Domestic and Commercial Applications
- Supply of Power Distribution Materials
- Supply of Operating Tools and Test Instruments for Power Distribution for both Medium and High Voltage

UGANDA COMMUNICATIONS COMMISSION

- Over 300 Digital Lab Installations Using VDI Technology



KAMPALA CAPITAL CITY AUTHORITY

- Design and Supply of City Wide Digital Radio Infrastructure Solution
- Design and Supply of a Radio Dispatching Solution
- Design, Supply, Installation, Testing and Commissioning of LED Based and Remotely Controlled Solar Lighting in Kampala City

- Design, Supply & Installation of Intelligent Video Surveillance System at City Hall

- Design, Supply Installation & Maintenance of Traffic Signals for Kampala Capital City



ABOUT SAMANGA UAV SOLUTIONS & COLLABORATORS



logistics and surveillance



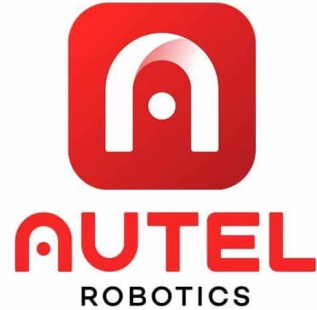
bathymetry,
lidar, software

radai

magnetometry

FIXAR

long endurance
drones



commercial and
industrial
drones

PIX4D

software, Ai



wild life conservation



safety

Technology overview



4K recording camera



Radiometric Thermal Camera 640x512 px



20 MP Zoom Camera
23x Hybrid Optical Zoom



UV cameras to detect corona flares



PIX4Dcloud



PIX4Dmatic



PIX4Dcatch

viDoc®



Radiometric Thermal Camera 640x512 px



High Resolution Camera + IR + Zoom



12 MP Wide Camera
82.9° DFOV



20 MP Zoom Camera
23x Hybrid Optical Zoom



Radiometric Thermal Camera
640x512 px



IP44 Rating



-20°C to 50°C Operating Temperature



Active Image Stabilization and EIS



Night Scene Mode



Laser Rangefinder 1200 m



Multi-sensor payloads that bring a whole new meaning to mission efficiency. The unique intelligence and integrated design provide unprecedented aerial imaging capabilities.

Drone-Powered Solution for Utility



Transmission Line
Inspection

Substations Inspection

Distribution Line
Inspection

planning

construction

mantainance



planning



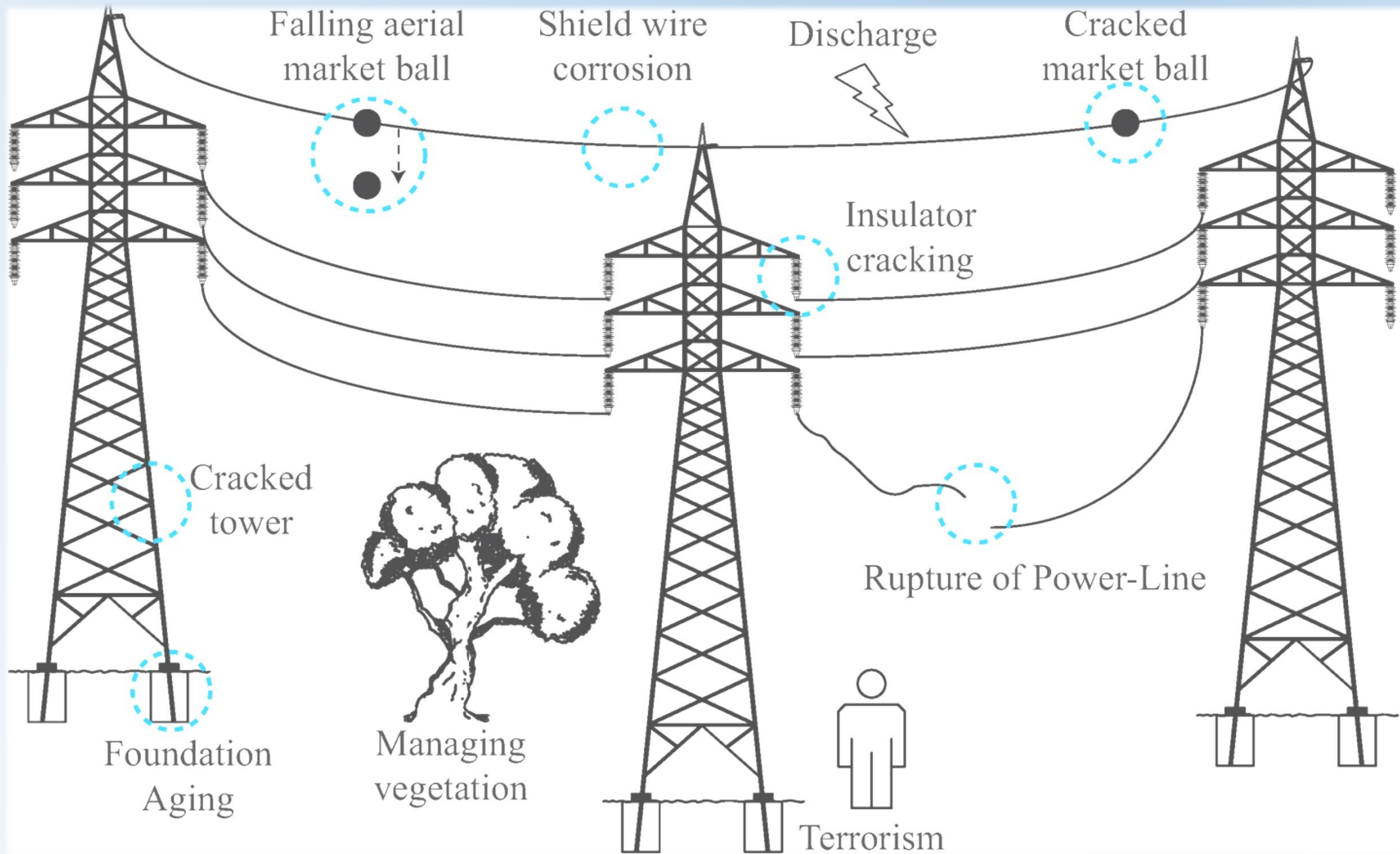
build

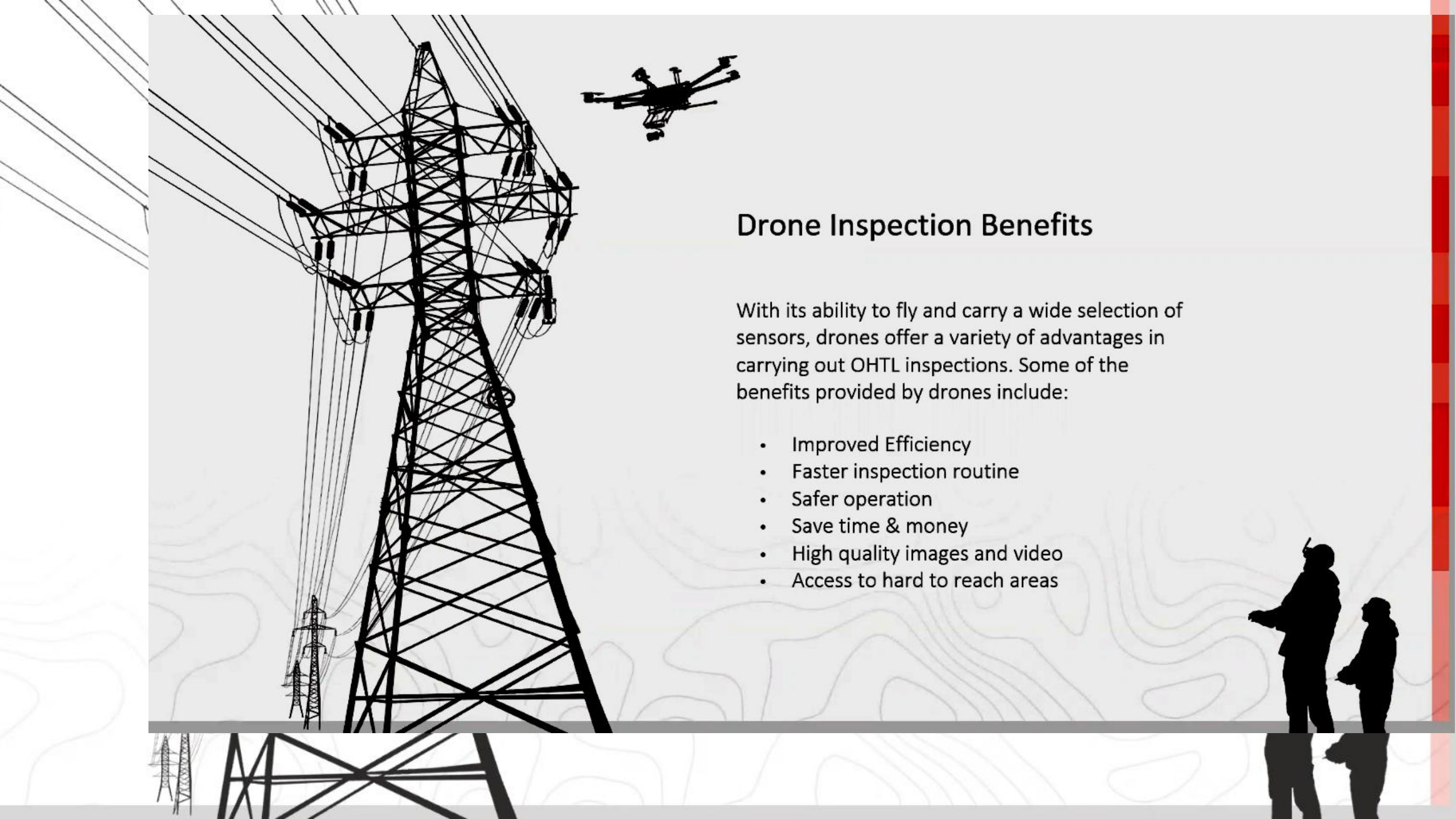


use & maintenance



WHY THE NEED TO INSPECT





Drone Inspection Benefits

With its ability to fly and carry a wide selection of sensors, drones offer a variety of advantages in carrying out OHTL inspections. Some of the benefits provided by drones include:

- Improved Efficiency
- Faster inspection routine
- Safer operation
- Save time & money
- High quality images and video
- Access to hard to reach areas

Traditional bottlenecks

Faster Inspection

Traditional Methods

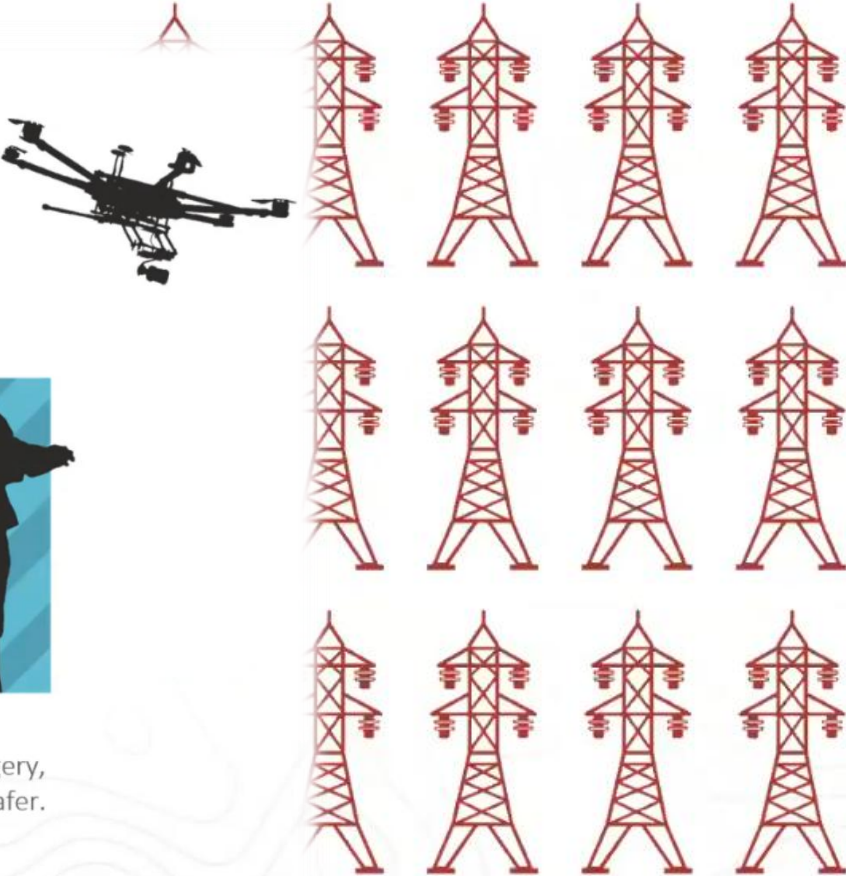


Expensive and very risky.

Expensive and only offered top down view.

Can only see one angle and time consuming.

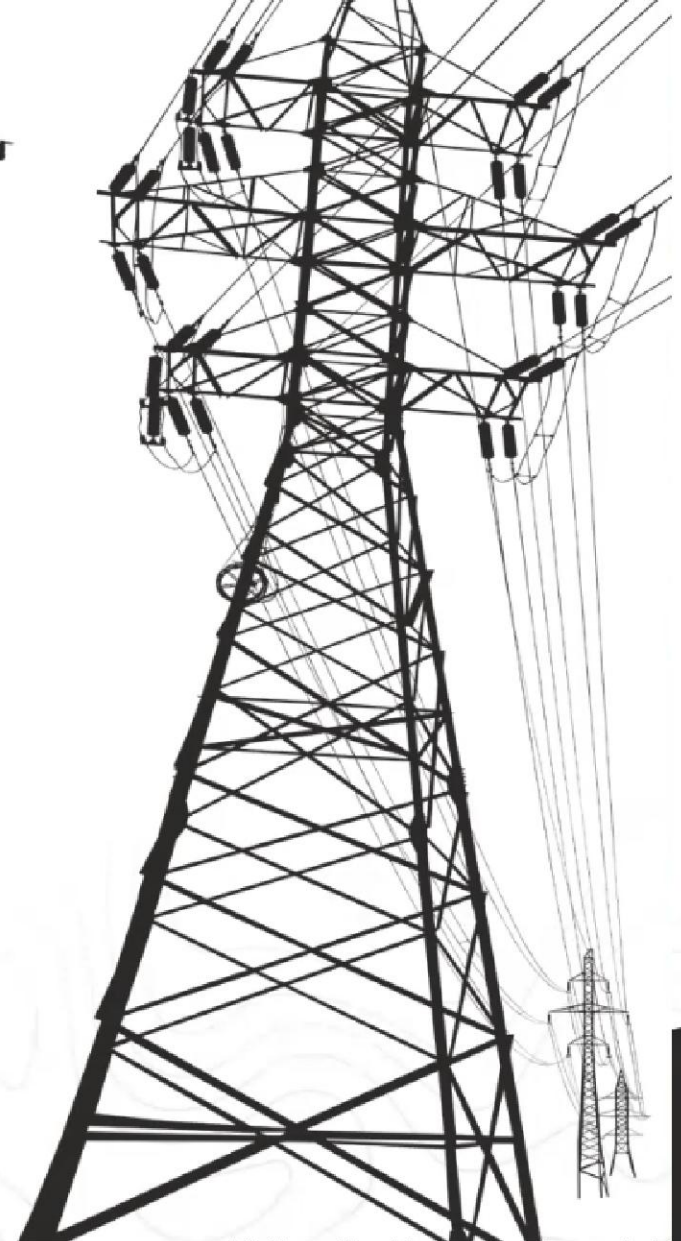
High resolution imagery, less expensive and safer.



OHTL Tower Inspection

Each critical component of the OHTL tower is inspected in detail:

- Cracked and Polluted Insulators.
- Loose/missing Nuts and bolts on the hardware.
- Corrosions on the tower structure and hardware.
- Conductor strand damages.
- Foundation Condition.
- Vegetation encroachment near powerlines.
- Thermal Inspection to identify abnormal temperatures on insulators and conductors.
- Corona discharge inspection.



OHTL T



OHTL Tower Inspection



OHTL T



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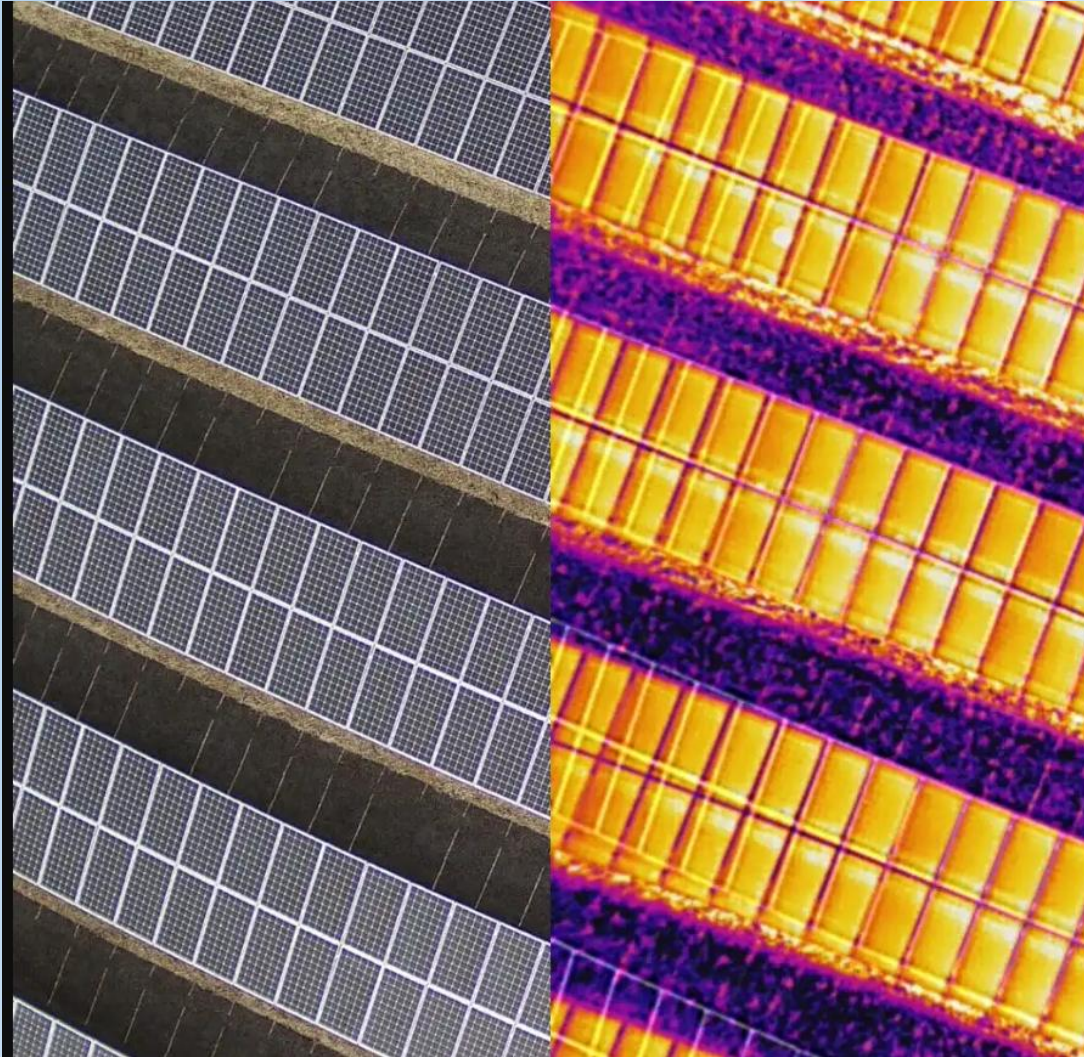


191.9 F



73.8 F

THERMAL SOLAR INSPECTION



- Faulty Modules
- String Outages
- Module Delimitation
- Cracks
- Shadowing
- Soiling
- Inverter Anomalies
- Vegetation
- Combiner Anomalies

