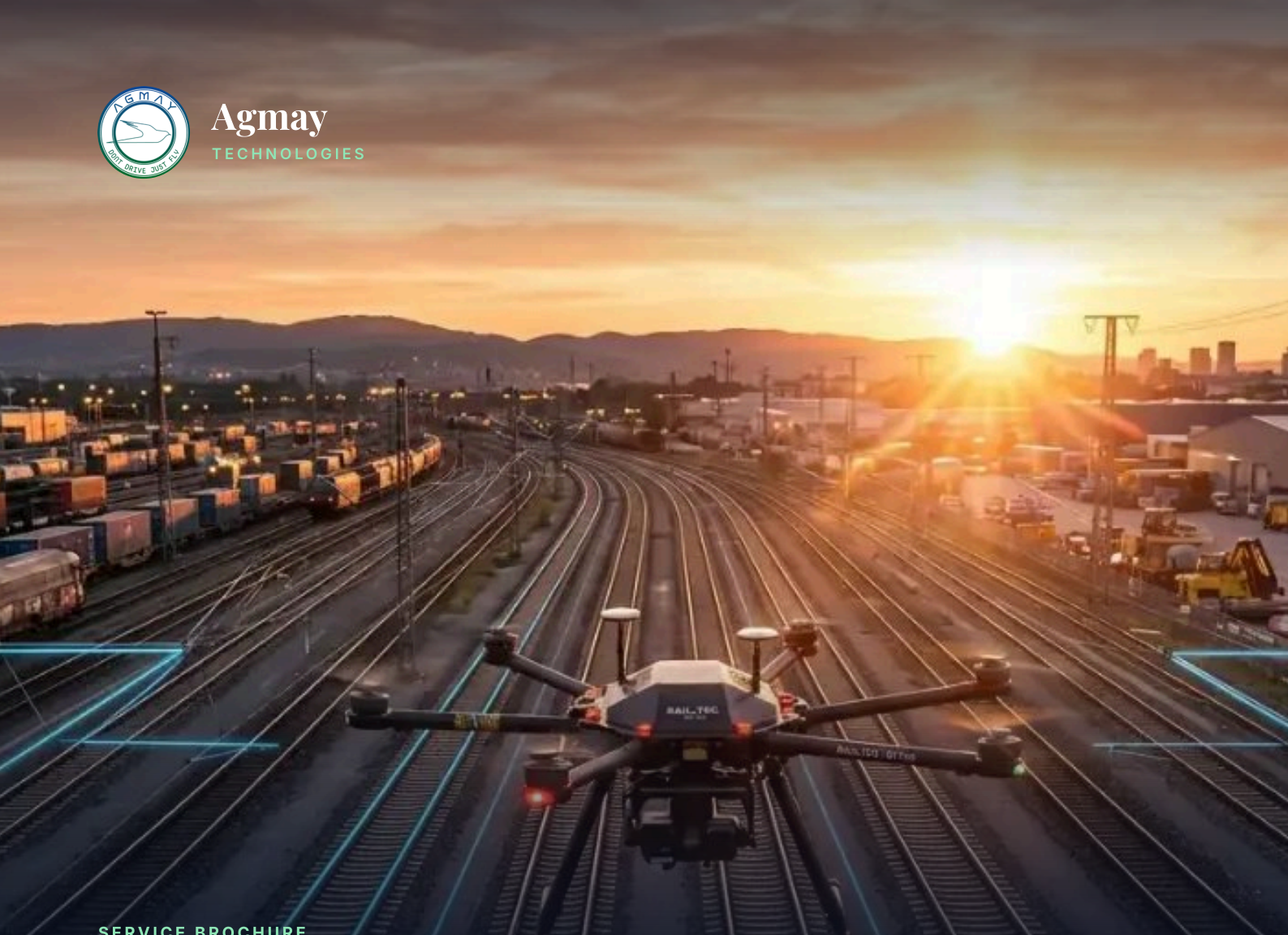
Agmay
TECHNOLOGIES



SERVICE BROCHURE

Railway Inspection

Track, bridges, tunnels and OHE, inspected from the air while trains keep running

Track, bridges, tunnels, overhead electrification and stations inspected from the air with RTK positioning, LiDAR and thermal imaging. Flights are planned at a safe stand-off from the line, so trains keep running.

No track block | ±2 cm RTK positioning | Thermal and LiDAR | GIS defect dashboard

OVERVIEW

The whole corridor, without a block

A drone flies along the line at a safe stand-off from the track and the overhead equipment, capturing high-resolution imagery, thermal and LiDAR in one pass. Long sections are flown with a fixed-wing VTOL.

RTK positioning places every image and finding to about 2 cm. Defects are classified by priority and published to a GIS dashboard, so engineers can assign work straight from the map.

50 km	4 h	±2 cm
Of track captured in one project	Flying time for that corridor	RTK positioning

Why Agmay

- ✓ No interruption to train operations: flights hold a safe offset from the track and OHE
- ✓ Image analysis flags broken sleepers, missing fittings, ballast erosion and vegetation
- ✓ LiDAR produces 3D models of bridges, cuttings and yards for design and maintenance
- ✓ RTK positioning ties every image and defect to engineering-grade coordinates
- ✓ Thermal imaging checks OHE joints and insulators for overheating
- ✓ DGCA-certified pilots, with airspace checked on Digital Sky before every flight

DRONE OR FOOT PATROL

Walking patrol compared with drone survey

	Drone survey	Foot patrol
Track possession	No block needed	Staff on or beside the track
Position of each finding	RTK coordinates to about 2 cm	Kilometre post and notes
Bridges, tunnels and OHE	Imaged, scanned and thermally checked	Hard to reach

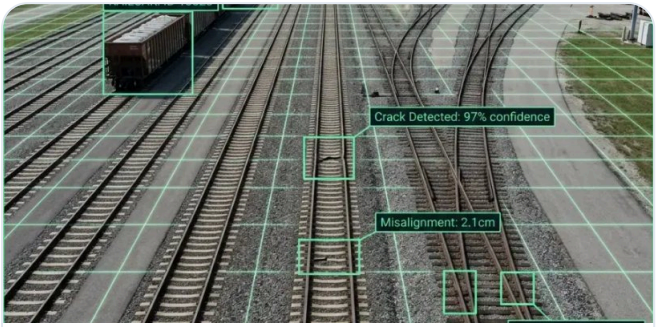
SAFETY

Planned with the railway, flown beside live traffic

- ✓ Missions are pre-planned with the division at a safe stand-off altitude and offset from active tracks
- ✓ Flights follow railway and aviation safety rules, with airspace checked on Digital Sky
- ✓ No track block is needed, so trains keep running while we fly

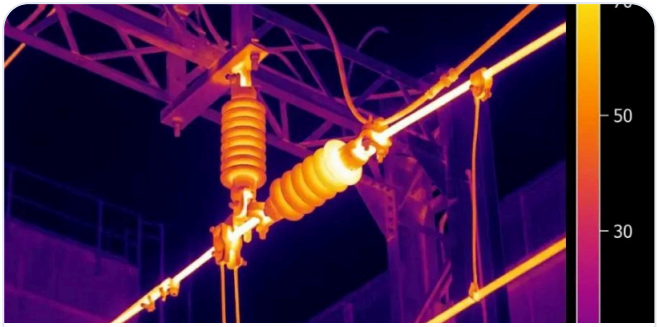
WHAT WE INSPECT

From the rails to the overhead line



Track inspection

Rails, sleepers, fastenings and ballast imaged at high resolution.



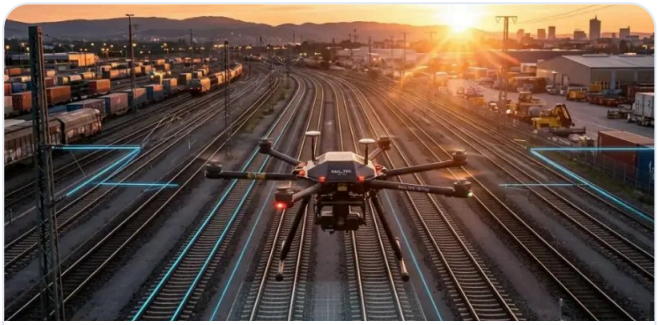
OHE thermal inspection

Catenary, droppers and insulators checked for hot joints and sag.



Bridges and tunnels

LiDAR and photogrammetry models of structures that are hard to access.



Engineering review

Findings filtered and assigned from a GIS dashboard.

Images are illustrative.

WHAT WE FIND

Defects identified from the air

- Track misalignment
- Broken sleepers
- Missing bolts
- Cracked fasteners
- Ballast erosion
- Catenary sag
- Damaged OHE insulators
- Vegetation encroachment

HOW IT WORKS

From section plan to work tickets

1

Plan with the division

Section limits, traffic pattern and safety rules are agreed with the railway engineers.

2

Fly the corridor

Multirotor and VTOL aircraft capture imagery, thermal and LiDAR along the line.

3

Process and detect

Data is processed into orthomosaics and point clouds, and defects are classified by priority.

4

Publish

Findings are loaded to a GIS dashboard with coordinates and images.

5

Hand over

Engineering summaries and work tickets go to the maintenance teams.

DELIVERABLES

What you receive

- High-resolution orthomosaic of the corridor
- LiDAR point clouds and 3D models of structures
- Georeferenced defect log with priority categories
- PDF engineering summary and GIS dashboard access

POSITIONING

Every finding at about ±2 cm

RTK corrections on the aircraft place each image, point and defect in engineering-grade coordinates, so a maintenance team can go straight to it instead of searching from a kilometre post.

EQUIPMENT

Aircraft and sensors

Agmay AeroVTOL-X

Fixed-wing VTOL for long sections, up to 120 minutes in the air from any clearing

DJI Matrice 400

Up to 59 minutes of flight and 53 minutes of hover, by DJI's figures in still air; carries thermal, zoom and LiDAR payloads

DJI Matrice 4T

640×512 thermal camera (30 Hz) with temperature measurement; three 48 MP cameras with up to 112× hybrid zoom

Multirotors with RTK for detail work and structures; the AeroVTOL-X for long sections. Thermal and LiDAR payloads are fitted as the job needs. DJI figures are from DJI's published specifications.

QUESTIONS

Common questions

How accurate is the positioning?

With RTK corrections the platform positions data to about ±2 cm, which suits engineering-grade rail surveys.

Do flights disturb train operations?

No. Missions are pre-planned at a safe stand-off altitude and offset from active tracks, in line with railway and aviation safety rules.

What defects can be identified?

Track misalignment, broken sleepers, missing bolts, cracked fasteners, ballast erosion, catenary sag, damaged OHE insulators and vegetation encroachment.

What do we receive?

Orthomosaics, LiDAR point clouds, georeferenced defect logs, PDF engineering summaries and access to the web GIS dashboard.

How do I get a quotation?

Send us these and we reply with a scope and a price.

- ✓ The section and its length
- ✓ Track, bridges, tunnels, OHE or stations
- ✓ Imagery, thermal, LiDAR, or all three
- ✓ Your timeline

Plan your railway inspection with Agmay

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