USE CASE · SV-2.4 VTOL

VTOL drone for land survey and mapping

Surveying land by foot or total station is slow, and a small multicopter covers little ground per battery. A fixed-wing VTOL combines both: it takes off and lands without a runway, then flies efficiently on its wing to cover a large site in one sortie.

IN SHORT

- A fixed-wing VTOL maps large areas in one flight: it lifts off vertically with no runway, then cruises on its wing for long endurance.
- The Star INXS SV-2.4 carries a Sony ILX-LR1 61 MP full-frame camera with 21, 24 or 35 mm lenses for orthomosaics under 1 cm per pixel, and flies up to 112 minutes and 127 km.
- Autonomous waypoint missions, RTK GNSS and fully automatic VTOL take-off and landing mean a two-person team can fly a planned survey from almost any field.
- For a small site or a close inspection, a multicopter is simpler; the SV-2.4 suits wide areas.



FIGURES TO CHECK

FIGURE	WHY IT MATTERS	SV-2.4
Camera	Sets the detail in the map	Sony ILX-LR1, 61 MP full-frame, 21 / 24 / 35 mm lenses
Ground resolution	Parcel edges, kerbs, stockpiles	Under 1 cm per pixel
Positioning	Accuracy of the final map	RTK GNSS
Endurance and range	Area covered per sortie	82–112 min; 95–127 km
Service ceiling	Hills and high plateaus	4,000 m
Wind	Survey days are rarely calm	Class 5; cruise 17–22 m/s
Transport	Remote sites	Tool-free assembly; hard-shell case 1.25 × 0.34 × 0.49 m

HOW A SURVEY IS FLOWN

1. **Plan the mission** on the ground controller: boundary, lines, overlap and height.
2. **Assemble** the aircraft without tools and check the camera.
3. **Launch.** Take-off, transition to wing-borne flight and the mission run automatically.
4. **Return and land.** Return-to-launch and automatic VTOL landing bring the aircraft back to the pad.
5. **Process.** Load the images into photogrammetry software to produce the orthomosaic and terrain models.

COMMON QUESTIONS

What ground resolution can the SV-2.4 achieve?
Under 1 cm per pixel with the Sony ILX-LR1 61 MP camera.

How long can it fly on one battery?
Up to 112 minutes and 127 km on the 22,000 mAh pack, tested at 500 m with a 600 g payload.

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