

Skydio Autonomy

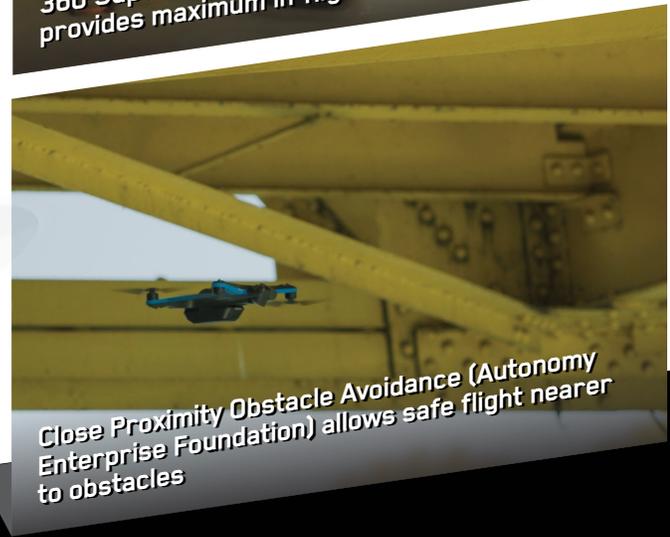
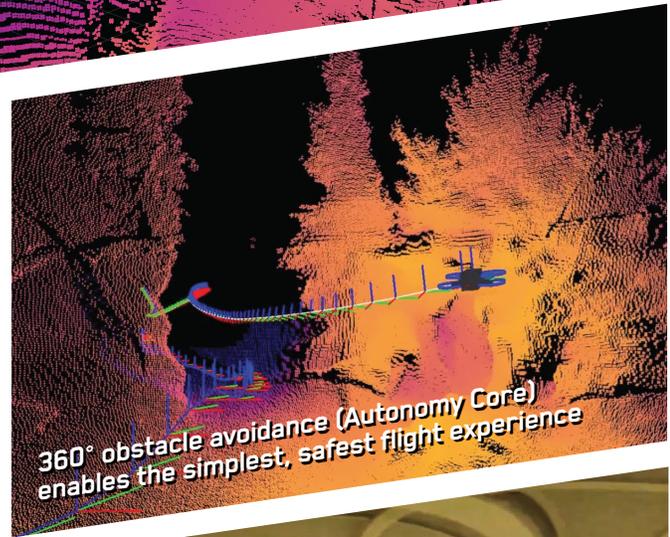


A new generation of drone intelligence

Anyone who has flown a Skydio will tell you the flight experience is unlike any other drone, and the reason is Skydio Autonomy™. The result of a decade of R&D at the cutting edge of artificial intelligence, computer vision, and robotics, Skydio Autonomy flies with the skills of an expert pilot. Using breakthrough AI, it creates a 3D model of its surroundings that updates at a rate of over one million data points per second, and runs up to nine deep neural networks onboard the drone to predict into the future to make intelligent decisions. Skydio drones fly autonomously through the most demanding environments, and keep you safe from obstacles when you take control.

Skydio Autonomy is true AI for drones

Skydio hardware is designed from the ground up to support the autonomy stack. Our aircraft carry the Nvidia TX2, one of the fastest embedded AI computing device available, and six fisheye 4K navigation cameras that see everything around the drone. But the real difference is in the software. While GPS and magnetometers enabled the previous generation of manual drones, the next era belongs to software-driven technology powered by breakthrough artificial intelligence that can make drones work for their pilots, instead of the other way around.



The Evolution of Drones

Manual drones have peaked. The future belongs to software-driven aircraft.

AGE OF AI-DRIVEN AUTONOMY



- Software, AI-driven navigation
- Native obstacle avoidance
- Fully automated workflows
- Integrated solutions

AGE OF TOYS



- Pilot operated
- RC-based

AGE OF MANUAL HARDWARE



- Pilot operated
- GPS-based
- Sensor payloads

Autonomy Features

SKYDIO AUTONOMY CORE

Out-of-the-box, every Skydio drone is equipped with Autonomy Core, enabling a revolutionary flight experience, even in GPS-denied environments. Autonomy Core turns anyone into an expert pilot.

REAL-TIME 3D MAPPING	Drone uses six paired navigational cameras to achieve depth perception and to maintain a 3D map of its surroundings in real-time.
OBJECT AND SCENE RECOGNITION	Deep learning algorithms enable the drone to recognize objects and predict how they will persist in the environment.
MOTION PLANNING	Drone plots a safe path through its environment to fulfill the pilot's commands or reach pre-planned locations.
360° OBSTACLE AVOIDANCE	Drone uses paired cameras and real-time 3D mapping to detect static obstacles and plot intelligent paths around them.
SUBJECT DETECTION	Deep learning algorithms are used to detect subjects, allowing the drone to recognize vehicles and people.
SKYDIO VISUAL NAVIGATOR™	Vision-based navigation system that does not depend on GPS or magnetometer calibration, enabling flight in GPS-denied, indoor, and metallic environments.
WAYPOINT MISSIONS	Map view which presents the drone's position superimposed on satellite imagery and directs the drone to fly to a point on the map.

SKYDIO AUTONOMY ENTERPRISE FOUNDATION

For pilots flying the most complex missions, Autonomy Enterprise Foundation provides enhanced functionality to help get the job done, with features designed to extend the pilot's situational awareness and facilitate flight in more obstacle-dense environments. This is an optional software package for any Skydio drone.

360 SUPERZOOM	Blends the six 4K navigation cameras to create an omnidirectional view. Allows the user to zoom digitally with algorithmic image stabilization.
PRECISION MODE	Tunes the system for ultra-precise positioning of the drone based on joystick inputs. (AEF feature for S2. Included with Autonomy Core for X2).
CLOSE PROXIMITY OBSTACLE AVOIDANCE	The drone can fly even closer to objects with full obstacle avoidance capabilities.
180 VERTICAL VIEW	Gimbal can look straight up overhead of the drone.
VISUAL RETURN-TO-HOME	Ability to RTH purely using visual wayfinding when flying in GPS denied environments.
POINT-OF-INTEREST ORBIT	Drone will navigate itself while revolving around a user-defined point on a map.
TRACK-IN-PLACE	Ability to visually track a car or person from a fixed position from farther away.
OFFLINE MAPS	Download maps ahead of time to use map-based features without a cellular LTE connection. AEF feature for S2. Included with Autonomy Core for X2.