

# Parrot Unveils 4G-connected Robotic UAV



Parrot has unveiled ANAFI Ai: a drone that sets new standards and capabilities for professionals. With a somewhat different appearance from most drones, it has insectile features. ANAFI Ai uses 4G as the main data link between the drone and the operator. Parrot is a leading European group manufacturing unmanned aerial vehicles (UAVs or 'drones').

Users will no longer experience transmission limitations thanks to ANAFI Ai's 4G connectivity, which enables precise control at any distance. For Beyond Visual Line of Sight flights, it stays connected even behind obstacles. Anafi Ai can use Wi-Fi too, but 4G is what Parrot sees as the liberating factor.

For the first time, ANAFI Ai embeds a Secure Element in the drone and in its Skycontroller 4. The 4G link between the drone and the user's phone is encrypted. The Secure Element protects both the integrity of the software and the privacy of data transferred.

Parrot's large partner ecosystem delivers a wealth of specialized applications and services for a variety of professional uses. Parrot is the first in the industry to make its piloting application open-source. Parrot offers developers a Software Development Kit (SDK) to execute custom code in the ANAFI Ai drone during the flight. The SDK gives access to all flight sensors, including obstacle avoidance sensors, occupancy grid and internet access.

ANAFI Ai's obstacle-avoidance (OA) system detects obstacles in all directions, using stereo cameras to sense objects and automatically avoid them. Parrot's new UAV incorporates a 48MP main camera and boasts a powerfully-stabilized 4K 60fps / HDR10 camera to capture finely-detailed aerial images and smooth video footage.

Originally the pioneer of consumer drones a decade ago, Parrot now seeks to set new standards for drones at work. Advanced artificial intelligence, autonomous flights, best-in-class imaging, photogrammetry accuracy and reliable 4G connectivity, put powerful new tools in the hands of professionals.

## The advantages of 4G connectivity

Parrot envisions that 4G is profoundly changing the use cases for drones. With 4G, the data link between the drone and the pilot becomes robust in all circumstances. Already widely and reliably deployed around the world, 4G offers long range transmission at low frequency bands at 700MHz - 900MHz. Additionally, the 4G connection means professionals can operate the drone at any distance.

Many 4G operators offer quality-of-service guarantees for first responders, such as firefighters and police. Parrot has developed a powerful streaming software adapted to any 4G situation. The software quickly optimizes the definition and frame rate to the network quality. Our software is also robust to packet and frame losses.

ANAFI Ai itself does not require a subscription; users can utilize any SIM card capable of sending data. Parrot provides its users a secured infrastructure that works with all smartphones.

## Imaging accuracy and autonomous photogrammetry

ANAFI Ai's Quad Bayer sensor offers 14 EV of dynamic range in HDR10 mode. It catches all the details both in highlights and shadows. Inspection professionals can use the 6x digital zoom to observe 1 cm details at a distance of 75m. The controllable gimbal tilt range (from -90° to +90°) gives professionals access to complex points of view such as the underside of a bridge structure.

The hybrid image stabilization on 6 axis (3-axis mechanical, 3-axis electronic) ensures sharp photos even in crosswinds of up to 12.7 m/s. P-Log format allows professionals to retain more information with raw files.

ANAFI Ai's biomimetic form factor mimics nature's fitness. Its swivel head has an omni-directional camera, ensuring precise obstacle avoidance in every flight direction. When obstacles are detected, The UAV automatically determines the best trajectory to pursue its mission.



Inspection of high-voltage power lines. Captured with ANAFI Ai, processed with Pix4Dmatic.

Embedded Artificial Intelligence allows for photogrammetry-specific flight plans to be performed automatically, optimizing productivity, and saving time. Professionals can generate optimized missions based on the land registry of the building selected in just one click.

The 4G robotic UAV's Quad Bayer 48MP sensor delivers survey-grade accurate 2D and 3D models. It offers the same precision as drones with a 1" 20MP sensor, while flying 1.5 times higher. A GSD of 0.46 cm/px is obtained at an altitude of 30 m. Pictures can be captured at 1fps, according to Parrot this is two times faster than any other drone in the market.

The images are compatible with all photogrammetry software suites. With [Pix4D](#), one of market leaders in photogrammetry software, Parrot has pushed the integration one step further. During the flight, ANAFI Ai sends the pictures to [Pix4Dcloud](#) directly. Computation starts when the drone lands so that professionals gain productivity by avoiding manual time-consuming data transfer.

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