RAPTOR

DATA SHEET

When GPS goes blind, the mission doesn't have to.

From contested battlefield environments to urban canyons, loss of GPS through jamming, spoofing, or interference has become an operating reality. GPS is a single point of failure that dramatically impacts drone navigation and sensemaking.

Enter Raptor, a suite of vision-based software products that use Maxar's unique global 3D data to deliver a breakthrough terrain-based positioning system for drone navigation and sensemaking in GPS-denied environments.

RAPTOR GUIDE
Navigate with certainty

RAPTOR SYNC
Unify your view

RAPTOR ACE
Operate with accuracy

Next-gen GPS resilience for autonomous systems.

Raptor enables autonomous drones to navigate and extract accurate ground coordinates in the absence of GPS, transforming the resilience and reliability of unmanned systems and enabling autonomy at scale across warfighting, humanitarian and commercial operations for customers across the world.

Designed for lightweight integration with any autonomous platform, Raptor software products use only a drone's native camera and Maxar's 90 million-plus sq km of global 3D terrain data to help the platform navigate with extreme precision and extract accurate ground coordinates in real-time without GPS.

Easily deployable on any platform. No extra hardware required.

The software suite includes three core products:

- **Raptor Guide**: Vision-based positioning software loaded directly onto an autonomous platform to determine its aerial position at a demonstrated absolute accuracy of <10 m RMSE.
- **Raptor Sync**: Software that georegisters the full motion video feed from the drone's on-board camera with Maxar's 3D terrain data in real-time, enabling intelligence fusion, multi-domain interoperability across different sensors and accurate ground coordinate extraction at a demonstrated absolute accuracy of <3 m.
- **Raptor Ace**: Software solution installed on commodity laptop equipment that works alongside drone controllers, enabling operators to extract real-time target ground coordinates from full-motion aerial video feeds with a demonstrated absolute accuracy of <3 m.

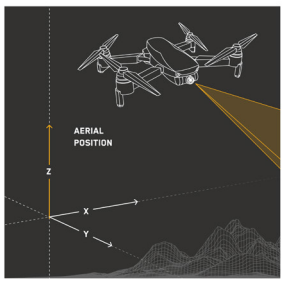
MAXAR

Features:

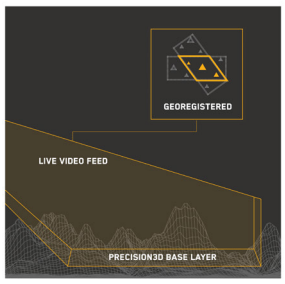
- **Positional accuracy**: Raptor delivers high positional accuracy, with specific solutions to support autonomous system navigation and ground coordinate extraction
- **Platform agnostic**: Deployable on a variety of drone types and can use existing hardware
- **Unrivaled geospatial reference**: Draw from Maxar's 90M+ sq km of highly accurate Precision3D terrain data
- **Non-dedicated cameras**: Operate optimally with front-facing, 45-degree, off-nadir camera

Benefits:

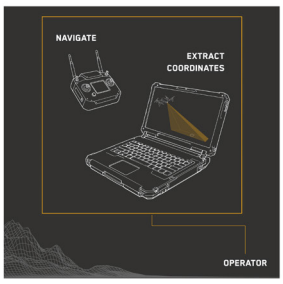
- **Resilient navigation and operation:** Precise autonomous navigation and coordinate extraction without GPS
- **Flexible:** Solutions work at day or night and demonstrated performance at altitudes as low as 50 m
- **Lightweight integration:** Easy to bring online, deployable on low-power commodity hardware with minimal initial integration
- **EAR-99 Compliant:** Dual-use technologies free from lengthy export compliance screenings



Raptor **Guide**



Raptor **Sync**



Raptor **Ace**

Accuracy and interoperability that only 3D data can provide

Raptor software products provide significant advantages over other vision-based positioning solutions which often rely on less accurate 2D terrain data as a reference.

What makes Raptor stand apart?

- **Cost- and power-efficient**: Raptor software products are deployable on low-power commodity hardware and require only minimal initial integration. Alternative navigation solutions are typically more costly, requiring SWAP-impacting hardware and multiple licenses. With Raptor, users get access to the underlying Precision3D™ terrain data needed to deliver on the mission.
- **Delivers against complex mission profiles**: Built on a true 3D representation of the operational terrain, Raptor products operate at night, in any season, and have demonstrated performance at altitudes as low as 50 m. Maxar's 3D global terrain data is regularly updated.
- **Enables autonomy at scale**: Because Raptor anchors sensor data against a common geospatial foundation and works with existing drone cameras, the technology makes it possible for different unmanned systems to work together for joint operations regardless of the software or hardware platform.
- **Works on existing cameras**: A dedicated downward-facing camera consumes precious payload space and adds to the platform's weight and power consumption. Raptor works with the drone's existing optics, including both forward and side-looking cameras.

RESILIENCE FOR EVERY MISSION

Joint multi-domain operations

Raptor can help realize the vision of a digital battlefield, ensuring autonomous systems work in unison to deliver on surveillance, reconnaissance and tactical operations. No GPS needed.

Large-scale autonomous delivery systems

Commercial logistics companies are building large-scaled autonomous delivery systems. With Raptor, urban canyons are no longer a barrier to reliability, and drones can drop off packages with precision at scale.

Search and rescue

Raptor can help first responders deliver aid drops with precision to even the smallest landing zone. No matter where, no matter the situation.

MXR-DS-RAPTOR 03/25

info@maxar.com