



Modern Approaches to real-time Data Delivery

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MAXAR



Data access for a modern IMINT strategy

PREPARE	PREVENT	ENFORCE	MONITOR	COUNTER	ASSESS	& RESPOND
						
<p>Order of Battle, Mapping, Disaster, Force Protection, Exercises, and Direct Action</p>	<p>Crimes Against Humanity, Insurgency, and Terrorism</p>	<p>Border Security, Treaty Verification, Criminal Activity, and Maritime Domain Awareness</p>	<p>Critical Infrastructure, and Military Activity</p>	<p>Terrorism, Narcotics, Denial & Deception, Weapons Proliferation, and Insurgency</p>	<p>Bomb & Battle Damage, Critical Infrastructure, and Military Strength</p>	<p>Humanitarian and Disaster Response (HADR)</p>
						



Data requirements

- **Timely**
- **Accurate**
- **On Demand**
- **Consistent**
- **Ready to consume**



Data Delivery Models

- **Tasking**
 - Tasked and delivered as per SLA
- **Direct Access**
 - Direct access and tasking of sensors
 - Awareness of position of sensors
 - Direct download
- **As-a-service**
 - AOI's pre decided
 - On schedule, periodic refresh
 - Directly consumed by weapon systems/applications



Earth Intelligence Portfolio



SATELLITE ACCESS

Direct collection requests and access to the world's most advanced commercial imaging satellite constellation



GEOSPATIAL FOUNDATION

Highest quality satellite imagery, basemaps and 3D data over any location on Earth



PRECISION MAPPING

Accurate, up-to-date datasets and a collaborative mapping space to create high-quality maps



ON-DEMAND INTELLIGENCE

Industry-leading technology, data and expertise to solve the most complex geospatial challenges



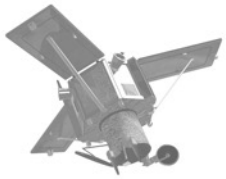
GEOSPATIAL SERVICES

Insights from machine learning and our team of geospatial expert analysts





WorldView Legion is the cornerstone of our future constellation



IKONOS

82 cm resolution
9.0 m CE90



QuickBird

65 cm resolution
23 m CE90



WorldView-4

31 cm resolution
5.0 m CE90



WorldView-1

50 cm resolution
5.0 m CE90



GeoEye-1

41 cm resolution
5.0 m CE90



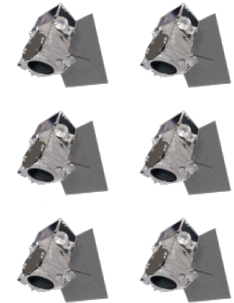
WorldView-2

46 cm resolution
5.0 m CE90



WorldView-3

31 cm resolution
5.0 m CE90



WorldView Legion

29-34cm resolution
< 5 m CE90

Available in archive

Currently imaging in orbit

6x constellation



Timely

Access Program



International Systems

Maxar delivers ground systems to dozens of allied nations

- Maxar's systems and services give customers the ability to lease time on a given spacecraft to perform their own mission operations.
- Direct Access customers are typically international defense and intelligence agencies needing:
 - High volume of image collections
 - Timeliness and reduced latency
 - Privacy in their collection plans and imagery
 - System security
 - Retention of raw data collected



Direct Access Facility (DAF)

Direct satellite tasking using an in-situ ground station for real-time imagery acquisition and downlink. Fast, secure, and guaranteed access.

Rapid Access Program (RAP)

Eliminates large upfront costs via a web-based application and private, secure cloud hosting. Virtual tasking through Maxar.

Tactical Access Program (TAP)

Transportable multi-sensor direct downlink solution for disconnected and challenging environments.



Direct Access Program

Direct satellite tasking using your own ground station for real-time imagery acquisition and downlink to support the most demanding mission requirements.

- Dedicated ground system for the fastest, most secure throughput
- Predictable tasking for assured collections
- Task up to 15 minutes prior to imaging event and receive data via direct downlink within minutes of collection
- Local control and encrypted downlink to ensure a secure, confidential end-to-end workflow
- Flexible licensing terms to satisfy mission and security requirements





Rapid Access Program

Virtual control of the full Maxar constellation through priority tasking, predictable access and imaging operations with a simple and affordable web interface.

- Flexible tasking options allowing changes up to 90 minutes before image acquisition
- Receive processed imagery within six hours of collection (2-3 hours 90% of time)
- Gain secure, online access from anywhere on Earth
- Multi-tiered protection via AWS for your information and imagery archive
- Utilize point targets and large area scans
- Fast, cost-effective deployment; no infrastructure investments required

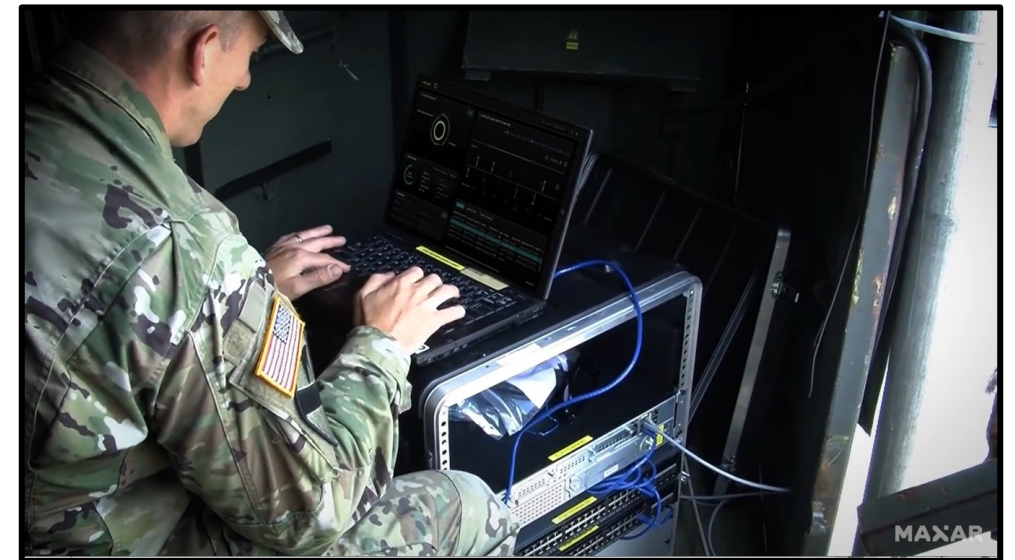
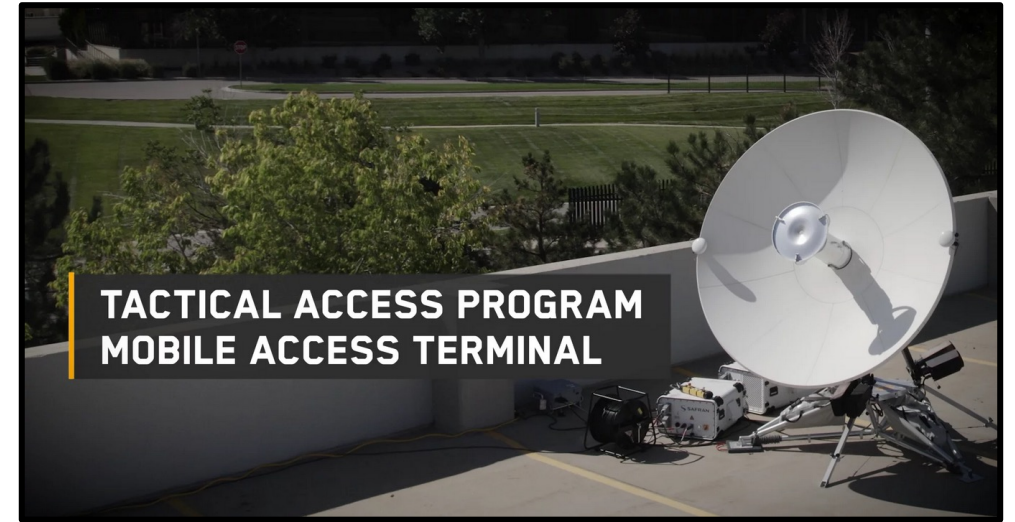




Tactical Access Program

Assured, near-real-time insights through a proven, transportable, and adaptable downlink solution that delivers and processes the world's highest resolution multi-sensor data at the tactical edge.

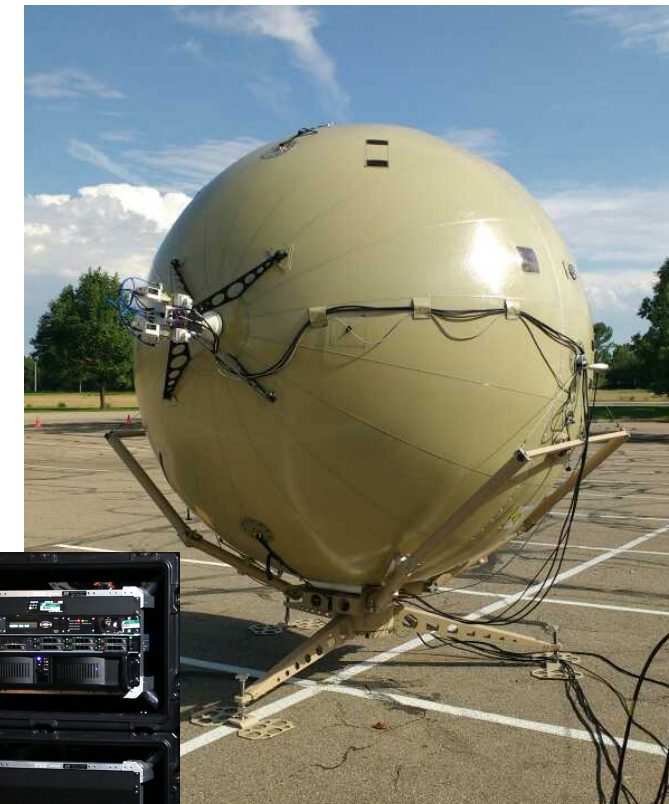
- Direct downlink of multi-sensor data to the tactical edge in disconnected environments
- Low latency image downlink, processing, and dissemination where it's needed most
- Transportable on a variety of commercial and military aircraft, vehicles, and vessels
- Set up in under an hour by two trained users
- Advanced analytics and 3D registration for fast, accurate, data-driven insights
- Modular and adaptable to multiple antennas, receivers, and hardware and software stacks
- Widely-shareable unclassified commercial imagery





USG support: US Army Remote Ground Terminal (RGT)

- An example of how Maxar solutions are already supporting military operations at the tactical edge
- Developed in coordination with Army TENCAP over the past 10 years
- Enables troops in remote locations to rapidly downlink, analyze and disseminate data from a variety of commercial electro-optical (EO) and synthetic aperture radar (SAR) sources, including Maxar's high-resolution Worldview constellation
- Easily transportable and can be set up by two people in about an hour
- Designed to be continuously upgraded with EO and SAR
- The RGT includes robust training for unit operators to enable self-sustained operations, and 24/7 field service support available from Maxar
- The U.S. Army intends to integrate the RGT imagery downlink, processing software, and RF front end into the U.S. Army's future Tactical Intelligence Targeting Access Node (TITAN) that will leverage sensors across multiple domains to provide rapid and accurate targeting data directly to U.S. Army fires networks

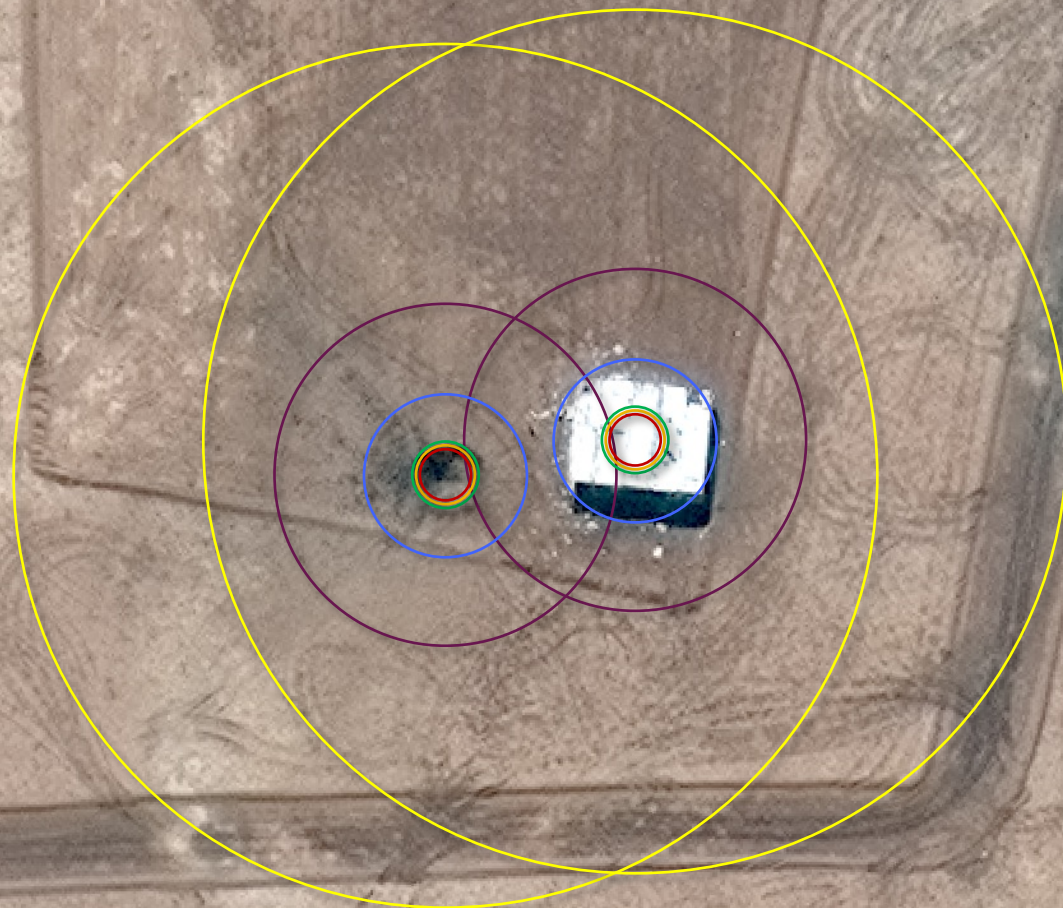










Accurate

Access the best commercial pointing accuracy for when it matters most...

Crater diameter: 9m



	<u>Geolocational Accuracy*</u>	<u>Spacecraft</u>
	<3.5m	WorldView-2, WorldView-3
	4m	WorldView-1, WorldView-4
	5m	GeoEye-1
	8.5m	Pleiades
	<18m	SPOT
	<48.5m	KOMPSAT-3

*Expressed as Circular Error at 90% Confidence (CE90)
[DigitalGlobe](#), [Airbus](#), [KOMPSAT](#)



Geospatial foundation

Highest quality satellite imagery, basemaps and 3D data over any location on Earth



The highest-quality satellite imagery

OPTICAL IMAGERY

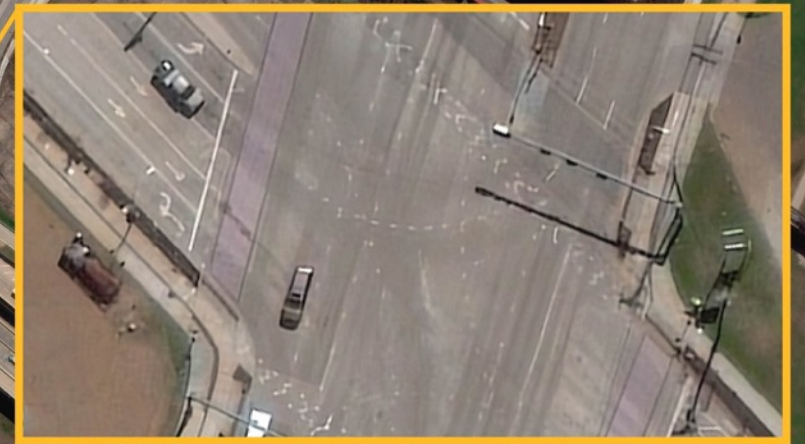
- Native 30 cm resolution and derived 15 cm HD imagery
- < 5 m CE90 positional accuracy
- Multispectral diversity

IMAGERY BASEMAPS

- Stunning, virtually seamless
- Accurate, consistent and actionable
- Local, regional and global scale

ANALYSIS-READY DATA

- Preprocessed time-series stacks of imagery
- Aligned and produced at a set standard
- Subscription access to our 125+ petabyte archive





On Demand

SecureWatch



On-demand intelligence

Industry-leading technology, data and expertise to solve the most complex geospatial challenges

SecureWatch

Get instant access to the Maxar satellite image library and other geospatial data, for insight when and where you need it.

- Stream and download access to over 3 million square kilometers of daily imagery collections
- Cloud-based access to our 22-year global image archive and select data products
- Web-application, plug-ins and APIs to explore, analyze and exploit imagery
- Seamless integrations with most major GIS and remote sensing applications





A new era in geospatial information accessibility

 **21** years
Historical Library

 **Daily Updates**
Latest Content Available

 **Complete**
Global Coverage

 **6,000**
Metro Areas

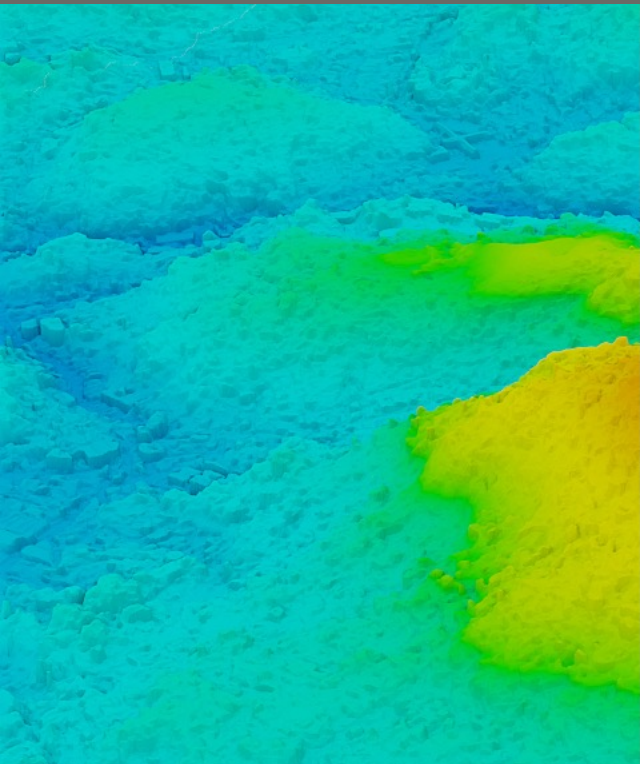
 **Global Access**
Access Anywhere Anytime

 **#1** **Aesthetics**
Most Beautiful Visuals



Consistent
Ready to use

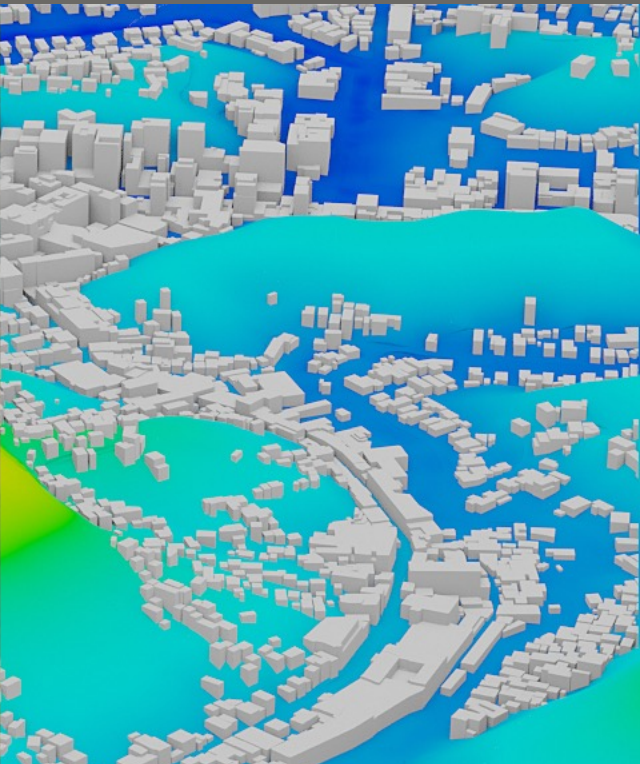
Precision 3D



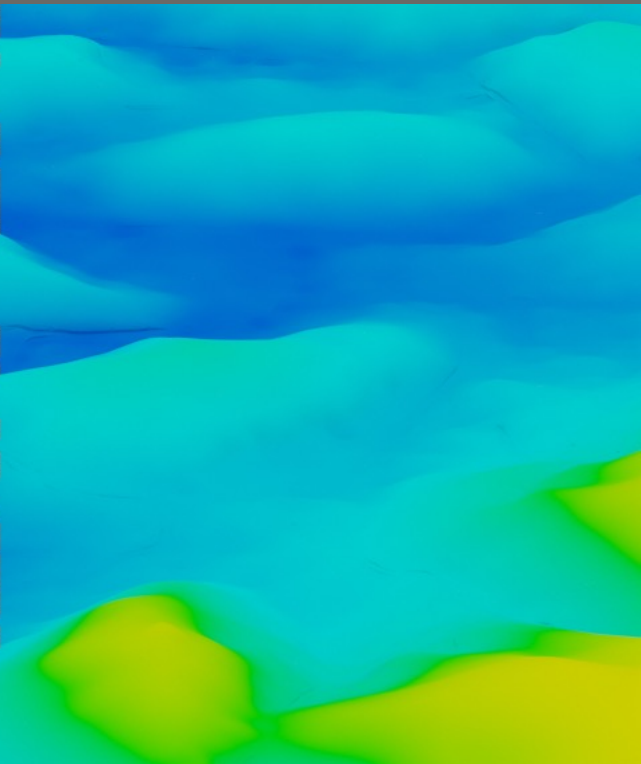
DIGITAL SURFACE MODEL



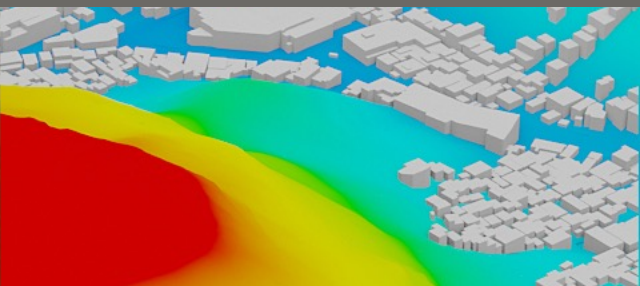
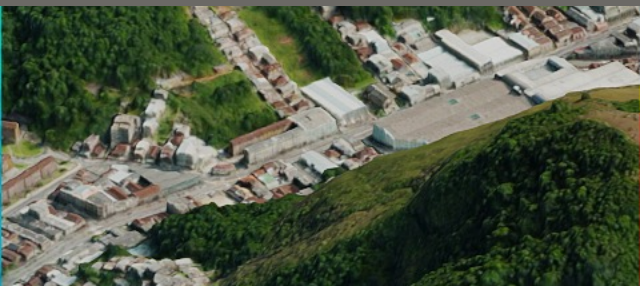
3D SURFACE MODEL



VECTOR BUILDINGS



DIGITAL TERRAIN MODEL





PRECISION3D DATA SUITE

Global Coverage

- Consistent coverage from commercial satellite images
- Sensor agnostic

Automatic processing

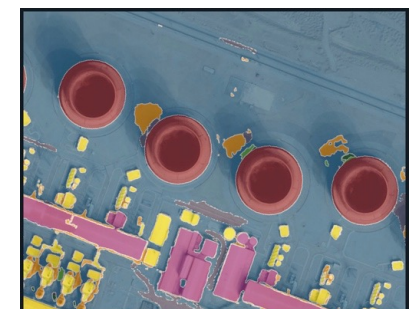
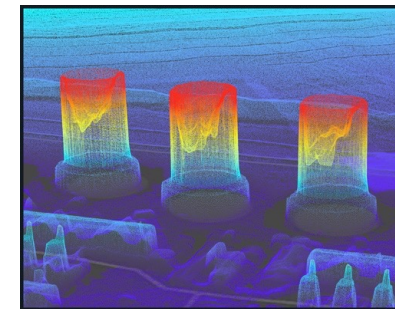
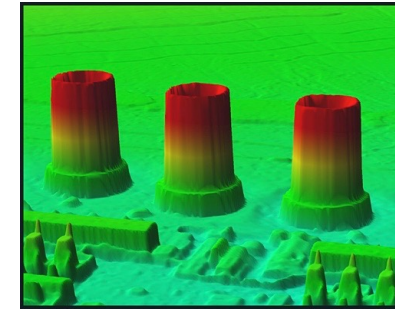
- Datacenter and cloud computing
- Advanced algorithms and machine learning
- Massive scale

A unique technology

- Big data processing
- No need for ground control points
- True photorealistic textures on all sides

Automated derivative products

- 50 cm resolution
- 3 m absolute accuracy in all dimensions (SE90)



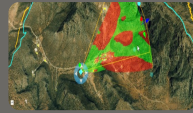


PRECISION3D DEFENCE CAPABILITIES

Fully operational in GPS-denied environments



Training & Simulation, mission rehearsal



Mission planning and Recce



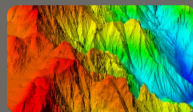
Precision targeting



Component for GPS-denied navigation



Intelligence analysis



High-res, geographical foundation data



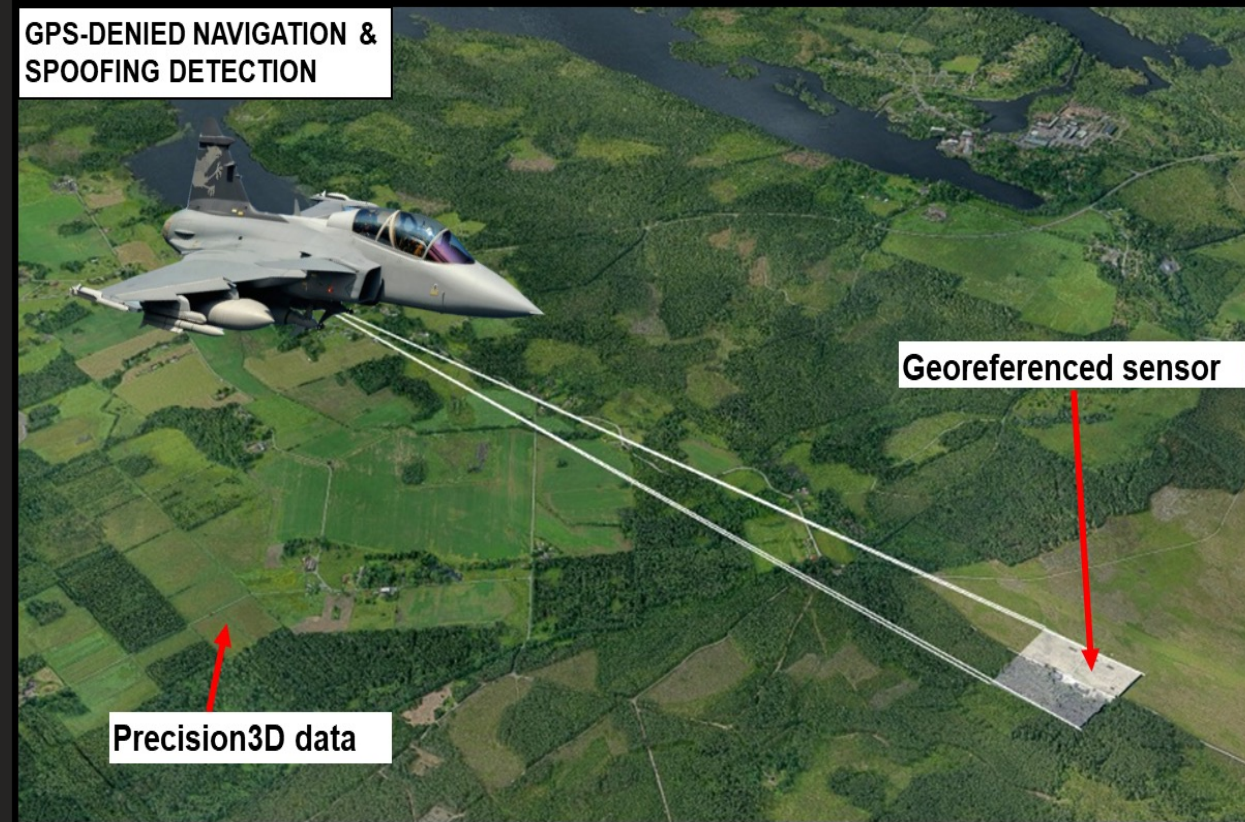
And many more...



MAXAR P3DR – PRECISION 3D REGISTRATION

Automated capability for real-time georegistration to authoritative Precision3D data

- 3D registration is the process of attributing each pixel in an image with a specific location on Earth.
- The 3D registration is a fully automated process, based on image correlation techniques.
- Support for high-res drone 3D, ISR sensor feeds and satellite imagery.
- The key to P3DR is highly accurate reference data—Maxar’s 3D Surface Model of Earth.
- By working in 3D, P3DR natively supports content captured at highly oblique angles.



P3DR: Augmentation

- By georegistering full-motion video against the highly accurate Maxar 3D Surface Model, it is possible to augment various geospatial layers on top of the video itself.
- Examples include road networks, target information, points of interest and other supporting data layers.





In Summary

MAXAR offers end to end solutions for



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