Real-time surveillance just got lighter

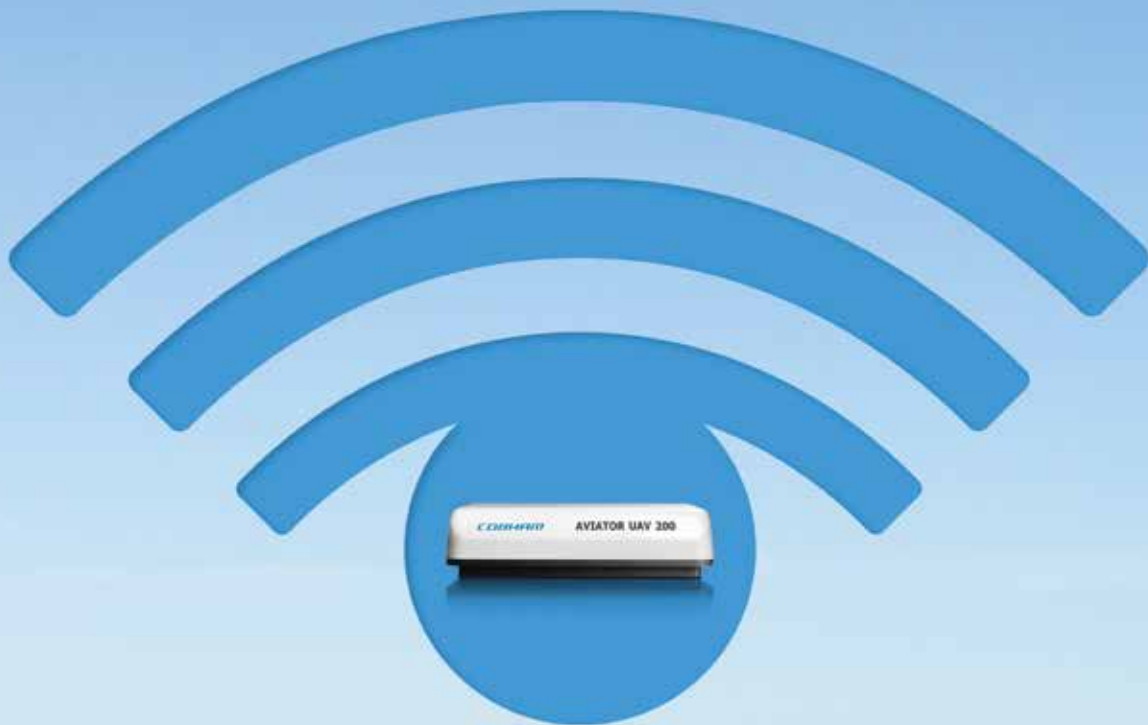**COBHAM**

AVIATOR UAV 200
Enhanced satcom connectivity for tactical UAVs

The world's smallest, lightest Inmarsat UAV satcom solution

AVIATOR UAV 200 matches the connectivity and performance of larger, class-leading satcom systems, but in a far smaller, lighter and less power-demanding package.

Not only does this enhance the performance and capabilities of your tactical UAV, but it greatly expands its payload flexibility.

Tactical UAVs depend upon lightweight components to maximise range, endurance and operational use. However, until now, the size, weight and power requirements of Inmarsat satcom hardware made it impossible to take advantage of the higher speed connectivity from today's satellite networks.

AVIATOR UAV 200, a revolutionary new solution from Cobham SATCOM, redefines UAV satcom connectivity by integrating everything into one compact, lightweight box. Weighing just 1.45 kg, AVIATOR UAV 200 is a remarkable 76% lighter than anything comparable on the market – yet still delivers Inmarsat Class 4 services, up to 200 kbps data and full, real-time control of data channels.

Next generation performance

Enhanced aircraft control

With AVIATOR UAV 200, operators can now send flight commands to the UAV in real time. By making immediate route adjustments as and when necessary, not only does this significantly enhance mission flexibility but it can help to protect the UAV and other airspace users should it need to avoid potential threats or return to base.

Visual capabilities and situational awareness are also significantly enhanced via the ability to send video and photos from the airframe. Previously, this was limited to LOS operations, however AVIATOR UAV 200 now opens up the full BLOS range to give UAVs the same operational and tactical advantages.

- Improved situational awareness
- LOS to BLOS
- Near real-time route adjustments
- Improved airspace integration

Constant health monitoring

Tactical UAVs are designed to be as durable as possible; however, they are often used in stressful environments where there is risk of damage or system faults.

AVIATOR UAV 200 enables the UAV to send extensive health data in near-real time, allowing operators to have a constant overview of on-board systems and structural integrity. Should any problems be detected, the operator can immediately reroute the UAV back to base for repairs or abort a mission with less risk of collateral damage.

- Real-time health monitoring
- Full flight control
- Real-time mission relevance
- Emergency risk reduction
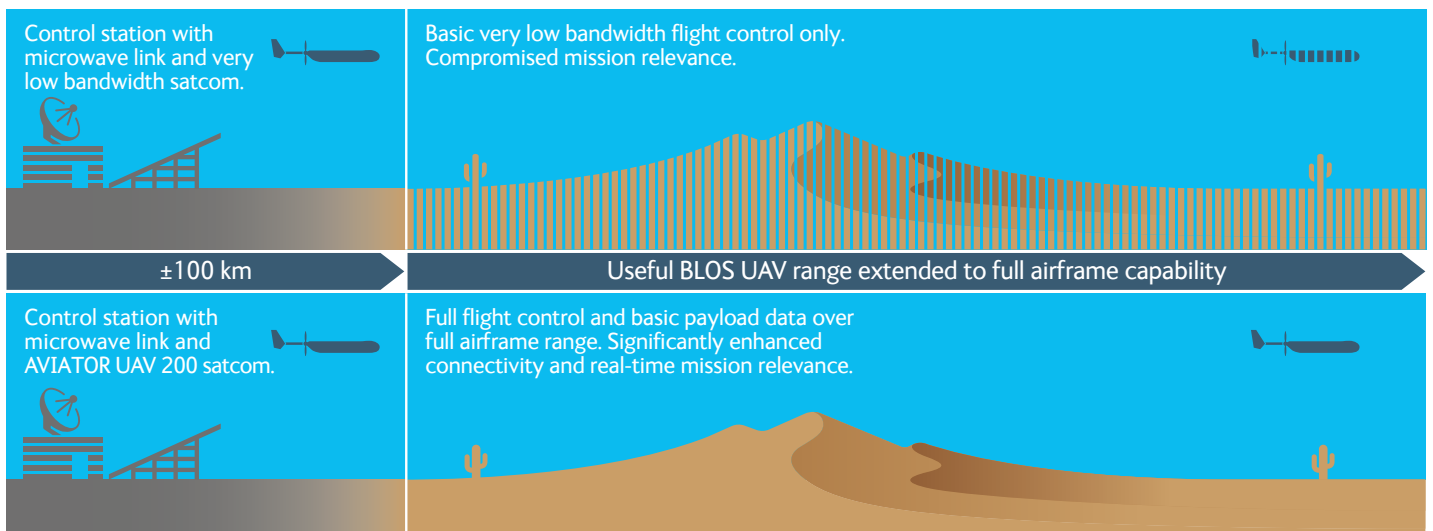
Live photo streaming

For true "eye in the sky" surveillance and monitoring, it is vital that operators get near real-time visual feedback representing the HD video captured. Previously, tactical UAVs had limited connectivity, meaning that all viewing and decision-making that was based on BLOS situational data, had to be within the limited range of LOS flight or after airframe return. By this time, data will often have lost its tactical or commercial value.

With AVIATOR UAV 200, the UAV now enables streaming of photos, visual storyboard and low resolution video to operators. This enables them to react immediately by rerouting the UAV to gather additional data, and/or to retrieve time and spatially mapped high resolution data for decision making.

- View near real-time imagery
- Enhanced BLOS surveillance
- Enhanced tactical/commercial advantages
- The right surveillance in the right location

CONNECTIVITY WITHOUT INMARSAT SATCOM

Control station with microwave link and very low bandwidth satcom.

Basic very low bandwidth flight control only. Compromised mission relevance.

±100 km | Useful BLOS UAV range extended to full airframe capability

Control station with microwave link and AVIATOR UAV 200 satcom.

Full flight control and basic payload data over full airframe range. Significantly enhanced connectivity and real-time mission relevance.

CONNECTIVITY WITH INMARSAT SATCOM

Flight plan risk management ⚠

The ability to safely operate unmanned aircraft in commercial and controlled airspace is a major driver in UAS deployment. With increasing regulatory pressures in this sector, the ability to manage and mitigate risk is invaluable.

Now the UAV operator and local ATC authorities can stay in close contact either indirectly or potentially through an aircraft based IP radio. Should a change to the flight path be required, the aircraft can be dynamically rerouted using the connectivity offered by AVIATOR UAV 200.

- Risk management and mitigation
- Dynamic aircraft re-routing
- Greater operational safety

Greater payload flexibility 📈

A tactical UAV's combined weight has a large impact on its endurance and operational flexibility. By providing a satcom solution that is smaller and lighter than anything bandwidth-comparable on the market, AVIATOR UAV 200 not only improves the UAV's range but significantly expands its payload capability and thereby its commerical and strategic value.

This allows the operator to attach a broad variety of additional components, such as scientific equipment, thermal imaging cameras and data encryption devices for a secured airframe, or extra fuel to extend the UAV's range and endurance.

- Expanded payload capability
- Attach additional components
- Add crypto for a secure airframe
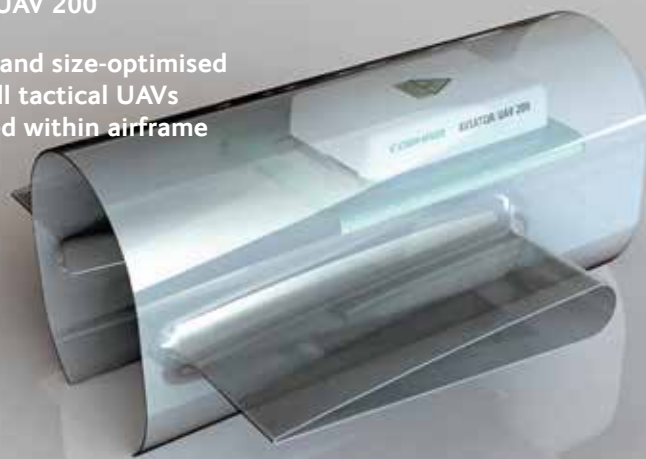- Extended range and endurance

Cost-effective solution ◐

The ability to fit smaller unmanned aircraft with data pipe and smart video/photo processing solutions that can move visual data efficiently from the platform allows UAS fleet operators to procure and operate smaller air vehicles, saving procurement costs, increasing operational flexibility and reducing operational costs.

UAV operators are now able to receive time-critical data and re-task their smaller, long endurance UAV in real time. For a UAV with a 15 hour endurance, the benefits of attaining such information up to 15 hours earlier can be significant; as well as reducing operational cost, it can mean the difference between commercial success. Averting disaster, saving lives and giving you the commercial advantage.

- Procure and operate smaller air vehicles
- Receive time-critical data in near real-time
- Reduce operational costs

AVIATOR UAV 200

- **Weight and size-optimised for small tactical UAVs**
- **Mounted within airframe**

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"Intergrator is a registered trademark of Insitu Inc."

Greater operational flexibility

Military applications

Today, tactical UAVs are widely used by military forces in war zones worldwide, with multiple applications ranging from "eye in the sky" surveillance and tactical communications for forward troops to path clearing operations in minefields.

By enabling basic image streaming, greater range, real-time flight control and an expanded payload, AVIATOR UAV 200 delivers invaluable tactical enhancements to an already indispensable piece of military hardware.

- Greater mission range
- Expanded payload
- Image streaming and situational awareness

Safety and security

Real-time surveillance is essential for safety and security organisations that need effective ways to patrol restricted areas, such as borders or fishing zones, or for monitoring fires, volcanos, floods and other natural disasters.

By extending their range and capabilities through better connectivity and higher data throughput, AVIATOR UAV 200 enables tactical UAVs to play an even more pivotal role in enforcing border security and ensuring public safety.

- Enhanced border security
- Search and rescue
- Real-time scene surveillance
- Disaster management

Commercial use

Businesses across a variety of industries and sectors rely on tactical UAVs for a broad range of commercial applications, including mapping surveys, mineral exploration and oil pipeline monitoring.

With better and lighter satcom technology, AVIATOR UAV 200 enables businesses to get more value from each flight through faster data transfer, greater operational range and the ability to preview and move more data from a variety of sensors to ground control and data collection/analysis points.

- Crop management
- Geophysical surveys
- Pipeline monitoring

Scientific research

Tactical UAVs are used extensively within the scientific community for observing events or places that pose a potential danger or are inaccessible to human beings, for example volcanoes, and rural, arctic or mountain areas.

With the ability to carry a broader array of scientific equipment further and for longer, AVIATOR UAV 200 transforms tactical UAVs into a highly flexible, multi-purpose tool for many types of scientific research and exploration.

- Improved research capabilities
- Monitor natural disasters in real time
- Conduct detailed, non-invasive research

More performance. Less everything else.

- **Weight: 1.45 kg**
  (nearest model: 6.1 kg)
- **Power: 28 W**
  (nearest model: 73 W)
- **Size: 1 box solution**
  (nearest model: 3 boxes plus cables)
- **Flight control to aircraft range**
  (sufficient bandwidth for full aircraft control over total potential aircraft range)
- **Payload flexibility**
  (due to size, weight and power savings)

1.45 kg

AVIATOR UAV 200

By integrating everything into a single, compact, lightweight, and low-power package, the new AVIATOR UAV 200 satcom solution significantly enhances a tactical UAV's performance, range and payload flexibility.
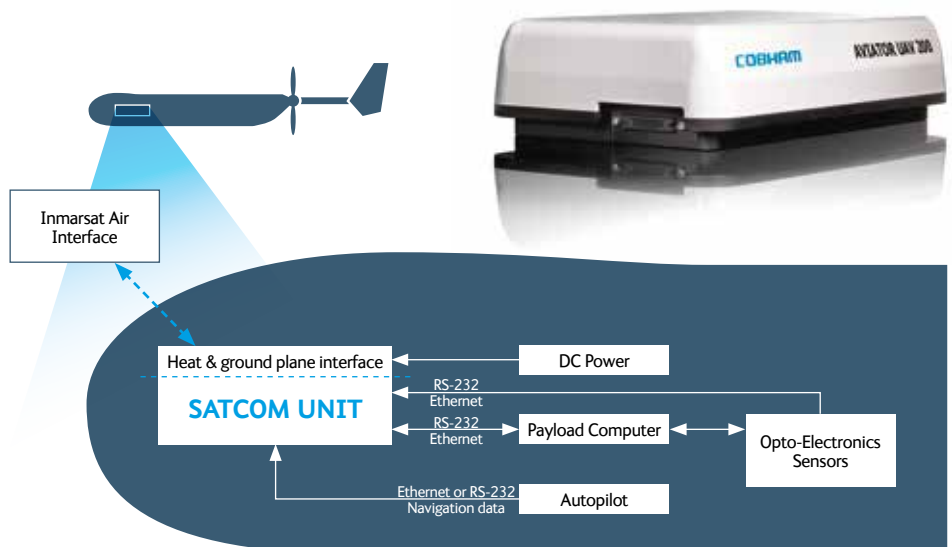
AVIATOR UAV 200

- Single Line Replaceable Unit solution
- Weight and size-optimised for small tactical UAVs
- Mounted within the airframe
- Inmarsat Class 4 SwiftBroadband
- Full Inmarsat hemisphere coverage to 5° elevation
- Background data service up to 200 kbps
- Streaming class services up to 32 kbps
- User class context control
- System BITE
- Interfaces to aircraft
  - DC Power (14 - 28 VDC)
  - Nav in via RS-232 or Ethernet
- User interfaces
  - 2 x Ethernet
  - 2 x RS-232

Mechanical overview

- Single box solution
- Weight 1.45 kg.
- Dimensions: 24 x 16 x 6 cm
- Mid-flange for ground plane and heat management
- Micro-D connector interface
- Protected user-accessible USIM

Key benefits

- Improved situational awareness
- Real-time health monitoring
- View near real-time imagery
- Dynamic aircraft re-routing
- Add crypto for a secure airframe
- Reduce operational costs

Technical specifications may alter slightly

The most important thing we build is trust

For further information please contact Cobham SATCOM Aero:

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