
Air-IQ™
The intelligence you demand
at the speed they need.
Viasat

Air-IQ: an aerial view

Faster, smarter AISR

Air-IQ is the ultimate solution for crewed and uncrewed aircraft, achieving faster uplink speeds and flexible connectivity for every ISR mission. All while meeting high security standards. This robust service balances reliability with versatility, optimizing operational and commercial efficiencies by flexing throughput levels to meet the demands of the mission, wherever in the world that might be.

Providing flexible intelligence

It enables AISR operators to transmit high volumes of data from numerous aircraft sensors where mission profiles are limited to specific geographic regions.

Designed to be the ultimate ISR toolbox, Air-IQ SLAs also flex around your needs. We can integrate connectivity either by expanding existing services and contracts, or by developing a new, ISR-centric service based on your exact requirements.

From a connectivity partner you can trust

With a 48-year heritage in satellite communications and long-standing relationships with governments, Viasat knows how to take the complexity out of ISR connectivity. Our solutions are easy to use, maintain and upgrade, so you can stay focused on the mission. That's why we provide 24/7 technical support, as well as proactive monitoring and maintenance, working with you to ensure the highest standards of customer service.

Delivering future-proof solutions

Innovation is at the heart of all our solutions. Viasat's detailed technology roadmap ensures that the solution not only meets your current needs but also adapts to your future requirements.

Recognising your priorities

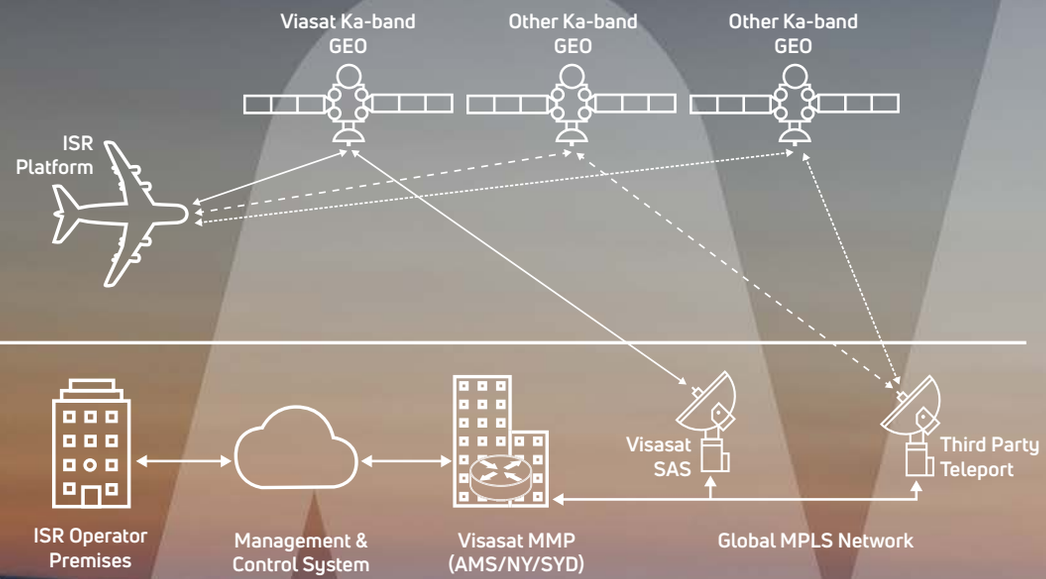
During a tactical ISR operation, there's typically a need for aircraft to report findings by sharing images and videos, and to receive mission amends and directions. These operations often require high throughput from the aircraft, supporting bandwidth-hungry and time-critical applications. Consequently, the top AISR priorities are:

- **High bandwidth on the return path**
  You need the flexibility to access higher bandwidth off the plane for more sophisticated mission requirements.
- **Reliability**
  Operating in contested environments necessitates committed service levels and resilient communication solutions to develop PACE planning.
- **Security**
  Sensitive AISR platforms require low probability of intercept/low probability of detection (LPI/LPD), anti-jamming, data encryption, and network security monitoring.
- **Flexibility**
  Maximise cost efficiency by harnessing multi-faceted, flexible commercial offers that can be adapted meet mission needs.
- **Sovereign augmentation**
  Increase sovereign capability by augmenting indigenous solutions with compatible commercial terminals and technology.

Mission accomplished

Air-IQ ticks all the above boxes with a comprehensive solution that includes airtime service, aircraft fit-out, ground segment and control platform. It successfully completes our mission to:

- Deliver high bandwidth return path connections via a variety of connectivity paths.
- Augment sovereign capabilities through seamless roaming between networks and services.
- Provide a secure, self-service control platform and advanced management through SD-WAN capabilities.



Connectivity that changes on demand

Air-IQ enables seamless switching between different types of technology, delivering the most suitable, on-demand return throughput capability.
Your ISR platform has a global baseline capability upon initial take-off, with enhanced capability when it moves closer to the region of operation via TDMA technology delivering a committed data rate. You can even ramp up that capability via dedicated lease-based SCPC technology to facilitate highly sophisticated ISR on-spot activities. And when a mission is completed, Air-IQ rolls back to either regional or global packages for the remainder of the non-critical journey.

It also offers a high level of resilience for Government ISR operators, thanks to multi-layer connectivity. The global G2X and Air-IQ regional GX services via TDMA technology provide guaranteed SLAs with unlimited data and connectivity certainty.

The Air-IQ private managed lease service uses either on-net or off-net capacity to deliver an extra layer of connectivity and performance to the on-spot mission, treating G2X Air or Air-IQ regional GX as a tiered fallback.

Key components

Airtime services

Air-IQ offers two service levels today. A premium private managed lease service and a shared regional managed service.

- **Air-IQ private managed lease service:**
  Provides return link bandwidths up to and above 10Mbps. The service is based on multi-beam Ka-band leasing, enabling high-return throughputs with the beam defined area (on-mission) and roaming to/from a global GX plan outside of that area (off-mission). Multiple simultaneous operations (SIMOPS) can be supported under a single monthly subscription-based lease.
  Consequently, this airtime package provides AISR operators with more flexibility to choose and manage throughput performance to suit operational needs as they arise.

- **Air-IQ regional GX service and G2X:**
  Allows return links up to 5Mbps on a strictly regional basis.
  It enables a terminal to seamlessly roam between a higher throughput region (on-mission) and a global connectivity service outside the region (off-mission). Both monthly subscription and occasional use options are available.

Aircraft fit-out

Air-IQ offers essential hardware components for aircraft fit-out to establish an effective communication mission system with an ISR terminal and enhanced G-MODMAN.

G-MODMAN integrates with various types of waveforms and G-MODMAN OP (open platform), which is effectively an arbitrator, manages the seamless switching.

The Air-IQ hardware product portfolio offers you the flexibility of not only choosing the airborne terminal that best fits your ISR platform, but also the ease of modem integration when choosing the most suitable SCPC waveform. You can even incorporate your own preferred modem.

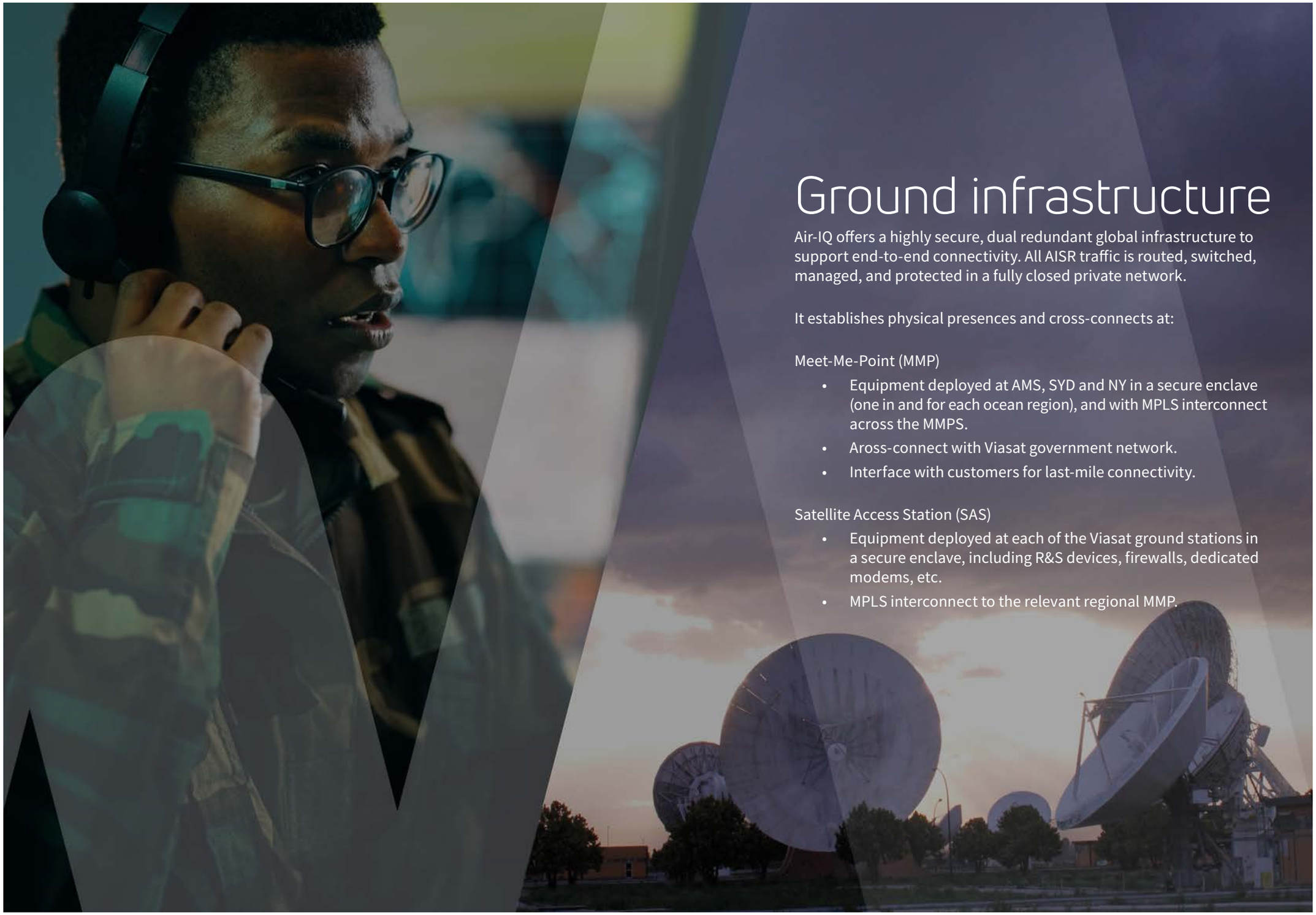
The openness in MIP and system integration also gives government users great interoperability when interfacing with their own sovereign SATCOM capability, enabling switching, management, control, and monitoring independently, which also enhances the security of SATCOM connectivity.

The key features of an all-in-one G-MODMAN and OP include:

- G-MODMAN III, a single modem unit, including both the IQ-800 based GX modem and the G-MODMAN OP switching capability, and the space for a second, internally integrated modem card, as well as two external slots for modem cards.
- G-MODMAN connected to an external SCPC modem for seamless switching between a GX subscription, a G-MAX subscription and a lease service.
- Multiple ways to switch based on geolocation via a web UI or remote APIs.
- Increased processing power in G-MODMAN to enable future SD-WAN integration without additional equipment.

AirIQ also offers a portfolio of terminal options:

- Antenna type, i.e. parabolic or plat panel array.
- Aperture, i.e. 30cm or 46cm (or equivalent).
- Frequency band, i.e. Ku, Commercial Ka, or Mil-Ka.
- Aircraft fitting, i.e. fix mount (tail and fuselage), or roll-on-roll-off.
- Antenna Manufacturers, i.e. built by Viasat in-house or Viasat ecosystem.
- Aero SCPC modem, i.e. Viasat in-house made or Viasat ecosystem built.



Ground infrastructure

Air-IQ offers a highly secure, dual redundant global infrastructure to support end-to-end connectivity. All AISR traffic is routed, switched, managed, and protected in a fully closed private network.

It establishes physical presences and cross-connects at:

Meet-Me-Point (MMP)

- Equipment deployed at AMS, SYD and NY in a secure enclave (one in and for each ocean region), and with MPLS interconnect across the MMPS.
- Aross-connect with Viasat government network.
- Interface with customers for last-mile connectivity.

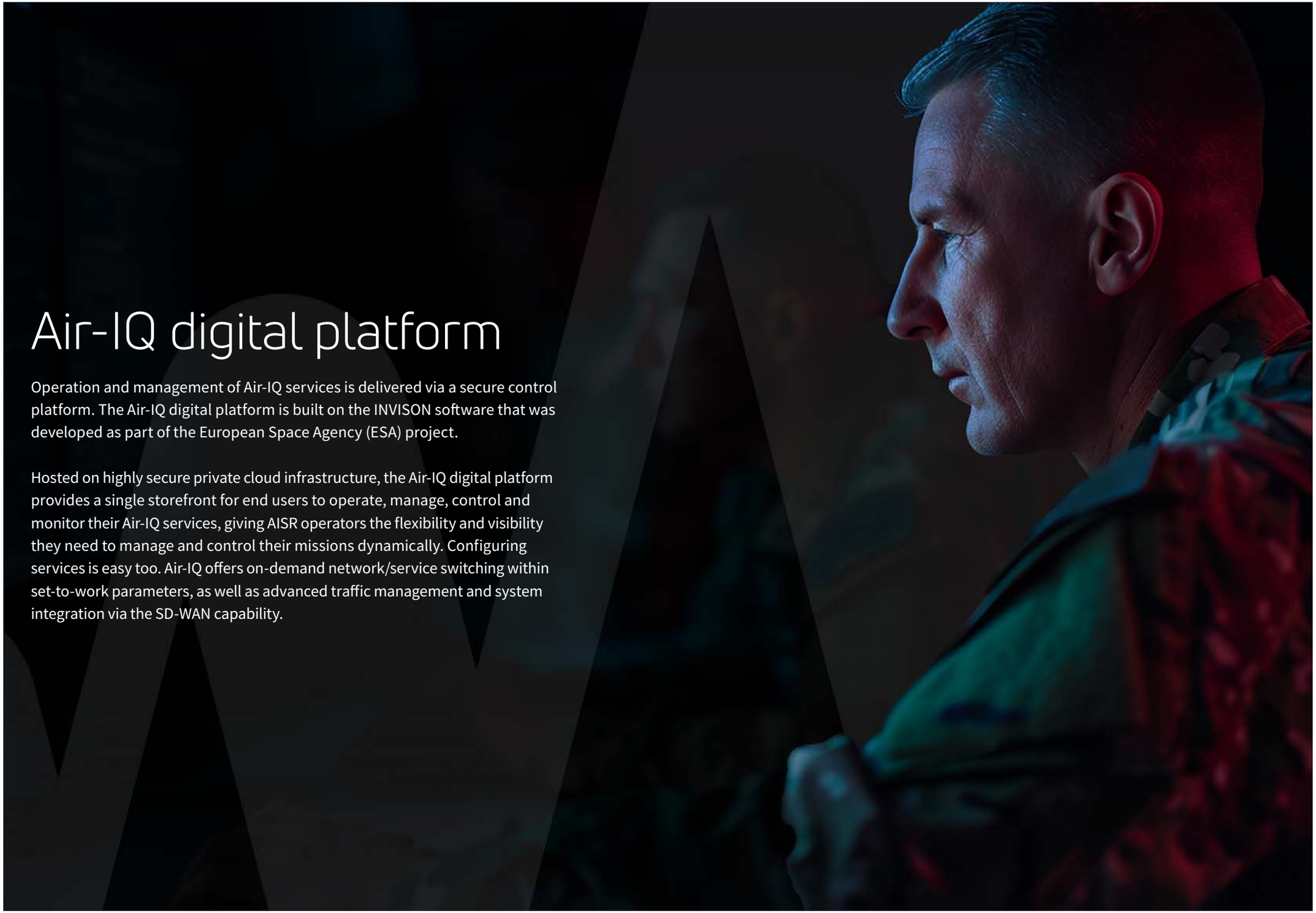
Satellite Access Station (SAS)

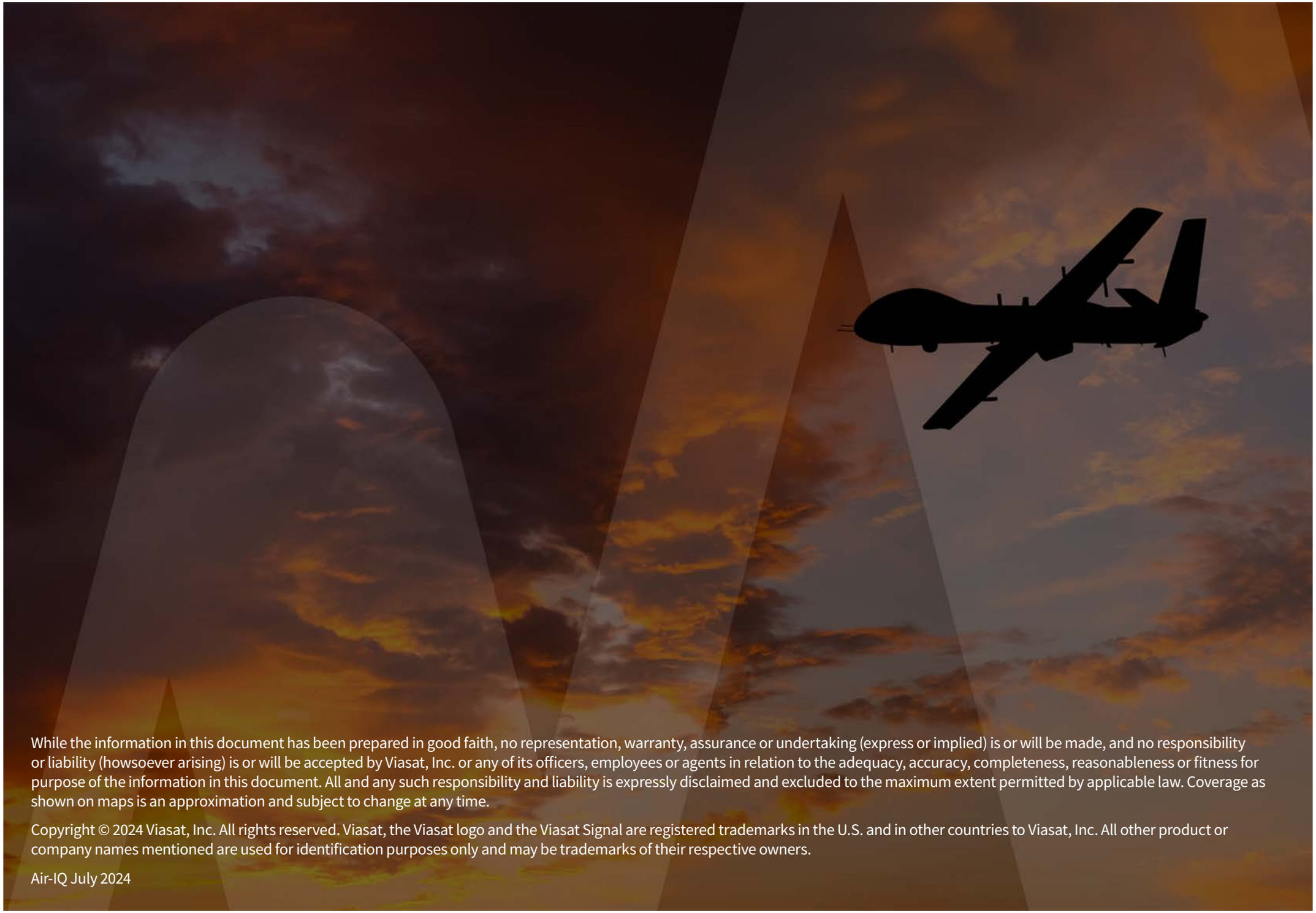
- Equipment deployed at each of the Viasat ground stations in a secure enclave, including R&S devices, firewalls, dedicated modems, etc.
- MPLS interconnect to the relevant regional MMP.

Air-IQ digital platform

Operation and management of Air-IQ services is delivered via a secure control platform. The Air-IQ digital platform is built on the INVISON software that was developed as part of the European Space Agency (ESA) project.

Hosted on highly secure private cloud infrastructure, the Air-IQ digital platform provides a single storefront for end users to operate, manage, control and monitor their Air-IQ services, giving AISR operators the flexibility and visibility they need to manage and control their missions dynamically. Configuring services is easy too. Air-IQ offers on-demand network/service switching within set-to-work parameters, as well as advanced traffic management and system integration via the SD-WAN capability.





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