Viasat

Optimising ISR Aircraft

Global, multi-intelligence gathering operations from airborne platforms

Effectively employing manned and unmanned aerial ISR assets requires globally-portable, fully connected and efficient beyond line of sight (BLOS) connectivity for Processing, Exploitation and Dissemination (PED).

As governments around the world are evaluating their future data and communication technology to support these missions, Ka-band has emerged as the preferred path forward for the Airborne Intelligence, Surveillance and Reconnaissance (AISR) community.

The data driven nature of these AISR missions greatly benefits from smaller apertures to maximize platform range and reduce signature. Meeting the requirements of communication certainty, security and BLOS flexibility, the Global Xpress network enables an efficient platform installation using low-size, weight and power (SWaP) user terminals. These terminals provide access to commercial and military Ka-band services worldwide with return link data rates that are efficiently delivered and support user-specified data rates at much lower total cost to operate than other solutions.

Using the standard Global Xpress commercial subscription service, small AISR terminals (30cm and 46cm apertures) support return link (platform to gateway) connectivity at rates of up to 10+Mbps*. These same terminals support return link connectivity at rates up to 100+Mbps using our High Capacity Cross Strap (HCX) military Ka-band beams*.

Cost Efficiencies

For missions operating over vast coastlines, the ability to transfer live data and BLOS communications, as well as quicker access to mission command has resulted in more efficient sorties, fewer flying hours and an increase in operational efficiency.

Calculation based on Bombardier Dash 8 patrol aircraft

Average operating cost per hour:	Flying hours per year:	5% flying hour reduction	Cost saving per annum:
$2490	20 000 hours	1000 hours	$2.49m

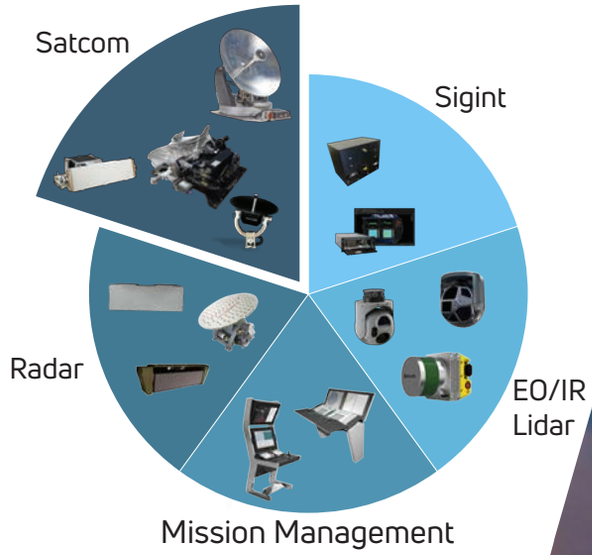
The role of satellite communications in the broader ISR ecosystem

When setting up an ISR mission platform, you can have the best sensors, mission management and EO/IR equipment, but without a strong communications link to transmit mission data, the effectiveness of the equipment is diminished. To fully utilize the capabilities of the ISR mission platform, it is crucial to have a dependable and efficient communications system in place that can transfer situational awareness data in a timely manner.

Many platforms are equipped with microwave links providing a robust LoS connectivity pipe. However, as the target area becomes broader, SATCOM provides a reliable and cost effective* BLOS solution to enable seamless connectivity across the entire mission, no matter the location.

Within NATO, E3, E7 and other AEW platforms have played a significantly increased role in providing advanced ISR capability. SATCOM is now viewed as an essential and integral connectivity solution amongst radar, UHF, VHF and link16.

** When compared to the cost of expanding or building out a microwave network.*



Security

Designed from the ground up for government users, Global Xpress traffic lands in NATO/ Five-Eyes countries, providing customers a high level of mission assurance. The controlled gateways are outfitted with secure facilities and are highly resilient, offering full hot-backup connectivity to every satellite. Provisions have been made throughout the network to provide Operations Security.

Opting for Viasat's Ka-band services, which feature a specialised, targeted feeder architecture, provides customers with enhanced operational security. In contrast to the broader coverage Ku-band beams, which currently allow adversaries to easily retrieve users' geolocation.

Our eye in the sky requires much less bandwidth than you think

We have a number of partners that can deliver video optimization and encoding solutions to provide high resolution video and imagery even across limited bandwidth. The ability to share mission data in real-time provides stakeholders with the critical information to make informed decisions in theatre. Whilst BLOS does have bandwidth limitations, the trade off is typically resolution vs frame rate. Image below shows high resolution, low bandwidth streaming achieved using Ansur technology: 100kbps at 1920x1080 (3fps).

No two missions are the same

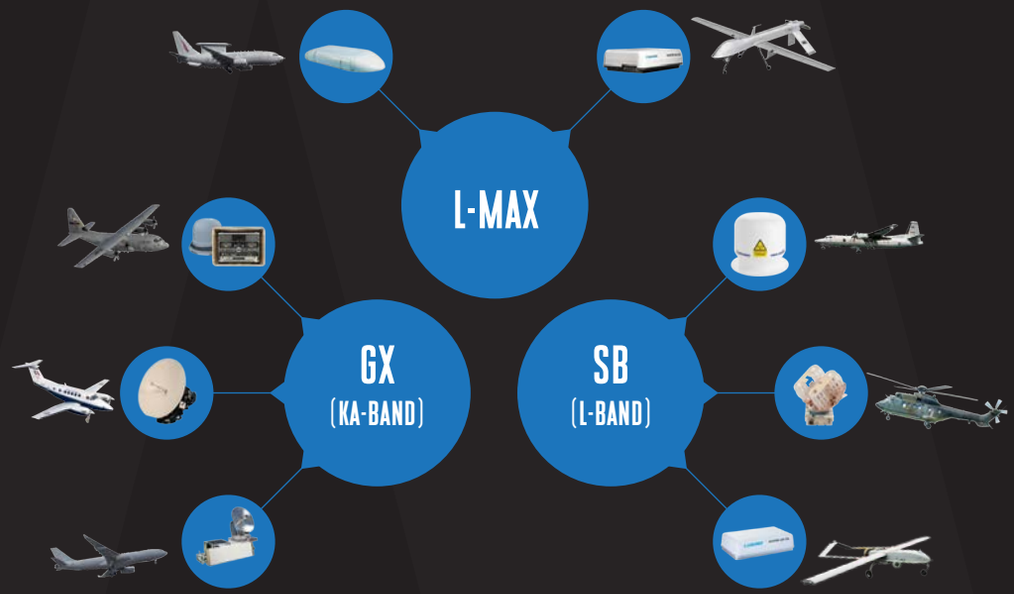
Bespoke offerings are often required to cater to the individual needs of the airborne ISR operator. We work closely with our government partners and end users to deliver the optimal and most cost-effective solution to meet your ISR needs.

Network of specialist partners

This modular mission management console is part of a bespoke King Air Solution delivered by turnkey partner Eclipse Global Connectivity.

Orbit-46 providing GX solution for KA-350

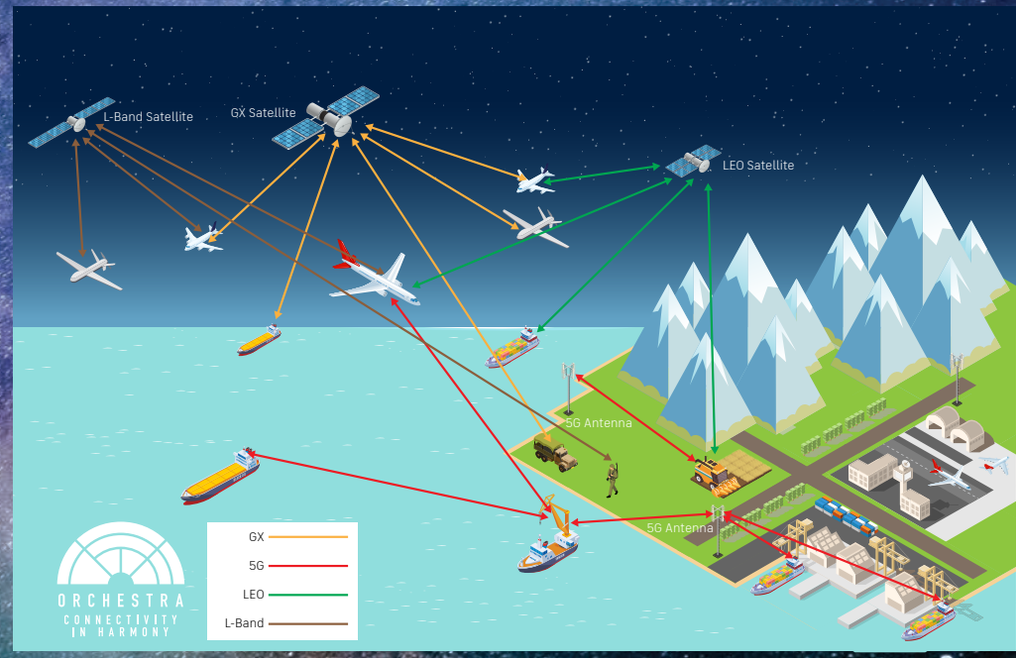
Solution portfolio



As a multi-generational, multi-band network provider with over 40 years' experience providing SATCOM solutions to critical government missions, we can provide solutions to cater for all platforms. Viasat is a platform agnostic organization. By engaging with us and our specialist partner network to discuss operational requirements you can rest assured that we have the combined industry experience and excellence to deliver the optimum solution to cater for your airborne ISR needs.

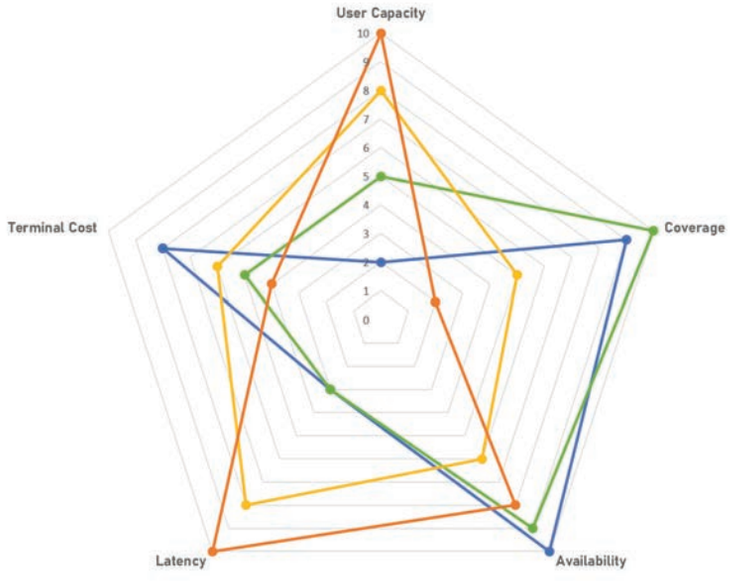
Space 2.0 Integrated ISR capability in the space age

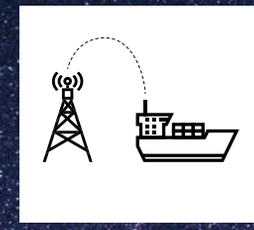
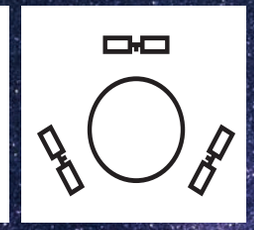
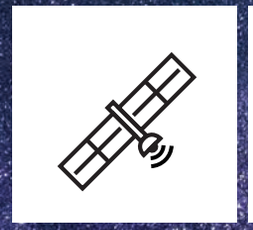
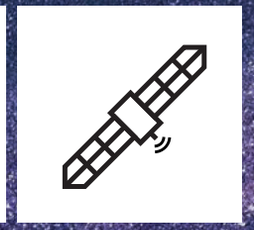
Militaries around the world are now increasingly looking to incorporate space into their ISR and overall defense strategies. Leveraging existing space based assets can deliver immediate access to broader capability, whist Viasat can take government users on a journey to self managed space capability through our network of networks, ORCHESTRA.



Reliable global performance

Needs independent and complimentary layers



			
Meshed Terrestrial Super Wideband	LEO Super Wideband (GX 3.0)	Global Commercial and Government Wideband (GX, GX2.0, Ka Band)	Global Narrowband (BGAN, L-band) (GX, GX2.0, Ka Band)
Super Capacity hotspot fill	High Capacity, low latency GX overlay	High availability global broadband	Resilient fallback and network management

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