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## Delivering mobile military communications services ● ●

Secure, reliable communications on the move (COTM) plays a critical role in the government and military sectors the world over. Satellite, of course, plays a major part in keeping people connected, delivering ubiquitous quality of service the world over. When COTM accessibility can mean the difference between mission success and mission failure, companies across the globe are eager to develop and improve service offerings to the best of their abilities.

**The ability to communicate on the move is something** we take for granted, but it's also a fairly new development. It's not so long ago now that we didn't have access to mobile phones and other mobile communications technologies in our everyday lives. Today, however, it seems that most of us are communicating in one form or another for almost all our waking hours. With phones and tablets almost permanently attached to our hands, we interact with hundreds of people every day over social media, for work and for pleasure.

The ability to communicate while mobile is an essential part of battlefield operations. Way back when, messengers would travel to and fro, relaying vital information between troops and commanders. This method, along with messenger birds and shouted orders, was eventually replaced by radio and Morse code, and more recently, personal role radios (PRRs).

As technology developed, so too did communications capabilities; in addition to PRRs, battlefield satellite communications, utilising a mobile antenna, either flyaway or installed on ground vehicles, became commonplace. This new era of satcom on the move (SOTM) allowed new, secure messaging capabilities, with real-time updates in a way that had never been seen before. Development of more advanced communications on the move (COTM) systems, with increased security or with SWAP (size, weight and power) improvements, is ongoing to this day.

### Viasat ramps up military offerings

Global communications company Viasat has operated in the satellite sector for more than 30 years, delivering services to government, commercial, enterprise and military customers the world over. It's been a significant year for the company, which is currently working to expand its presence in the government and military markets.

In January, Viasat was awarded an indefinite delivery/indefinite quantity (IDIQ) contract with an initial ceiling of US\$350 million for advanced equipment, systems, services and support to significantly modernize ground/air situational awareness, tactical data links, terrestrial networking, intelligence, surveillance, and reconnaissance (ISR), tactical satellite communications, information assurance, network management and cybersecurity for Special Operations Forces.

The IDIQ contract is structured to expand and evolve over time, keeping pace with rapid technology advancements in mobile networking, cybersecurity and broadband satellite communications technology sectors. The flexible nature of the IDIQ will allow Special Operations Command (SOCOM) to rapidly acquire, deploy and evolve a wide variety of new operational capabilities, terminals, products, systems, services, support and sustainment in support of current and future SOCOM missions.

"We at Viasat have a deep and enduring commitment to our

growing partnership with SOCOM. As a part of that commitment we continue to exploit opportunities to apply our cutting-edge commercial technologies to rapidly develop and deploy new and advanced military operational capabilities in support of SOCOM's most critical missions," said Ken Peterman, President, Government Systems Viasat. "This sole source award establishes a comprehensive contract vehicle enabling SOCOM to rapidly acquire and deploy these new and modern capabilities in support of evolving mission scenarios faster than ever before."

The contract award is aligned with current Department of Defense (DoD) initiatives to modernize the military's tactical network. In recent statements to the Senate Armed Services Committee, General Raymond A. Thomas, III, Commander USSOCOM discussed this need to be able to rapidly transform capabilities: "While we are fully committed to winning the current fight, we are simultaneously working to prepare for the conflicts of tomorrow. We are always searching for improvements and relentlessly pursuing our next advantage."

This contract vehicle will help ensure SOCOM has a modern network with tactical systems that are agile and responsive to the complex requirements of the multi-domain battlespace, while assuring that deployed systems remain flexible enough to continuously evolve and adapt today's rapidly advancing technologies associated with mobile networking, information technology, cybersecurity and broadband satellite communications.

Later in March, Viasat announced that services over its ViaSat-2 communications satellite were now available for government, defence and military applications. The service leverages the world's most advanced communications satellite, ViaSat-2, along with innovations in ground networking technologies, that will deliver significant performance advantages over any other commercial or DoD satcom system.

In early March, Viasat conducted a ViaSat-2 satcom system demonstration, attended by representatives from the US armed forces, where they demonstrated a number of cloud-based government applications. The speeds on the ViaSat-2 satellite system demonstrated the industry's fastest broadband connections, exceeding 100Mbps during the demonstration day.

The ViaSat-2 satcom system has the ability to:

- **Transmit bandwidth-intensive, media-rich cloud applications:** Fast data rates and more satellite capacity



● ● Photo courtesy Viasat

will enable 4K and HD video streaming to thousands of electronic devices simultaneously for greater operational capabilities at the tactical edge.

- **Conduct more simultaneous operations:** Abundant capacity will enable warfighters to capture and send Intelligence, Surveillance, and Reconnaissance (ISR) sensor data; transmit live two-way video conferencing and Voice over Internet Protocol (VoIP) calls; as well as conduct Command and Control (C2) and Situational Awareness (SA) communications as prioritized traffic to many more platforms in a region.
- **Continue operating through an electromagnetic, terrestrial or cyber-attack:** Resiliency is provided through the ViaSat-2 system's exceptional anti-interferer performance, Viasat's unique Satellite Access Node (SAN) gateway diversity, seamless satellite switching and assured pattern re-routing to operate through gateway failures, and through Viasat's Active Cyber Defense, which automatically detects, mitigates and attributes Distributed Denial-of-Service (DDoS) attacks against the network's infrastructure. The resilient nature of the Viasat network will enable mission-critical communication packets to be protected and distributed safely, even in highly contested combat environments.
- **Provide assured communications:** Viasat's Best Available Network concept provides a global, redundant system for military to access Viasat's global Ku-band networks, its more advanced Ka-band networks, as well as the Wideband Global SATCOM (WGS) system. The Best Available Network allows terminals to roam across multiple networks to maximize resiliency and collaboration for ground fixed, transportable, mobile, maritime and airborne platforms.

"We are proudly demonstrating emerging US government concept of operations requiring bandwidth-intensive, cloud-connected military applications with our latest high-throughput commercial satellite, ViaSat-2," said Ken Peterman, President, Government Systems, Viasat. "The innovations in the new ViaSat-2 satellite and network show that we can dramatically improve operational capabilities for military missions. This satcom system is the first in our series of ultra-high-capacity global satellite networks, which will enable superior reach, readiness, and resiliency for global military forces."

Meanwhile, in June, Viasat acquired UK-based Horsebridge Defence and security, which focuses on design, system integration and support of deployable secure networks, in order to enable Viasat to continue to grow its business in the UK defence market by delivering mission-critical ground-based communication networks and services. Horsebridge Defence and Security has developed robust relationships with the UK Armed Forces, supporting a number of UK Ministry of Defence (MOD) programmes.

"By acquiring Horsebridge Defence and Security, we hope to accelerate the trajectory of our ability to support UK defence operations," said Peterman. "Viasat builds best-of-breed technology solutions that leverage commercial innovation; and by combining our strengths with the deep domain expertise of the Horsebridge Defence and Security team, we intend to reliably extend commercial, military or emergency service networks to the tactical mobile edge."

The Horsebridge Defence and Security team will be integrated into Viasat's already established and growing Farnborough, UK-based organization. They will have immediate access to Viasat's full communications portfolio from the company's most advanced satellite communication and Link 16 mobile networking solutions to its innovative cybersecurity and information assurance capabilities.

"Viasat is a strong match for the Horsebridge Defence and Security team; we are aligned both culturally and in our technical vision for how to bring secure ground networks to UK MOD and adjacent markets," said Martin Flather, Director, Horsebridge

Defence and Security. "Having access to Viasat's broad portfolio of technologies and capabilities will enable us to create new secure communications and mobility platforms that leverage high-capacity mobile networks with assured availability—with accredited secure voice, video and messaging services—whenever and wherever military forces require it in the UK or overseas."

Horsebridge Defence and Security develops and integrates technologies under its Kestrel II-branded services portfolio. The Kestrel brand has a strong reputation with MOD through successful delivery of a high-capacity ground network for a specific operational mission. The Kestrel II portfolio offers a range of complementary secure network products, solutions and services that are specifically targeted at today's UK Defence requirements and are continuously integrated and continuously developed (CI/CD) to stay at the forefront of technology.

### GetSAT delivers high speed mobile communications for military applications

GetSAT is an innovator in small, lightweight satellite communications terminals for airborne, ground and maritime applications. Serving the commercial and government sectors, the company has been ramping up its presence in the military sector in recent years.

In March, the US Government selected GetSAT's MicroSAT and MilliSAT L/M (land and maritime) terminals for providing maritime and ground-based secure COTM applications.

GetSAT's micronized communications terminals are based on the company's patented fully-interlaced InterFLAT panel technology for transmitting and receiving signals on the same panel. Meeting the demanding requirements of full time usage in harsh environments, these rugged SOTM terminals offer significant savings in size, weight, and power usage.

"Our selection by the US Government is not a surprise. Rather it is a testament to our platforms meeting a myriad of mission critical operations parameters. Soon, GetSAT's InterFLAT panel technology, as well as our platforms, will become common names throughout the industry as we continue to provide leading edge communications on the move solutions, platforms and technologies," said GetSAT CEO, Kfir Benjamin.

Constructed in a super-light compact installation, GetSAT's L/M platforms are micronized, fully integrated, on the move rugged terminals. Based on built-in InterFLAT panel technology, all L/M terminals are easy to deploy and integrate and can be outfitted with various antenna sizes in accordance with

bandwidth requirements of ground, air and marine applications. Its unique all-in-one design including BUC and modem is optimized for harsh environments specs and its ultra-low power consuming platform is compatible with Ka and Ku-band applications.

MicroSat L/M has options for both the Ka and Ku-bands, providing autonomous operation for transmitting and receiving bandwidth data rates at more than 10Mbps. This midsize terminal offers unprecedented bandwidth that can be hand carried in any environment. Meanwhile, MilliSAT L/M Ka is a medium lightweight portable on-the-move Ka-band satellite terminal solution. MilliSat enables fully autonomous transmission and reception of high bandwidth data rates of more than 20Mbps.

In August, GetSAT and Avanti Communications Group successfully demonstrated the outstanding potential of SOTM capabilities. Utilizing GetSAT's MicroSat terminal installed on a vehicle, GetSAT's Microhub modem installed in Avanti's Gateway Earth Station in Cyprus, and Avanti's HYLAS 2 Ka-band satellite, data traffic rates reached up to 8.5Mbps from the moving vehicle, thus showcasing Avanti's network ability to stream live HD-quality video or surveillance imagery and data traffic for military and government users.

The strategic partnership between Avanti and GetSAT offers significant capability enhancements to support military and government organisations in the provision of very small, flexible, agile and portable satellite communications. The collaboration will enable military and government users to maximise the benefits of high throughput satellite (HTS) broadband and take full advantage of high capacity data traffic, including full motion video and other C4ISR applications, even when on the move. Having successfully demonstrated the exceptional throughputs achievable, both companies will now seek to further develop the capability. The US Army has recently chosen GetSAT's MicroSat terminal as a critical enabler for mobile satellite connectivity.

"The partnership between Avanti's High Throughput Ka-band technology and GetSAT's ground-breaking Satellite on the Move technology provides a capability that has enormous potential for military and Government users. We are proud to be working with GetSAT and look forward to collaboratively supporting our Government and Military customers," commented Graham Peters, Managing Director of Avanti Government.

"Avanti's Ka-band satellite broadband has allowed us to fully demonstrate the capability of GetSAT's technology," added Kfir Benjamin, Chief Executive Officer of GetSAT. "We are extremely



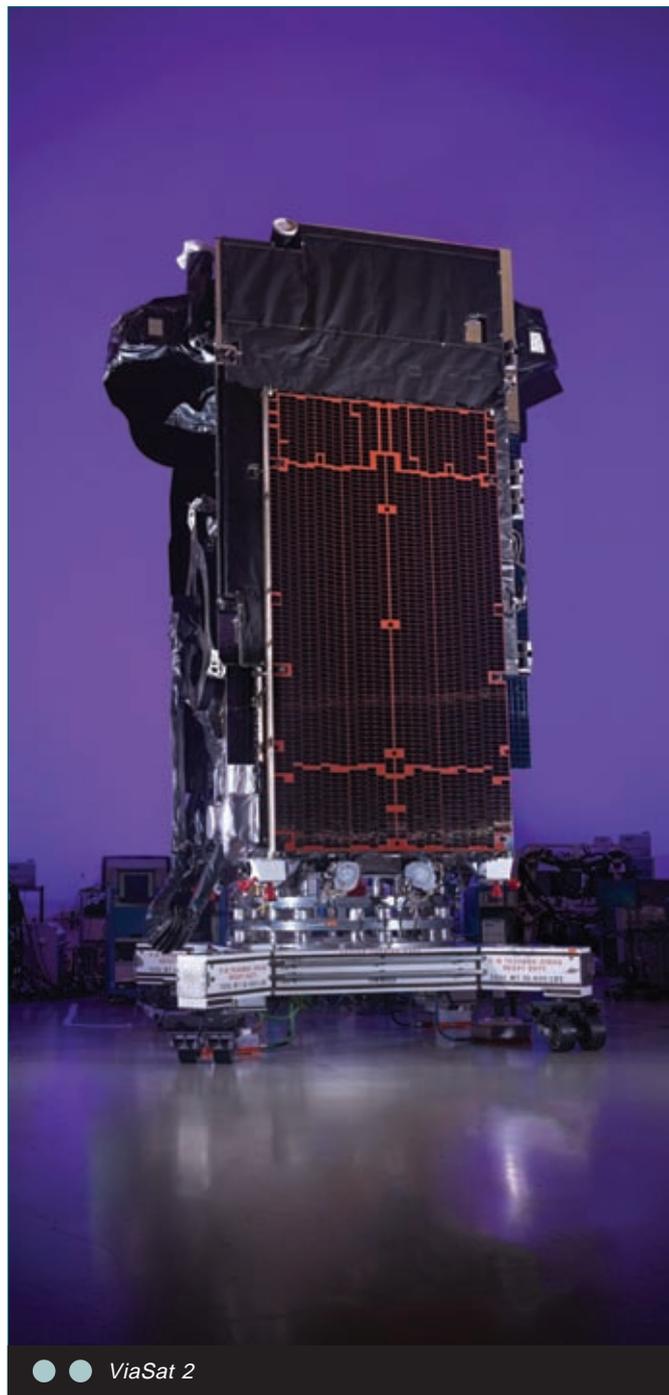
● ● US Government selected GetSAT's MicroSAT

proud of the equipment we have created, and it is therefore extremely important to be able to find a carrier that allows us to fully maximise its potential. The combination of GetSAT and Avanti will add real depth and much higher capacities to our existing offerings and allow us to support the needs of our users for high data C4ISR traffic in remote locations and while on the move.”

### Comtech Telecommunications achieves large COTM orders from US Government

Comtech Telecommunications Corporation is famous the world over for its top-of-the-range satcom equipment, with which it serves the commercial, enterprise, government and military sectors. Thanks to its unique solutions, Comtech Telecommunications achieves an extraordinary amount of work with the US Government, for COTM, as well as its 9-1-1 platform and Blue Force Tracking programme.

In March, Comtech Telecommunications' Command & Control Technologies group received a US\$123.6 million, three-year contract award to provide ongoing sustainment services



● ● ViaSat 2



● ● GetSAT's MilliSAT L/M terminal

for the AN/TSC-198A SNAP (Secret Internet Protocol Router (SIPR) and Non-classified Internet Protocol Router (NIPR) Access Point), Very Small Aperture Terminals (VSATs). SNAP terminals provide quick and mobile satellite communications capability to personnel in the field, and Comtech Telecommunications will be the sole provider of these sustainment services. The contract was initially funded at US\$3.1 million with additional funding expected to occur across the performance period; this came later in July, when an order in excess of US\$12.5 million, on top of the US\$123.6 million contract, was placed, bringing up the funding to date to US\$29.5 million.

“We are pleased that we have won this competitive solicitation to provide sustainment services for the SNAP satellite Earth station terminals. We are pleased that the US Army has selected us to continue to perform this important work,” said Fred Kornberg, President and Chief Executive Officer of Comtech Telecommunications Corp. “We believe the award of this contract further validates our strategy of putting more emphasis on important contracts and working closely with the US Army.”

In the April, Comtech Telecommunications' Comtech Xicom Technology, Inc., subsidiary received a follow-on contract for more than US\$4.2 million from a US military integrator for high-power satellite communication travelling wave tube amplifiers (TWTAs). This is the third instalment of a multi-year program for these power amplifiers used in tactical transportable SATCOM terminals. “We are pleased to receive another follow-on order for this highly advanced multi-band SATCOM system. Our outdoor TWTAs are proven to be robust and reliable,” said Kornberg. “We have ramped up our manufacturing capacity to meet the customer's aggressive schedule and anticipate shipping the entire order this fiscal year.”

July, meanwhile, saw more work for the Command & Control group, when new orders totalling US\$10.6 million came in for the US Army PM Tactical Network, to provide Manpack Satellite Terminals and networking equipment to the Defense Logistics Agency SATCOM Program Office and Headquarters United States Marine Corps. “We are pleased that we have the opportunity to provide this mission essential equipment to our government customers,” said Kornberg. “These orders through the Global Tactical Advanced Communication Systems (GTACS) contract reinforce our partnership in supporting our warfighters.” **GMC**