Ayala Pinhasi, Head of Marketing and Customer Care, Get SAT

GMC Q&A

High data-rate communications

Get SAT is an Israeli satcom developer leading the industry by providing micronized antenna and terminal solutions for high-data-rate communications for land, air, and maritime applications. Laurence Russell from Global Military Communications sat down with Ayala Pinhasi, Head of Marketing and Customer Care, to talk about Get SAT's achievements in 2019, and the company's recent breakthroughs in micronized technology.

Question: What have been your Get SAT's highlights of 2019?

Ayala Pinhasi: Firstly, we've launched our new product, the Nano SAT-H. It's a new satcom terminal that is lightweight and portable, capable of delivering up to 4Mbs. We designed it to be placed on a manpack but that's by no means its only application; it's also appropriate for installation in UAVs. The Nano SAT-H is a very small terminal. It weighs 3.4kg, which includes the app converter, the modem, the gimble, the antenna, HDL, NBD, the entire link. I'm not aware of anything so lightweight in this market, and the fact that it still delivers 4Mbs means this is not simply a skeletal, stripped down system. It delivers just what the market needs, it's just lighter than anything else.

We've also launched an L-band antenna. It's a full phased array, electronically steered in both axes, azimuth and elevation. It is completely electronic in the L-band and can go up to 600Kbs. For L-band that's a lot, which is a real innovation.

We are very close to completing our Active Blade antenna, which is an electronically steered antenna in the elevation axis. It's mechanically steered in the azimuth axis, with a very low profile. It is a high performance antenna system in Ka-band.

We are enjoying a great partnership with Inmarsat. We provide the smallest terminals on the Inmarsat government network, that's our MilliSAT-H and our MilliSAT-Wide. These are our largest antennas whose complete system weight is 10kg. The ruggedized version is 14.5kg, which makes it a very portable model. They're also approved on the GX network.

Another development we're proud of was being approved on the O3b constellation. Medium Earth Orbit (MEO) satellites have a great demand for capacity at the moment, which we're happy to answer. An interesting point about

ManPack-desert-Get SAT

it is that every other satellite terminal on the O3b network moves so fast it requires two linked terminals, but our systems only need one. Our switching takes less than a second, so the delay in the link is imperceptible with current technology. Once the transition is made, the antenna simply moves. There's no handover between two systems, so the latency is far lower compared to competitors. The system is ultimately cheaper too, since you only need to install one terminal. That, alongside using the smallest technology on O3b, really makes us stand out.

We also have a strong relationship with Ovzon, who plan to use our satellites with the Ku-band systems they're developing.

Question: You've recently announced a partnership with Global Radiodata Communications which you've said will 'usher in a new era of COTM.' What innovations can we look forward to?

Ayala Pinhasi: With this partnership we hope to sell our ruggedized terminals which are fully MIL-STD 810 461 compatible and highly portable. The heaviest one we produce weighs 14.5kg, which is far easier to transport, both for the supplier and the soldier, than previous or present models. It's appropriate for Razors and other light vehicles, as well as unmanned systems, the kind of machine where you really need to watch the weight of the system, allowing strong communication in the highly remote environments those assets reach.

Question: With the 'always online' nature of the information era, how important are lightweight, mobile communications to modern defence markets?

Ayala Pinhasi: Of course, most missions soldiers are sent on aren't in developed urban centres. Armed forces often find themselves in the middle of nowhere, far from reliable, secure networks.

Military connectivity is about tactical communication foremost, but there's also a very real demand for keeping the soldier connected in a personal regard. A soldier can be deployed for an exceedingly long time, and in the modern world they've grown up in, they're likely very used to being online.

They have their objectives, but they're also human beings. They deserve the ability to log into Facebook now and again. We believe that's not a particularly complex service to deliver.

Our lightweight applications are small, but they're also reliable. You don't have the performance trade-offs militaries may have been used to in the past. Our terminals integrate the modem, the upconverter, everything you need. Installation is just a few minutes and you're online, allowing a soldier to stay connected wherever they are.

Question: Your mobile satcom terminals aren't just suitable for defence, they also offer a lot to government groups and emergency response services. With the threat posed by environmental disasters across the world, do you anticipate remote connectivity seeing increased demand across civil sectors?

Ayala Pinhasi: Yes. Usually in times of serious crisis you can't rely on existing networks or any infrastructure for that matter. Whether you're responding as emergency services, military or otherwise, you have to have some way to connect to your command centre. Our communication terminals can be used from many platforms and are lightweight enough to be moved across challenging terrain. Whether it's an ambulance reporting injuries from a scene, or a drone surveying a disaster area for survivors and gauging the extent of a catastrophe, our terminal is very suitable for connecting them.

Question: You've overcome a fair few technological challenges when it comes to connecting UAV and helicopter systems. Could you illustrate a few of them for us?

Ayala Pinhasi: The issue of equipping aviation vehicles and UAVs with lightweight communications is something Get SAT has invested a lot of time and effort into solving, and we're happy to say we've accomplished both quite effectively.

UAVs are very sensitive to weight. The payload is highly limited. Every milligram is carefully calculated because it's highly relative to the effective flight of the unit.

Some UAV models are such that they can't accommodate any extra communications technology from existing providers. Even when UAVs can accommodate heavy satcom equipment, it's simply fuel and power inefficient to be carrying unnecessary weight. Our lightweight terminals however are very weight efficient making them extremely well suited for connecting drones.

Regarding helicopter solutions, we are now able to support under-rotor installations with no disconnection whatsoever. To achieve that we employ a specific modem and algorithm incorporated with our antenna control unit. The connection isn't broken, even while the rotors are spinning at high speeds.

Addressing what were once considered technical limitations industry-wide has put us in a very advantageous position on the market, which we're keen to capitalise upon as we forge forward.

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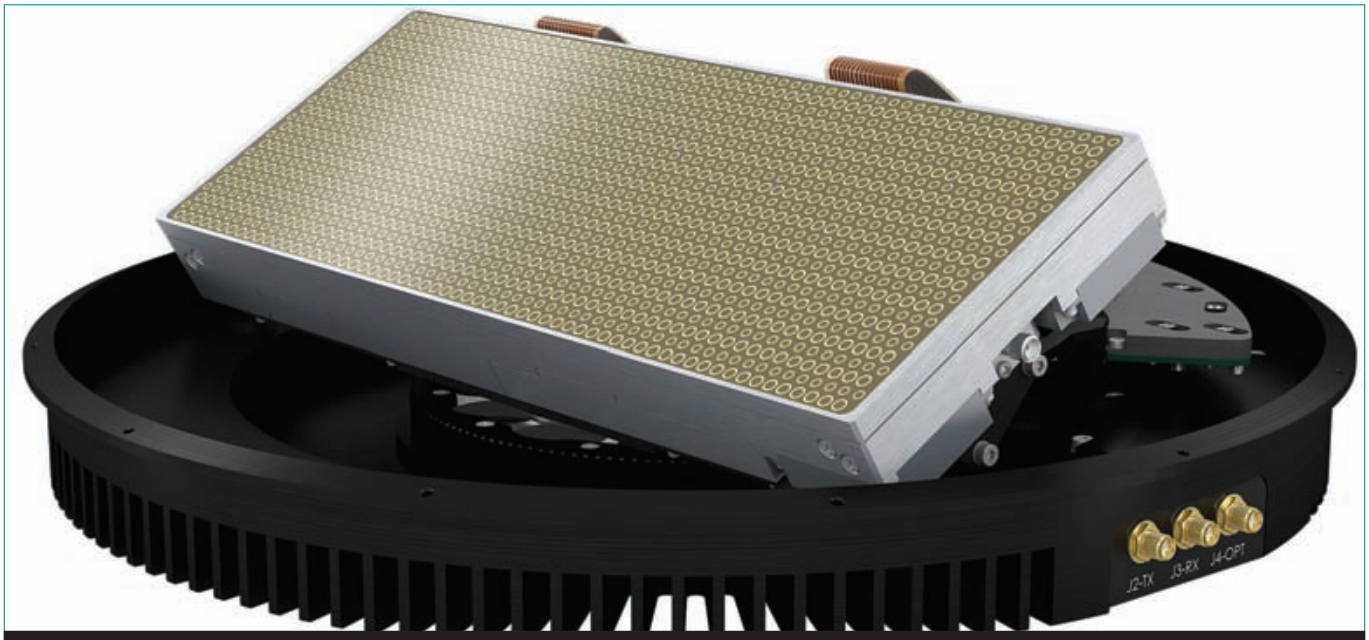

Active blade top with antenna