Worldwide Satellite Magazine

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Year in Review – December 2020

There is no denying that the COVID-19 pandemic dramatically affected 2020, and its economic impact was felt both globally and locally. However, like others, Gilat has learned to conduct business with the pandemic and has seen some very significant accomplishments in the second half of the year. Often project execution was particularly challenging due to the pandemic, nevertheless Gilat's local teams and partners excelled in timely deployment in difficult rural terrains.

Particularly commendable were Gilat's local teams and partners in Latin America supporting nationwide enterprise applications, delivering broadband connectivity to the most remote sites in Peru and Argentina. This article will focus primarily on Gilat's 2020 remarkable success in the Cellular Backhaul over satellite segment and touch on progress in the ground segment for *Non-Geostationary Orbit* (NGSO) constellations, and *In-Flight Connectivity* (IFC), as well as summarize notable technical achievements reached over the past year.

Market Leadership in Cellular Backhaul over Satellite

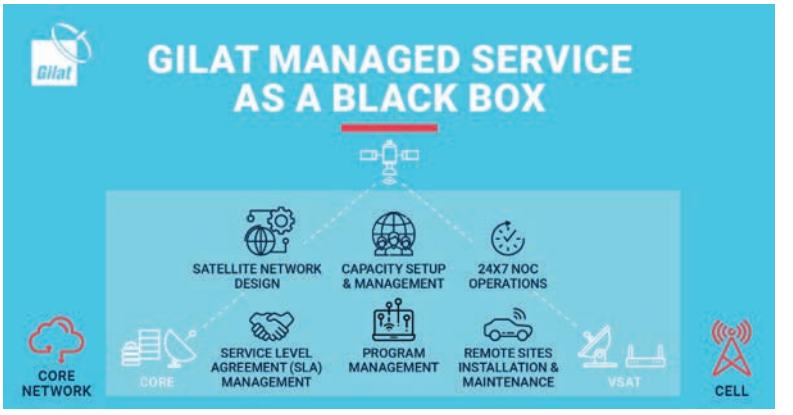
Gilat continues to lead the industry in cellular backhaul over satellite reaching 44 percent market-share in modem shipments according to a report by industry analyst ***NSR***, 2020. In addition, Gilat continued to excel achieving above 80 percent market-share in satellite backhaul for 4G/LTE installations worldwide, with this superiority even furthered by impressive 5G technical achievements.

Gilat's strategy of providing the cellular backhaul over satellite solution as a managed- service has proven successful and is beneficial to MNOs in order to expedite connectivity and get the most out of Gilat's VSAT systems. Gilat offers complete, integrated solutions that includes satellite connectivity, fully managed services, remote network operation, call center support and hub and field operations.

An end-to-end managed-service solution allows the MNOs to focus on their core competency and leave the satellite transport to the satellite experts. The MNO benefits dramatically from depending on one vendor for all its satellite backhauling needs, including the satellite capacity and SLAs. There is a substantial cost and time advantage when a single team handles both the Radio and VSAT needs. This enables a single install visit per site, single maintenance visit, and single accountability.

The MNO's involvement is only in specifying the requirements, the service level agreement and key performance indicators, as well as the required site locations and the schedule.

Gilat connecting remote sites in North America.



Gilat's satellite know-how and rural operational expertise positions Gilat as an excellent choice for turn-key projects as evidenced with significant 2020 awards: Gilat won several large managed-service deals, which included new MNOs as well as substantial contract renewals, extensions, and expansions.

In North America, Gilat had two major achievements this quarter. Gilat was awarded a large multi-year managed-service contract-renewal and expansion from a Tier-1 MNO in the United States. With this, Gilat became the MNO's sole vendor to provide end-to-end services for LTE backhauling and disaster-recovery while replacing existing satellite technologies. This significant contract was awarded to Gilat due to its proven managed service expertise and unmatched LTE over satellite technology.

Gilat has also demonstrated unparalleled capabilities in the following three dimensions: technology, delivery and operation. Gilat's superior technology ensures the required user experience and enables a smooth transition to 5G, while the delivery and day-to-day operational needs were met consistently and professionally. In addition, Gilat was awarded a three-year managed service contract by ***Southern Linc***, a fully owned subsidiary of ***Southern Company***, for coverage to remote areas as well as emergency response. The agreement will enable Southern Linc to use satellite transmission for backhaul services when established networks are unavailable.

Gilat satellite installations will be used to extend cellular coverage for voice and high-speed data services in remote and terrestrially challenged areas and in areas affected by severe weather. Gilat will also provide backup for terrestrial aggregation sites and an underlining level of monitoring and support for Southern Linc's large-scale LTE network.

To win this project, Gilat demonstrated an unprecedented technical achievement and was the only vendor to answer Southern Linc's stringent reliability requirements, including MPLS support. Gilat services will provide transparent and simplified accelerated backhauling over satellite as well as enterprise and 4G cellular traffic over MPLS. These services coupled with Gilat's patented GTP acceleration technology are delivered with Gilat's ***SkyEdge II-c*** platform.

In addition, Gilat continued to expand its global presence with a managed service deal with a leading MNO in Mexico. Multiple equipment deals were closed including with AMN (***Africa Mobile Networks***), which extended Gilat's contract for Africa's largest cellular backhaul network over satellite. AMN's network enabled by Gilat's technology serves multiple Tier-1 Telcos in over ten countries throughout Africa. Another important contract was secured with ***Kcell***, Kazakhstan's largest Mobile Network Operator. Gilat will provide connectivity starting with hundreds of rural villages, in partnership with Kazakhstan's recognized service provider, TelService LTD, to satisfy the "*Digital Kazakhstan*" government program.

NGSO and VHTS – Becoming a Reality

At the end of 2019, Gilat marked an outstanding achievement reaching a major landmark in fulfillment of its strategy to be a significant ground player in the VHTS and NGSO constellation market. ***SES*** selected Gilat's multi-orbit GEO/NGSO platform for its revolutionary ***mPOWER*** Medium Earth Orbit (MEO) constellation. Gilat was selected for its technological innovation and proven track record worldwide. The innovative ground network design significantly reduces the cost per bit, provides best-in-class spectral efficiency, and demonstrates a step-change in modem performance, all vital for revolutionary multi-terabit high-performance constellations such as mPOWER.

More than 10 countries enjoy connectivity over the AMN network.

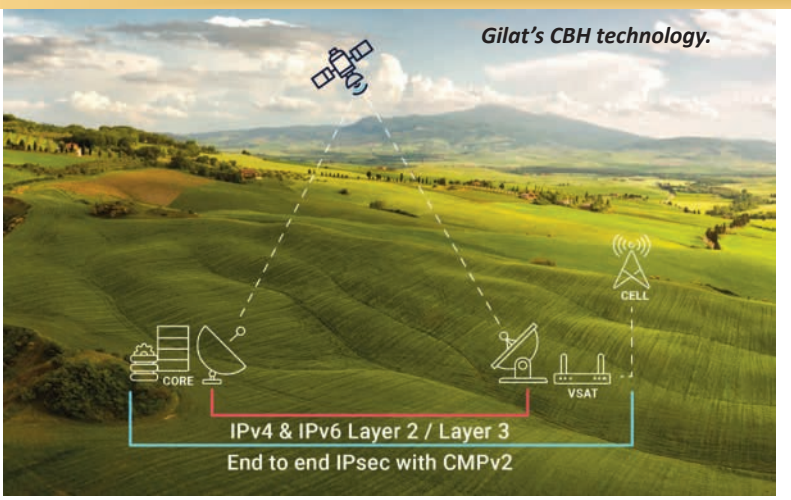
Throughout 2020, Gilat has been working closely with ***SES*** to develop the platform for ***O3b mPOWER*** with the common goal of bringing to market unparalleled customer experience in all target verticals. In the third quarter this year, the O3b mPower partnership with SES was expanded with a follow-on order for high-speed modems. Gilat's modems will deliver multi-gigabit throughput, targeting high-end services over the constellation.

IFC Hit by Pandemic — Emerging Stronger

Even though the COVID-19 pandemic has impacted the global aviation market, Gilat has not changed its overall mobility strategy. Gilat expects that upon industry recovery, IFC will be even more important as passengers who, throughout the pandemic, came to rely heavily on an always-connected experience will continue to demand reliable high-speed Internet connections.

Furthermore, Gilat believes that the introduction of widespread, free WIFI will significantly increase take-up rates and provide a strong tailwind to the industry, and Gilat. Gilat is working closely with its customers and partners to enable them to meet the expected increase in bandwidth requirements, and passenger connectivity demands.

In China, Gilat announced this past summer an important milestone as a driver of the opening-up of the Chinese Ka-



Gilat's CBH technology.

band for *In-flight Entertainment and Connectivity* (IFEC) market. The announcement was made with Gilat's partners ***China Satcom*** and ***FTS***, a leading Chinese system integrator who received the STC/VSTC for IFEC earlier this year. Gilat's aero modem, ***Taurus***, is powering IFEC service to China's ***Qingdao Airlines***. The Qingdao Airlines' A320 aircraft has started to provide SATCOM based IFEC commercial service, after a very successful flight from Qingdao to Chengdu on July 7, 2020, with its IFEC system formally open to the passengers for the first time. As of this writing, there are more than 3,500 commercial aircraft operating in China and this aircraft is the first one retrofitted with a Ka-band IFEC system.

Outstanding Technological Achievements

On the technology front, Gilat marked in 2020 three major industry milestones: First, Gilat released its flagship ***Capricorn PLUS*** VSAT, achieving the remarkable performance of half a Gigabit of concurrent speeds enabling service with maximum efficiency for data-intensive applications such as 5G backhauling, maritime and enterprise. In addition, built-in support for *Multi-Access Edge Computing* (MEC) infrastructure enables next-generation edge services, such as video caching and IoT gateways.

The second technological achievement, of carrying 5G traffic with outstanding performance, was demonstrated by Gilat during the third quarter this year. Gilat believes that 400/100 Mbps' recorded results to/from the 5G handset are unique in the industry. The live demonstrations took place with two MNOs over ***Thaicom's IPSTAR*** GEO satellite. Using a 5G handset, a large number of applications including: Browsing, Speedtest, Youtube 4K, VoLTE, ViLTE, Virtual Reality, Augmented Reality and even communication with a drone providing a live video stream, were tested with excellent results.

The tests were done with several 5G architecture options, including *Standalone* (SA) and *Non-Standalone* (NSA), using Gilat's Capricorn PLUS with an adaptation of Gilat's patented GTP acceleration, at times showing results better than the terrestrial connection. With this successful test, Gilat has declared Gilat's cellular backhaul solution operational and ready for implementation in the 5G architecture.

The third technological milestone was achieved with Gilat's first-to-flight ***Electronically Steered Antenna*** (ESA) terminal providing IFC in test flights over GEO and NGSO constellations. The demonstration showed high performance and instantaneous Ka-band switchovers between and operating on ***Telesat***'s ***Phase 1 LEO*** satellite and its ***Anik-F3*** GEO satellite, onboard ***Honeywell***'s *Boeing 757* commercial test aircraft, across several flight tests. These three achievements are examples that further validate Gilat's proven technological superiority and are further testimony to Gilat's industry leadership and innovation.

Concluding 2020 — Light at the End of the Tunnel

The COVID-19 pandemic has had severe consequences on so many aspects of people's lives and continues to take a toll on much more than their physical health. Communication therefore, now is more important than ever as social distancing is required, and travel is prohibitive. Especially these days, Gilat is proud to lead the industry in delivering broadband connectivity over satellite to ensure that critical communication is available to all.

Gilat is cautiously optimistic that 2021 will bring a global economic recovery and expect that Gilat will continue to lead in the IFC, CBH, Broadband and VHTS/NGSO market segments, powered by its outstanding technology.

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