

Battle royal

2019 was an exciting year in terms of new in-flight connectivity options for the business aviation market. Craig Foster, Co-founder of Valour Consultancy, ponders whether the increased number of players each now offering a plethora of solutions can really be sustained longer term.

Historically, provision of wholesale cabin connectivity services for VIP and business aircraft has been dominated by four companies: Gogo, Viasat, Inmarsat and Iridium. Gogo now counts some 5,500 business aircraft on its air-to-ground (ATG) network, while Viasat lays claim to more than 1,100 cumulative shipments of its Ku-band system over the past decade. On the L-band side, Inmarsat and Iridium account for the bulk of the market and have done so for some time. The former has built an enviable base of almost 4,000 aircraft that rely on its hugely-successful SwiftBroadband (SBB) service and over 600 using the Jet ConneX (JX) Ka-band solution. And with 10,000 aircraft installed with its services today, the latter estimates there's a 90% chance a business jet will be using its voice services to power in-flight phone operations.

All this could be about to change, however. Over the last couple of years, a clutch of new entrants has emerged, presumably attracted by the higher margins on offer compared with the commercial aviation market. Global Eagle and Panasonic Avionics, for example, announced in 2015, their intent to target the

bizliner and bizjet markets, respectively. While Global Eagle still harbours an ambition to pursue opportunities in the VVIP space through its ultra-high-end PRIVA brand, Panasonic has stepped back and is concentrating solely on its role in IDAIR, a joint-venture with Lufthansa Technik.

Panasonic's place in partnership with Astronics and Satcom Direct has since been taken by Intelsat and the trio launched FlexExec in October 2018. Installs have been temporarily suspended after the loss of the Intelsat-29e satellite, although expectations are that the service will re-launch in the early part of 2020. Until then, SES and Collins Aerospace will doubtless be looking to make hay with their new, rival Ku-band offering, LuxStream. Further down the line, OneWeb has vowed to revolutionise the connectivity market with a low-latency solution available for fitment on the lightest of bizjets that it plans to have available in the 2021/2022 timeframe.

Away from satellite-based connectivity, SmartSky Networks is in the final stages of completing its ATG network with entry-into-

service and full CONUS (contiguous USA) coverage slated for 2020. Hardware is already installed on several business aircraft, including Embraer ERJs for launch customer, JSX. Rival, Gogo, as is the case with the other aforementioned players currently dominant, is not content to rest on its laurels and plans to launch an upgraded 5G ATG network the following year. Speculation persists that Gogo is also working with Gilat for its Ku-band tail-mount antenna. If true, such a solution would pit the company against Intelsat, SES and Viasat and allow it to address those business jets that travel internationally and that aren't candidates for its bulkier fuselage mount 2Ku antenna.

Viasat hasn't given up on its legacy Ku-band network and this year revealed new "Ku Advanced" packages with increased speeds of



up to 10 Mbps and an easy migration path to its newer Ka-band system through use of existing aircraft wiring. Ka-band, of course, being a focus of Inmarsat, too. Despite its considerable early lead in this arena, the company continues to add capacity to the Global Xpress (GX) constellation. Inmarsat also has its eyes on supporting shorter intra-European flights having previously announced that the European Aviation Network (EAN) would be available for business aviation in “early 2019”, although timelines would appear to have slipped.

Last but by no means least is Iridium, which is seeking to tap into the increasing demand for backup communications systems with the recently launched Certus solution. Due to its compact nature, Certus is also expected to find a place as a primary connectivity system on smaller aircraft for “lite connectivity” applications like in-flight messaging. As well as converting its existing customer base to Certus, Iridium will set its sights on capturing market share from L-band counterpart, Inmarsat.

But what’s so appealing about the bizav market that all these players with their many offerings are so intent on vying for a slice of the pie? As mentioned, margins in business aviation relative to air transport are much higher and while there is, surprisingly, a degree of price sensitivity around up-front equipment costs and on-going airtime fees, there is a willingness to pay for a good quality and reliable connectivity experience. Indeed, during the course of the research for our soon-to-be-published study on the adoption of connectivity in this market, a common theme among interviewees was that non-functioning cabin connectivity is often cause to keep an aircraft on the ground. And it’s this level of heightened expectation that could make or break the prospects of those less familiar with having to provide a white glove service.

Simply put, business aviation is a very high touch market and connectivity providers need to cater to the specific demands of those operating no more than a handful of aircraft. A connectivity service needs to tie into the overall theme of making each aircraft or fleet of aircraft unique – something demonstrated by the fact interiors are often completely custom-crafted to match the exacting tastes of owners. Commercial aviation, on the other



hand, is a higher volume market where low margin off-the-shelf products (premium cabin seats aside) are the order of the day. And as far as connectivity business models are concerned, airlines and their service providers have struggled to make the paid-for approach work. For this reason, the likes of Intelsat and SES have been wise to partner with well-respected industry stalwarts like Satcom Direct and Collins Aerospace.

THE LAST MAN STANDING?

Though it’s impossible to say who will thrive and who might fall by the wayside in the battle for supremacy, it’s fair to say that we can most probably expect some level of consolidation in the market in the mid- to longer-term. We must remember that there is only a limited number of business aircraft that are viable candidates for many of the services being proposed. For fuselage mount solutions, there are around 500 bizliners that are large enough to accommodate large, bulky radomes. There are currently circa 6,500 large cabin jets and these – plus an extra 2,500 that are set to be added to the fleet over the next 10 years – will be the prime target given that most can take a bullet-like tail radome but are not yet fitted with high-bandwidth Ku- or Ka-band connectivity. Beyond this, most of the remaining 16,000 super-midsize, midsize, light and very light business jets and a similar number of turboprops are only really suited to much less invasive ATG and L-band terminals.

A game changer will be the maturity of flat panel antenna technology, which has the potential to open up the total addressable market for high capacity satellite-based connectivity to much smaller airframes. A whole host of companies are currently working on solutions that aim to do just this but industry consensus is that we’re still several years away from market-ready products that overcome current challenges around power consumption, heat dissipation and cost. That being said, there will always be a significant chunk of smaller aircraft that never leave CONUS or Europe and are arguably most suited to an ATG solution. In this regard, the bases look well covered by Gogo, SmartSky and Inmarsat.

With all this in mind, it seems like a stretch to imagine that the business aviation market can support so many different solutions. Those with ambitions to stay relevant in the long term need to ensure that they are best-in-class and not pursue an unwinnable race to the bottom on price, especially if it comes at the expense of a good quality experience. Anything less simply won’t be tolerated.

The competitive environment, market trends and the likely future adoption of connectivity in this space is explored in great depth in Valour Consultancy’s forthcoming report entitled “The Market for IFEC and CMS Systems on VVIP and Business Aircraft” due to publish in Q1 2020. ■