Onwards and upwards for in-flight connectivity

Just ten years ago, the idea of always-on connectivity would have sounded like science fiction to most. However, today we’ve become so used to just picking up a smart phone and being instantly connected that, when that isn’t an option, we are dissatisfied or annoyed. Terrestrially, mobile connectivity is pretty impressive – you have to go to some quite remote regions to be without coverage. In contrast, in-flight connectivity has lagged behind, a fact that has left many consumers displeased. However, as technology has advanced and satellite capacity has fallen in price, airlines have been making great strides towards provisioning full on-board connectivity in recent years. Here, we take a look at the most recent updates and developments in the market.

Inmarsat and market research company Gfk published their latest ‘In-Flight Connectivity Survey’ in May 2016, which was based on 9,000 customers who travelled through Europe, Asia, Australasia, Central and South America in August 2015 to March 2016.

According to the results, 91 percent of respondents’ desire in-flight connectivity, 83 percent select an airline based on connectivity availability, and 75 percent rated reliability ahead of speed, at 19 percent. Indeed, demand for always-on connectivity is such that 54 percent of fliers would prefer it to an in-flight meal. Of particular note is that 78 percent of respondents expect in-flight entertainment systems to be replaced by in-flight connectivity on personal devices in 5-10 years. This certainly rings true with anecdotal evidence that many millennials do not use in-flight entertainment systems, preferring instead to use personal devices to consume pre-loaded content, whether it be films, e-books, music or games.

Interestingly, it’s not only long-haul passengers that are eager for in-flight connectivity. The respondents were pretty evenly willing to pay for connectivity on short-haul (64 percent), medium-haul (68 percent), and long-haul flight (69 percent). Inmarsat also observed that the bandwidth use varied widely between the different respondents; European
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travellers wish to stay in touch with friends and colleagues, Asia-Pacific passengers want access to travel websites and apps, while Latin American consumers most use in-flight connectivity to stream video content.

“Demand for broadband in the sky has reached such unprecedented levels around the world that airlines, as well as those in the business aviation and aircraft lessor markets, need to meet passenger expectations or risk losing out to their competitors,” said Leo Mondale, President of Inmarsat Aviation. “Our survey clearly demonstrates that passengers demand a highly reliable service. Quality is the essential ingredient that determines whether or not passengers choose to go online during flights. Airlines are therefore under pressure to select the right partner to support them in delivering a reliable and cost effective service.”

The challenges in providing in-flight connectivity services

Offering in-flight connectivity services is more complex than the casual observer might imagine; in addition to the complexities of navigating different satellite coverage areas and switching beams, there are a wealth of rules and regulations that must be complied with.

One of the aspects to be considered is the antenna. Not only does the terminal need to be extremely robust to survive extreme temperatures, pressures, and operate perfectly at all altitudes, it must also be approved for use by the appropriate regulatory authorities. Satellite Evolution recently spoke with ITC Global’s Chief Executive Officer Joe Spytek, who commented that while there’s a lot of noise in the market about existing companies trying to break into the mobility scene, “It’s one thing to put out a press release, and quite another to get aircraft-certified antennas installed on planes.”

There’s also the matter of operational clearance. During flight, planes pass over many countries, all of which have their own rules and regulations regarding connectivity. “One of the things that’s often overlooked is the fact that you need regulatory approval to operate over some of the countries that planes fly over,” said David Bruner, Vice President of Panasonic Avionics. “We are the only company today that is approved for operations in every country in the world… We’ve had a few airlines select other service providers, only to find out that they lacked the regulatory approval to operate in those countries.”

Despite the challenges noted above, there are a significant number of in-flight connectivity providers, and many more have announced their intentions to break into the sector, as rising demand makes it a very attractive new market.

Indeed, while our latest feature on in-flight connectivity was only a few months ago (see the March/April issue of Satellite Evolution Asia), the market has seen a massive amount of action during that time, with new deals, technology developments, and partnerships announced from Panasonic...
Panasonic Avionics: Adding new capacity and making new deals

Panasonic Avionics in inarguably one of the top, if not the top, in-flight connectivity provider in the world today. Demand for its services is growing rapidly enough that February 2016 alone saw it make two new significant capacity deals. The first was for almost all of the high throughput satellite (HTS) Ku-band capacity over the Mediterranean, Europe and Middle East on Telesat’s new Telstar 12 VANTAGE. The second was its highest bandwidth commitment to date for Ku-band spot beam and wide beam capacity on HTS SES-14 and SES-15, with coverage over the USA, Canada, Mexico, and the Caribbean. The capacity from both deals will meet growing demand in the in-flight connectivity, maritime, and oil and gas markets.

In April 2016, Panasonic Avionics made two new major deals for in-flight connectivity systems. The first was a contract to install its eXO system on Saudi Arabian Airlines’ Airbus A320 fleet. The eXO system supports a wide variety of AVOD configurations like overhead video, wireless in-flight entertainment, full AVOD and hybrid, cabin class-specific systems. Saudi Arabia Airlines’ business class section will see individual 13.3” Elite full HD monitors and video touch screen handsets with a choice of on-demand content available through Panasonic Avionics’ in-flight entertainment system installed. Meanwhile, retractable HD overhead screens will be installed throughout the cabin in economy class. The first aircraft is due to be delivered in November 2016.

The second deal will see Panasonic Avionics deliver its eX3 system, a broadband-connected, personalised, immersive entertainment experience, across Singapore Airlines’ entire Boeing 787-10 fleet and Airbus A350 ultra-long-haul fleet. When used in conjunction with Panasonic Avionics’ Global Communication Services, the eX3 system offers the latest in on-board technology communication solutions and more than 1TB of immersive entertainment options, including the world’s most popular movies and TV shows. The solution will also include the capability to provide broadband Internet services to passengers’ personal devices and the seat-back system.

Global Eagle Entertainment (GEE): Developing capacity, clients and products

Global Eagle Entertainment (GEE), another major player in the in-flight connectivity market, is also on the road to growth. Like Panasonic Avionics, it signed two new satellite capacity deals in March and April 2016 to meet rising demand. March 2016 saw a deal for satellite capacity from Hughes’ Ka-band HTS EchoStar XIX, which is due for launch in late 2016, for coverage over North America. In conjunction with Hughes’ JUPITER™ System aeronautical modem, GEE will be able to provide more than 200Mbps of throughput per aircraft. Meanwhile, in April 2016, GEE made a deal with SES for more wide beam Ku-band capacity from NSS-12 and AMC-1 to cover India, Central Asia, the Middle East and North America.

“GEE is in the midst of a strategic expansion of our global in-flight connectivity network to meet the growing and evolving demands of airlines and their passengers for a new wave of high-speed Wi-Fi-based services,” said Dave Davis, CEO at GEE. “Together with SES, GEE continues to proactively add significant levels of bandwidth over established in-flight connectivity markets, as well as developing regions such as Asia and the Middle East, where passenger demand is accelerating the deployment of connected aircraft over new routes.”

In February 2016, GEE made a deal to provide gate-to-gate WiFi connectivity for Icelandair’s full fleet of Boeing 757 and 767 aircraft. It is the first airline in Europe and the North Atlantic to provide this service, and represents the latest expansion since it launched in-flight WiFi with GEE three years ago. “This new service is a part of our strategy to offer our customers quality service, including WiFi on all our routes. It’s important for us to be in the forefront at adapting and providing passengers great entertainment and connectivity, and the solutions provided by GEE make that possible,” said Icelandair’s SVP Sales and Marketing, Helgi Már Björgvinsson.

Meanwhile, in April 2016, flydubai started to deploy its new GEE Airconnect Ku IFE&C system, an in-flight entertainment and communications system to be installed across all of its Boeing 737 aircraft. The system enables high-speed connectivity and broadcast TV to be supplied to passengers’ personal devices, media content to be provided to flydubai’s seatback in-flight entertainment system, and electronic flight bag (EFB) solutions to support airline operations.

Also in April 2016, GEE announced the development of its new Airconnect Ka-band high-speed antenna, produced in partnership with QEST Quantenelektronische Systeme GmbH. Previously, the Airconnect high-speed antenna had Ku-band functionality alone. Target certification for Ka-band capability is expected in early 2017.
THAICOM 8 was launched in May 2016 on a mission to strengthen our video channel platform at 78.5 degrees East and enlarge our footprint over high growth South Asia, Southeast Asia, and Africa markets. Carrying a 24 Ku-band transponder payload, THAICOM 8 will offer a full range of data, media, and telecom services tailored to the communication needs of the entertainment and media industries. Thaicom has been serving the Asia Pacific region with innovative end-to-end satellite services for more than twenty years. Since 1991, we have helped our customers break new ground and serve their audiences better.

For more information, contact sales@thaicom.net.

www.thaicom.net
ViaSat: New deals, and FAA clearance for aeronautical Ka-band antenna

ViaSat is one of the leading companies when it comes to in-flight connectivity solutions. Its high capacity Ka-band in-flight Internet service, which provides gate-to-gate Internet access with speeds of 12-20Mbps to each connected device, is deployed on nearly 500 commercial planes in the USA.

In February 2016, ViaSat signed a memorandum of understanding (MoU) with its first Asia-Pacific airline customer, Qantas Airways. The deal will see ViaSat provide hybrid Ku/Ka-band antennas and in-flight connectivity solutions through ViaSat’s global Ku-band network and nbn’s Sky Muster HTS Ka-band network, for all domestic flights. Trials of the new services are expected to start in late 2016 on Qantas’ Boeing 737, while roll-out to the entire domestic fleet of Airbus A330 and Boeing 737 is planned for 2017. The aircraft will be fitted with in-cabin WiFi hotspots, an Internet modem, and ViaSat’s antenna and radome technology.

Meanwhile, in April 2016, ViaSat received supplemental type certificate (STC) approval from the Federal Aviation Administration (FAA) to install its Ka-band satellite antenna and radome on Airbus A320 aircraft. Coupled with ViaSat’s in-cabin distribution STC, this certification enables airlines to deploy ViaSat’s complete end-to-end in-flight connectivity system.

“Reaching this milestone is significant as it sets a high bar for how to build and install a best in-flight internet service for global coverage,” said Don Buchman, ViaSat’s Vice President and General Manager, Commercial Mobility. “We now have FAA approval for our radome, antenna and in-flight cabin system, which gives airlines and passengers access to the real internet, not cached content, with the most reliable, scalable streaming capabilities.”

The future of in-flight connectivity

There’s no doubt that in-flight connectivity will remain a rapidly-growing market for the years to come as demand from the younger generation and business travellers expands exponentially.

Euroconsult has estimated that in-flight connectivity revenues will increase eight-fold between 2015-2025 to US$5.4bn, following a 21 percent year-on-year increase in the number of connected commercial aircraft in 2015. Geoffroy Stern, Senior Consultant at Euroconsult, expects that the Asia-Pacific region will see the greatest amount of growth in 2015-2025, despite already having 22 connected airlines at the end of 2015, the largest of any world region.

As more HTS capacity comes online in the coming months and years, lower prices per bit are likely to see an expansion of in-flight connectivity services, reducing costs for consumers and airlines, and increasing uptake. While this is good news for those active in the in-flight connectivity business, it’s also going to attract new market entrants, increasing competition in an already-crowded market. Existing players will, however, benefit from the fact that most connected airlines are locked into long-term contracts.

There’s also the advantage that it’s extremely expensive for aircraft to be taken out of service, thus airlines with existing in-flight connectivity systems will be reluctant to change suppliers.