Inflight connectivity is a hot topic right now. Everyone wants it, but very few people are happy with the service they’re receiving. The many companies offering services in this field continue to bring out new solutions as technology advances, but today’s passengers expect the same service in the air as they do in their own homes; seamless, broadband speed Internet. Some want to be able to work, utilising emails and video conferencing, while others want to send photos of their trips to friends and loved ones. Either way, it’s clear that there is significant demand for inflight connectivity solutions, and that demand is not currently being met.

Panasonic Avionics NEXT

**Novel inflight connectivity solutions**

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As someone who flies on a regular basis, I feel that the inflight entertainment (IFE) services present on medium and long-haul flights has really hit the mark. I can watch films, TV series, listen to music, all from the comfort of my own seat, and most importantly, with no additional charges. This is in stark contrast with how I feel about inflight connectivity services, which with the exception of a single Norwegian Air flight, I’m unimpressed with; and I’d be willing to bet that many people feel the same.

The problem with inflight connectivity as it stands today, from a consumer perspective, is that it usually comes with an additional charge. When you look at hotels, some charge extra for services such as in-room Wi-Fi or breakfast, while others include it in the overall price; most consumers, particularly those travelling for recreation rather than business, loathe to pay extra charges. It doesn’t matter that, for the hotel with no extra charges, the costs for Wi-Fi and breakfast are included in the overall charge - they feel like they’re getting a better deal. The same is true for inflight connectivity. Most customers, with the exception of the odd business flier with a company happy to pay the extra charge so their employee can work inflight, want the cost included in the overall ticket so that they don’t feel they’re being ripped off.

Inflight connectivity solutions continue to advance, with more and more airlines installing the service to their fleets. Demand from consumers is certainly high, making heavy investments a good choice for most. Today, the latest developments in inflight connectivity have gone far beyond simple inflight broadband solutions, and are moving towards unique, tailored services, designed to maximise revenues through data analysis, improve passenger satisfaction through custom analytics, and enhance aircraft efficiency via real-time monitoring of performance.
Creating an inflight ‘Internet of Me’

Panasonic Avionics has long been a world-leader in inflight entertainment and connectivity solutions, delivering services for all aspects of aviation. Not limiting itself to ‘simple’ entertainment and broadband solutions, Panasonic continues to upgrade and expand its systems in line with the latest technology and marketing developments.

In October 2016, Panasonic Avionics launched ZeroTouch, an innovative service that gives airlines real-time visibility into performance, improves the efficiency of its maintenance operations, and enables data transfer of passenger-facing content to an aircraft to improve the passenger experience.

ZeroTouch reduces an airline’s need to physically touch the aircraft, allowing all interactions to be managed through a virtual dashboard instead. By providing access to real-time passenger data, software, media and content updates can be data-driven, helping to deliver a relevant and personalised passenger experience. A cynical person might add here that, in addition to improving passenger experience, the data collected might be used to increase sales via targeted marketing.

With ZeroTouch, updates will be sent to an aircraft via three high-speed pipes – Wi-Fi at the gate, aircraft cell modem, and inflight using Panasonic’s global broadband eXConnect service. When combined with dynamic content updates, ZeroTouch can deliver an improvement from an airline’s traditional 30-day media update cycle by enabling live updates to data and files stored on a Panasonic inflight entertainment and communications (IFEC) system. Films, games, advertising, live news, and more will be automatically loaded at any time, over any available communications pipe to an entire fleet.

Strategic planning will also be made easier through the actionable insight solution it provides. Airlines are presented with both a detailed picture of their aircraft and a broader overview of their fleet. This allows more informed decisions to be made in media consumption, system health monitoring, aircraft maintenance, and much more. The service automatically downloads critical operational data during flight, so maintenance teams are notified of upcoming tasks and can prepare solutions prior to landing.

Today, Panasonic is in Phase One of its ZeroTouch service initiative, delivering payloads of up to 700Mb to aircraft over cell modem and its eXConnect service multiple times per day. By the third quarter of 2017, Panasonic will enter a Phase Two trial, which will leverage a new, more robust and more efficient core infrastructure and an enhanced management console. During this time frame, the company will also introduce the Enhanced Cell Modem with advanced Wi-Fi capabilities that will open up a third communications pipe to the aircraft. Full commercial availability including content, media and software loading as well as operational data offloading is expected to immediately follow the trial in the third quarter of 2017.

Not a company to be caught sleeping on the job, in April 2017, Panasonic Avionics announced its NEXT IFEC platform, which was designed to help airlines overcome key challenges by transforming typically rigid entertainment systems into a flexible IFEC platform. Panasonic is introducing a scalable IFEC solution that blends the latest in inflight entertainment technology, connectivity services, and consumer technologies to help airlines reach their business objectives. This approach helps airlines maximize their investment by dramatically extending the lifespan of the platform.

The modular, scalable NEXT platform creates an easy-to-use, tailored passenger environment that helps airlines meet their existing and future business objectives, maximize passenger engagement, enhance passenger and crew convenience, and increase efficiency. Its ability to help airlines maximize investments by keeping IFEC perpetually and contextually relevant is a key market differentiator. NEXT blends the latest advances in consumer technology, including
4K screens, Light ID, Bluetooth, and much more, backed by an intuitive interface that is simple for all passengers to use. The value of the NEXT platform is increased exponentially by Panasonic’s integrated ecosystem of value-added services, tools, applications, and partnerships. This industry-leading ecosystem includes the company’s second generation global connectivity network which, when coupled with its new modem technology, provides up to 250Mbps of connectivity to an aircraft.

The powerful combination of the NEXT platform and Panasonic’s global, integrated ecosystem will, according to Panasonic, create an ‘Internet of Me’ experience for passengers. It will seamlessly integrate with the company’s companion app technology and its ZeroTouch service to add higher levels of passenger personalisation, including previewing content and other amenities on their flights, creation of playlists that will transfer from one aircraft to another, and even content on demand experiences.

The NEXT platform also incorporates Panasonic Integrated Marketing Services (PIMS) – an advanced global marketing platform and the largest inflight marketing solution in the industry. PIMS delivers only highly-targeted, high value marketing services to passengers, which will keep passengers immersed and engaged in destination services, retail therapy and other onboard applications while delivering increased revenue opportunities to airlines and their partners.

"Today isn’t the launch of a new IFEC product; it’s about a new way of doing business,” explained Hideo Nakano, Chief Executive Officer of Panasonic Avionics Corporation. "The NEXT IFEC solution is a business platform that has been built to respond to the trends and challenges that airlines face. It is about innovating with purpose to create a bespoke offering that is aligned with our customers’ business models, increasing their efficiency and enhancing their inflight experience. The value of the NEXT platform is greater than the sum of its parts. Our global connectivity network, weather services, and maintenance organization are all key examples of how our services and products have evolved into an integrated ecosystem that will exponentially increase the value the NEXT platform delivers to airlines and their passengers.

Upgrading existing systems

Inflight entertainment and connectivity solutions have been evolving for many years. The first inflight film was shown in 1921 on Aeromarine Airways; interestingly, when personal TVs were introduced on board JetBlue, the company observed that toilet queuing was vastly reduced.

Boeing was one of the earliest companies in the inflight connectivity market with its planned Connexion by Boeing service. The service was designed to deliver inflight broadband to commercial airlines, however, by 2006, the project was shelved due to technology, weight and cost challenges. Since then, many companies have come on board with their own inflight connectivity solutions, and the most successful of those companies upgrade their solutions in line with technological advances.

In March 2017, Thales, SES and Hughes Network Systems announced a series of strategic agreements to enhance the delivery of FlytLIVE, Thales’ connected inflight experience solution. FlytLIVE provides an advanced, seamless inflight connectivity solution with unmatched performance and redundancy, according to Thales, giving passengers full broadband Internet connectivity, including the ability to stream Internet services for video, games, social media and live television, creating an immersive experience in the air. In addition, the service allows airlines to upload content, download operational data, and provide live TV
channels to their entire fleet through managed end-to-end solutions and network services.

Under the agreements, SES contracts capacity on Hughes EchoStar XVII and EchoStar XIX HTS Ka-band satellites to complement its AMC-15 and AMC-16 network, giving FlyLIVE the only redundant coverage network in North America. SES will also purchase multiple JUPITER System gateways from Hughes to qualify Thales to deploy its FlyLIVE service on Hughes JUPITER Aeronautical platform. This will allow Thales to initiate its next-generation connected inflight experience offering in North America this year. The system will also be forward compatible with SES-17, SES’ Ka-band HTS optimised for aviation connectivity, due for launch in 2020.

With these four satellites and the Hughes JUPITER System aeronautical platform, Thales will be positioned to offer the most comprehensive connectivity and content services for the full range of North American flight routes, including routes between the Northeast US and Canada and the Caribbean, which to date have been underserved. FlyLIVE’s network will deliver industry-leading speed and capacity for support of growing passenger service demands, and will comfortably accommodate forecasted traffic increases through the launch of SES-17.

“Our experience and position as a global leader in satellites, avionics, cybersecurity and connected inflight entertainment means we are able to deliver the most capable solutions our customers expect,” said Dominique Giannoni, CEO, Thales InFlyt Experience. “With these strategic agreements with SES and Hughes, Thales FlyLIVE service will be uniquely able to deliver airlines and their passengers with an unsurpassed, connected inflight entertainment experience.”

Launching custom solutions

It’s not only the commercial market that needs dedicated solutions for inflight connectivity. Government, military and business aircraft, as well as emergency response and disaster relief planes, all require bespoke connectivity solutions that will enable a whole host of unique user applications.

As such, April 2017 saw Thuraya Telecommunications Company launch Thuraya Aero, a satellite communication service that enables inflight connectivity for Internet access, voice calls, text-messaging and high-speed data applications on board small and medium sized aircrafts, for fixed wing and rotary wing aircrafts, as well as any other air platforms flying missions beyond line of sight. Thuraya Aero offers a simple interface to onboard sensors and equipment and can be easily installed on any plane.

Developed in collaboration with the Aero Group, Thuraya Aero enables applications that require real-time airborne data such as search and rescue (SAR), ISR (Intelligence, Surveillance and Reconnaissance), telemedicine, military operations, office-in-the-sky and border surveillance. Its unique capabilities allow Thuraya to provide services to a wide range of market segments including government, military, enterprise and disaster relief.

Thuraya Aero is a vital first step towards the company’s efforts to build a considerable presence in the aero sector that takes operational efficiency for its customers to a whole new level. With negligible installation expenses and easy conversion of existing L-band systems, Thuraya Aero is set to offer an exciting alternative to anything currently available on the market. Designed to operate at IP broadband speeds of up to 444kbps in single channel configuration and up to 700kbps with a dual channel system, Thuraya Aero also comes with a built-in video transmission capability that offers real-time video streaming using on board HD camera systems. This makes it well-suited for ISR and SAR aircrafts and other air platforms. Thuraya’s L-band satellite technology is the best choice for airborne platforms flying at medium or low levels because transmission is unaffected by weather conditions.

In addition, for business aviation, Thuraya Aero provides affordable VIP and executive inflight connectivity. During the flight, executives can talk on their own smartphone, send and receive text messages, access email and Internet with any mobile device, and hold video conferences.

Next generation inflight systems

It’s clear that the inflight connectivity market has evolved beyond delivering anything as basic as ‘just’ high-speed Internet for passengers. Today’s market-leading companies know that they can gain valuable insights into their passengers’ needs and wants by utilising the data generated from inflight connectivity systems to deliver a better experience and, most importantly, get passengers to spend more while in a captive environment. Moreover, airlines can operate their fleets more efficiently, saving money and increasing profits, using the latest in hands-off technology to track and monitor every aspect of an aircraft.

We can expect to see more inflight connectivity companies adopt these strategies in their next generation solutions, delivering more capabilities to airlines, enhancing the passenger experience, and maximising profits for all concerned.