

INFLIGHT CONNECTIVITY

A NEW OPPORTUNITY FOR
AFRICAN AVIATION





INFLIGHT CONNECTIVITY

A New Opportunity for African Aviation

Africa's opportunity	03
Connectivity and Africa	05
Getting there	07
Why Inmarsat	08
Inmarsat's products	09



AFRICA'S OPPORTUNITY

Africa is on the move. Many of its countries are home to an increasingly affluent and aspirational middle class, and there is an increasing belief that the continent has the potential to become the new industrial powerhouse of the 21st century. It's already home to six of the world's twelve fastest-growing economies, and the International Monetary Fund has predicted that Africa's overall growth prospects are among the best in the world for the next five years. This potential could in turn be worth \$587m to airlines from inflight connectivity by 2035¹

A key factor in Africa's recent progress has been the rapid rise of mobile telecommunications. The Financial Times has gone so far as to liken the mobile phone's influence on sub-Saharan Africa to that of the steam train on 19th century Europe, describing it as "the mechanical workhorse driving social and economic transformation". Thanks to mobile payment solutions, many countries have been fast-tracked into a world of financial participation, leapfrogging the preceding era of fixed communications. And as in other parts of the world, connectivity on the ground is likely to lead to expectations of connectivity in the air. According to Inmarsat's Inflight Connectivity Survey 2018, two thirds of those who feel that Wi-Fi is fundamental to daily life believe inflight Wi-Fi is a necessity. Increased mobile penetration also brings higher levels of device ownership, meaning passengers bring their own tech on board and increasingly expect to be able to use it.

We believe that air travel has the potential to accelerate economic growth and development in Africa, connecting markets both within and outside the continent, and opening up new ones, while also fostering further investment and innovation – including tourism – throughout the continent. Inflight connectivity can be a valuable enabler in this development.

In 1999, the Yamoussoukro Decision, which committed 44 signatory countries to deregulate air services in Africa, was an acknowledgement of the possibilities of improved air travel across the continent. The Single African Air Transport Market became a reality in January 2018. For the initial 23 member countries, this is a significant step forward on a continent where passengers have long been forced to undertake time-consuming routes via Europe or the Middle East when flying between African countries. The new arrangement should bring more routes across Africa as well as lower fares.

The most significant challenges in developing the continent's aviation market now lie largely with the airlines themselves.


And it's not just passengers who will benefit from open skies. According to an IATA survey, if just twelve key African countries opened their markets and increased connectivity, an extra 155,000 jobs and an additional US\$1.3 billion in annual GDP could be created in those countries. IATA predicts that SAATM could have an "immense impact" on African aviation.

The most significant challenges in developing the continent's aviation market now lie largely with the airlines themselves. Carriers in the region are challenged by lower load factors and higher costs than the world average: in 2016, African airlines contributed only two percent of world air traffic. Air traffic management is also an issue, with differing standards existing between countries. And while levels of air safety have been improving, accident rates in some regions remain comparatively high in global terms. By contrast, the private jet market is already well established in Africa, its growth fueled partly by increased wealth and partly by the need to circumvent the circuitous routes impacting passengers today.

And while connectivity already serves this market, it could undoubtedly be better served in future by more advanced products and services.

Inmarsat Aviation can help in resolving all of these issues.

A key factor in Africa's recent progress has been the rapid rise of mobile telecommunications.



The connected aircraft changes the rules. In tandem with global satellite communications and the technology of the Internet of Things, it can bring about a wide range of efficiencies and enhancements across the board: from flight optimisation and maintenance efficiencies to enhanced safety, passenger satisfaction and growth in ancillary revenue.

Inmarsat is the only operator of fully-owned and managed networks providing global high-speed broadband to both cabin and cockpit



IN THE COCKPIT

Satcom-based communications, navigation and surveillance allow the secure, real-time, transmission of mission-critical data to and from the aircraft and the ground. This makes it possible to track and manage aircraft more accurately, improving situational awareness and optimising flight routes to reduce fuel use – a particularly significant benefit in most African countries, where airlines typically pay more for fuel than the global average. Satcom can also empower regional air navigation service providers to modernise and standardise air traffic management processes.

The connected aircraft can continuously stream data back to base, so its systems and performance can be monitored during flight. So-called ‘predictive maintenance’ can model this data to forecast when parts need replacing, reducing costly unscheduled periods on the ground – and offering potential cost savings throughout the broader airline ecosystem. And Flight Data Recorder information streamed from the aircraft in real time (the “Black Box in the Cloud”) can provide critical information to help identify and resolve issues in the air, or accelerate search and rescue processes.



IN THE CABIN

For passengers, high-quality Wi-Fi offers an enhanced onboard experience, while also providing airlines with new ancillary revenue streams from Wi-Fi access payment, inflight ecommerce, digital advertising sales and premium-priced, streamed inflight entertainment. According to Sky High Economics, a study of the commercial impact of inflight connectivity by the London School of Economics and Political Science, broadband enabled ancillary revenue in Africa will grow from just over \$10m in 2018 to more than \$306m by 2028.

Onboard Wi-Fi can also create a competitive point of difference for passengers travelling within Africa, while establishing parity with international airlines, which are already further down the road in terms of connectivity. According to the African Development Bank, the African middle class has grown by more than 240 percent in just over a decade, and the bank defines 15 million households as now being middle class.

A recent global research by the World Travel & Tourism Council (WTTC) highlighted the growth in business travel on the continent, showing that the biggest percentage growth in business travel in the world over the last five years came in the Democratic Republic of Congo, while Mozambique, Sudan, Angola, Rwanda and Ivory Coast also featured in the top 15 countries in the world for corporate travel growth during the same period.

For business passengers, the ability to stay connected means they can maximise their productivity while in the air. This applies equally to customers in the booming private jet market. African Business Magazine has reported that Nigeria is the fastest-growing private jet market in the world after China. And according to figures compiled by Corporate Jet Investor, South Africa is eleventh in the world in terms of jet registries, ahead of countries such as Australia, France and Switzerland.

GETTING THERE

Inmarsat offers both a global perspective and unparalleled expertise in inflight connectivity. It is the only company that can offer uninterrupted, high-speed coverage across the whole of Africa – as well as to destinations worldwide.

Inmarsat has proven experience working with airlines in less established markets to help maximise the opportunities brought by inflight connectivity. For instance, our relationship with Colombian airline Avianca, for which we are supplying a complete cockpit to cabin solution by adding GX Aviation cabin connectivity to its existing Classic Aero cockpit deployment.

Like Africa, Latin America has lagged somewhat behind other regions in terms of inflight connectivity, but in fact this could be an advantage. Because Avianca's fleet will be fitted with GX Aviation, it means the airline will be able to offer a faster, more reliable

inflight connectivity service than the first-generation solutions that some airlines in the rest of the world currently employ.

Companies using these older solutions will have to wait for the next upgrade cycle to experience GX. Once again, Africa has the chance to leapfrog others in terms of technology.

And in the future, connectivity will become the norm on new aircraft, so as they enter the second-hand and leased market (the source of significant numbers of aircraft for many African airlines), aircraft will increasingly be available with terminals already fitted, reducing the capex costs of installation.



As the industry leader and pioneer of mobile satellite communications, Inmarsat has been connecting the world for nearly 40 years. The company was established in 1979 to enable ships to stay in constant touch with shore or to call for help in an emergency, no matter how far out to sea.

Today, we provide global connectivity via our fleet of 13 satellites to organisations and individuals, enabling them to stay in touch on land, at sea or in the air. When it comes to aviation, as a leading provider of digital communications solutions to airlines, operators and passengers worldwide, Inmarsat connects over 12,000 aircraft across all sectors. In fact, Inmarsat is the only network operator able to provide inflight connectivity services for the entire aircraft; voice and safety communications in the cockpit, real-time operations data and reliable,

high-speed, Wi-Fi in the cabin. As the capabilities of the complete connected aircraft evolve, we're helping airlines navigate the complex choices on this new frontier.

Inmarsat Aviation is ready to help African airlines realise the full potential of a connected fleet.



INMARSAT'S PRODUCTS

Airline Operations

SWIFTBROADBAND

SwiftBroadband, Inmarsat's entry-level IP-based data service, is one of the most widely used and cost-effective connectivity solutions in the aviation industry. It provides simultaneous voice and IP data communications, delivering non-safety-critical information to enhance airline operations – with committed connection rates worldwide. Commonly used in conjunction with Inmarsat's Classic Aero secure cockpit and safety services, the system provides up to four simultaneous IP channels to the aircraft, and enables a high-quality voice service with the full

functionality of fixed phone services on the ground.

SwiftBroadband operates over Inmarsat's I-4 satellite constellation, covering all major aviation routes (including all African routes) worldwide. Our L-band network is relied on by the aviation industry, with the redundancy and resilience to guarantee 99.9% network availability.

A variety of small and lightweight terminal options are available, making it suitable whatever the size of your aircraft, or the needs of your crew.

SB-S

SB-S (SwiftBroadband-Safety) is the first global, secure, broadband-speed connection to the cockpit, bringing real-time visibility to airline operations. Exchanging data-rich information between aircraft and the ground unlocks new levels of intelligence to drive decision-making and optimise fleet performance. SB-S opens a new world of digital information, evolving the role of satellite communications from a safety utility to a key source of strategic value for airlines, enabling everything from improved fuel efficiency and increased capacity to better asset utilisation and enhanced safety.

SB-S is the only cockpit service to combine three distinct capabilities; traditional ACARS communication – Automatic Dependent Surveillance-Contract (ADS-C) tracking and Controller Pilot Data Link Communications (CPDLC); a unique, prioritised IP channel that provides additional availability for air traffic safety communications; and an IP-based voice and communications channel for Airline Operations Centre applications.

SB-S unlocks unprecedented safety and operational potential. Latitude, longitude, altitude, true heading,

and groundspeed. Real-time graphic weather information means that planes can adjust their course to avoid bad weather as it happens. Flight data monitoring helps reduce delays, unplanned maintenance and fuel bills, and even offers the potential for real-time intervention in developing safety or security situations. Today's aircraft have more sensors on them than ever before, and these are rich sources of information to optimise fleet performance, which in turn can lead to competitive advantage. With SB-S, aircraft health and performance data is beamed to the ground in real time, which improves predictive maintenance and can make on-the-ground turnarounds faster.

Only Inmarsat can prioritise broadband data to the cockpit, providing segregation between regulated safety services and cabin communications. This data segregation creates a virtual "fortress door," ensuring the highest levels of information security. While offering a robust level of encryption and security, it also means the demand for passenger or other data will not affect the safety-critical cockpit data.

SB-S offers global coverage as required by the ICAO GOLD standards for reliability and performance, allowing airlines to benefit from near real-time reporting of aircraft.

Passenger Experience

GX AVIATION

GX Aviation offers the ultimate in inflight passenger experience, while serving as a robust and reliable platform to help airlines unlock new ancillary revenue streams.

The world's first and only, truly global, high-speed broadband service from a single network operator, GX Aviation has been intelligently engineered to meet the needs of worldwide aviation. Inmarsat's four, Global Xpress Ka-band satellites provide a global foundation layer of high-throughput, spot beam coverage designed specifically to serve a mobile audience. Then, GX's unique steerable beams deliver the flexibility to add and redirect capacity where airlines need it most, across busy flight routes and congested airport hubs.

Consistent, reliable high-speed connectivity opens a new world of service innovation, giving airlines the freedom to deliver unique experiences for their passengers. GX Aviation goes beyond passenger Wi-Fi, offering the capability for streamed entertainment and advanced in-flight shopping

and the potential for digital and personalised services that can transform passenger relationships and drive loyalty. Inmarsat is the only operator that can support this capability across the whole African continent.

And as demand in Africa inevitably grows, so will GX capacity, future-proofing airlines' choice today. With confirmed investment in future satellite launches, innovative new hybrid networks and advanced onboard terminals, there's a technology roadmap to rely on.

GX Aviation is uniquely placed to meet the needs of airlines and their passengers. A proven solution already adopted by many of the world's leading airlines at global and regional level, including Lufthansa Group, Qatar Airways, Singapore Airlines, Air Asia, Air Astana and Air Caraïbes. We're helping airlines worldwide develop the services and applications that will set them apart today and long into the future.

Business Aviation

JET CONNEX

Jet ConneX is Inmarsat's connectivity solution for Africa's increasing number of business and private jet operators, providing seamless inflight connectivity for every passenger, wherever, whenever they fly.

The first, worldwide, Ka-band network available to business aviation, Jet ConneX makes today's connected business aircraft a more productive and efficient way to fly. The service is capable of supporting video-streaming, Voice-over-IP, live TV, file transfer and VPN. Just about everything that makes business fast moving down here, moves just as fast at 35,000ft with Jet ConneX.

Like GX Aviation, Jet ConneX is powered by Global Xpress, and is the only business aviation solution to offer a guaranteed minimum rate of data to the plane. And if data requirements rise, upgradeable bandwidth, at a low cost per Mb, gives you the flexibility to adapt to changing needs and maximise the return on your investment.

State-of-the-art, lightweight, Honeywell JetWave hardware is optimised for the GX network to ensure a reliable and fast connectivity experience across the globe.

OUR PARTNERS

Our global network of distribution partners offers terminal equipment and installation, tailored service plans, as well as custom applications, 24/7 technical support and value-added services to help manage usage and optimise the benefit from your investment.

Honeywell

SITAONAIRO

Panasonic

**Rockwell
Collins**

SD satcom direct.

**ZODIAC
AEROSPACE**

THALES

For more information about Inmarsat's connectivity services, please contact:
Aviation.Dubai@inmarsat.com

Or visit inmarsataviation.com

Whilst this information has been prepared by Inmarsat in good faith, and all reasonable efforts have been made to ensure its accuracy, Inmarsat makes no warranty or representation as to the accuracy, completeness or fitness for purpose or use of the information. Inmarsat shall not be liable for any loss or damage of any kind, including indirect or consequential loss, arising from use of the information and all warranties and conditions, whether express or implied by statute, common law or otherwise, are hereby excluded to the extent permitted by English law. INMARSAT is a trademark of the International Mobile Satellite Organisation, the Inmarsat LOGO is a trademark of Inmarsat (IP) Company Limited. Both trademarks are licensed to Inmarsat Global Limited. ©Inmarsat Global Limited 2018. All rights reserved. African Aviation, September 2018.

inmarsat
aviation