VALOUR CONSULTANCY:

THE FUTURE OF AERONAUTICAL CONNECTIVITY

WHY CHOOSE US?

Solutions that add real value: By devoting the right amount of time to getting a job done properly, we have provided information in **251 pages** of analysis you can trust.

Client involvement in scoping: This report was developed in conjunction with leading connectivity hardware manufacturers, service providers, satellite operators and airlines.

Rigorous primary research process: This report relies upon information derived from almost **50 hours** of telephone, email and face-to-face interviews.

Depth and accuracy of data: Statistics are doubled-checked and checked again before client review and then, publication. This study contains more than **6,000** data points in **80** tables, supported by **55** charts/figures.

Unmatched client support: **3 consultants** worked on this project for 6 months to deliver a credible, reliable and invaluable piece of market intelligence. Our services don't end with the delivery of a report and we are always on hand to answer questions.

A brand new report providing an unparalleled analysis of the current and future provision of in-flight Internet and mobile phone services onboard commercial passenger aircraft.

Key Questions Answered in this Report

- Which airlines are currently providing in-flight Wi-Fi, in-flight cellular connectivity and a combination of the two?
- How quickly and to what extent will the number of connected aircraft grow over the next ten years?
- How will the number of connected aircraft vary by geographic region, aircraft type, fitment type and frequency band?
- What are key drivers/inhibitors of growth in the market?
- How are airlines using in-flight connectivity to improve internal operations and what are the cost savings that can be realised?
- What are the costs involved in deploying in-flight connectivity?
- How vulnerable are onboard networks to cyber terrorists and what is being done to protect aircraft from such threats?
- What is the demand from passengers for in-flight connectivity? What are current and future revenues from these services?
- What is the size of the market for key in-flight connectivity hardware components in terms of revenues and unit shipments?
- Who are the leading providers of in-flight connectivity hardware components and what are their 2014 revenue shares?
- What are the market shares of other players in the value chain, namely, service providers, airlines and satellite operators?
- How do trends in the personal electronics device markets impact behaviour and usage in the air?
- What are the opinions of airlines on the in-flight connectivity market?

"This report focuses on the key issues fundamental to an in-depth understanding of the in-flight connectivity market."

A Single User License is £3,350 / US $5,630 / EUR €4,075 for a PDF of the report and Excel tables and charts

Introduction

After the demise of Connexion by Boeing in 2006, it took a couple of years for the idea of in-flight connectivity to regain serious attention. Eager to seek out new revenue streams and differentiate in what has become an increasingly competitive marketplace; airlines once again began looking to turn their fleets into flying hotspots in the immediate aftermath of the global recession. Led by the likes of Gogo, OnAir, Global Eagle Entertainment and Panasonic Avionics, the number of Wi-Fi-enabled aircraft passed the 1,000 mark in 2010.

Fast forward to 2014 and the number of connected aircraft now exceeds 4,000. However, much of the global fleet flying out of hubs outside of the United States remains untapped. Connectivity service providers are desperately scrambling for a slice of this pie and with aeronautical Ka-band now no longer a pipedream but a reality, many airlines are unsure about which type of communications system they should adopt. Indeed, it is only now that there is a growing realisation that take rates will likely not reach initial expectations and that the real elephant in the room is the huge potential this technology has to improve business operations, rather than boost revenues.

Valour Consultancy's aim in writing this report is to provide companies interested in the market with detailed information on its present status and likely future development.

Report Highlights

- Analysis of the in-flight connectivity market between 2010 and 2013 in terms of installed base and new installations
- Forecasts to 2024 by fitment type, aircraft type, frequency band, and geographic region
- Deep dive analysis into the deployment of standalone in-flight Wi-Fi, standalone in-flight cellular and both technologies
- Optimistic and pessimistic projections for key forecasts with underlining drivers and vulnerabilities explained
- In-flight connectivity service revenue forecasts out to 2024
- Revenue, shipment and ASP projects for vital in-flight connectivity hardware
- Thorough description of key trends within the market
- Satellite coverage maps and the latest information on new launches
- Technology overview providing a deeper understanding of the technical aspects of in-flight connectivity
- Market share estimates for satellite operators, service providers, equipment manufacturers and airlines
- Thirty detailed profiles of key players active in various segments of the in-flight connectivity market

Market Breakdown

Cellular connected aircraft
Wi-Fi connected aircraft
Cellular & Wi-Fi connected aircraft
Penetration

Narrow-body (e.g. B737)
Wide-body (e.g. A330)
Regional jet (e.g. CRJ Series)

Factory line-fitment
Post-production retrofit

Africa
Central & Eastern Europe
Western Europe
Middle East
Central & South America
North America
Oceania, East & Southeast Asia
Rest of Asia Pacific

Antennas
Pico cells
Servers
Modems/routers
Wireless access points

Air-to-Ground
L-band
Ku-band
Ka-band
Combination

Market shares
PED market analysis
IFC costs
IFC service revenues
IFC cost savings

Example Tables and Charts

Example Table 1
Global Installed Base of Wi-Fi Connected Aircraft by Frequency Band
Installed Base at 31st December: Forecast (2014 - 2024)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR (14 - 24)
Air-to-Ground	10	20	30	40	50	60	70	80	90	100	110	0%
Annual Growth	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*44%*	
L-band Satellite	20	30	40	50	60	70	80	90	100	110	120	0%
Annual Growth	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	
Ku-band Satellite	5	10	15	20	25	30	35	40	45	50	55	0%
Annual Growth	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	*2%*	
Ka-band Satellite	1	2	3	4	5	6	7	8	9	10	11	0%
Annual Growth	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	*1%*	
Combination	0	0	0	0	0	0	0	0	0	0	0	0%
Annual Growth	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	
Total	**36**	**62**	**88**	**114**	**140**	**166**	**192**	**218**	**244**	**270**	**296**	**0%**
Annual Growth	***5%***	***5%***	***5%***	***5%***	***5%***	***5%***	***5%***	***5%***	***5%***	***5%***	***5%***	

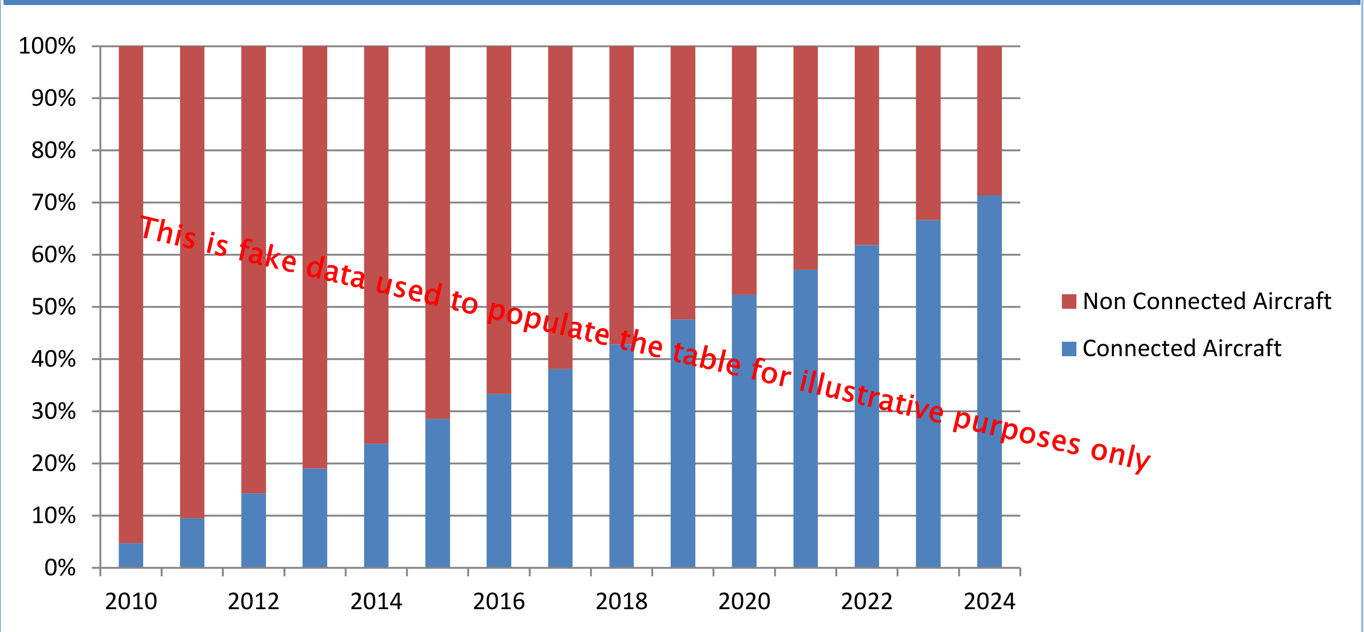
Source: Valour Consultancy **November 2014**

Example Table 2
Penetration of Total Connected Aircraft Into Global Active Commercial Fleet: Forecast (2014 - 2024)
Installed Base at 31st December: Forecast (2014 - 2024)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	CAGR (14 - 24)
Cellular Only Aircraft	100	200	300	400	500	600	700	800	900	1,000	1,100	1%
% of Global Active Fleet	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Wi-Fi Only Aircraft	1,000	1,300	1,600	1,900	2,200	2,500	2,800	3,100	3,400	3,700	4,000	2%
% of Global Active Fleet	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
Cellular & Wi-Fi Aircraft	500	740	980	1,220	1,460	1,700	1,940	2,180	2,420	2,660	2,900	3%
% of Global Active Fleet	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Total Connected Aircraft	**1,600**	**2,240**	**2,880**	**3,520**	**4,160**	**4,800**	**5,440**	**6,080**	**6,720**	**7,360**	**8,000**	**4%**
% of Global Active Fleet	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	

Source: Valour Consultancy **November 2014**

Example Chart 1
Penetration of Total Connected Aircraft Into Global Active Commercial Fleet
Total Connected Aircraft - 2010 to 2024



Source: Valour Consultancy **November 2014**

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About Valour Consultancy

Valour Consultancy was formed by three friends in 2012. With over a decade of market research experience on both agency- and client-side between them, the founders wanted to base the company on three core values:

HONESTY, TRUST & TIME

We supply highly-detailed market research reports and actionable consultancy on connectivity in the transportation sector, sometimes referred to as "connectivity on the move". Our studies provide clients with an unparalleled insight into a number of different areas within this sector including the use of satellite connectivity in the maritime and offshore sector, as well as the rapidly emerging market for in-flight Wi-Fi and cellular connectivity.

Not just another common and undistinguished "XYZ research", we aim to deliver solutions that add real value to our clients. By devoting the requisite amount of time to getting a job done properly, we are able to provide data that is unrivalled in its accuracy and importantly, information that people can trust. Our consultants are always on hand to answer your questions and actively encourage client involvement in the scoping process. Adopting this approach and combining it with unmatched integrity, confidentiality and a personal touch, we continue to build long-lasting relationships.

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