

Innovation - **Civil Aerospace** - Defence Aerospace - Transportation - Defence - Security

Thales on the Civil Aerospace market





Raz©Thales

AT A GLANCE

World n°1 in ATM, covering 40% of world’s surface

World n°1 in civil helicopter avionics

N° 3 worldwide, n° 1 in Europe for civil fixed-wing aircraft avionics

World n°2 in in-flight entertainment and connectivity systems

N° 4 worldwide and European n°2 in electrical generation and power conversion

1 out of every 3 aircraft around the world rely on Thales equipment on the ground and/or in the air

80 years of experience in the training and simulation business

Pioneer in training and simulation and key player in training centre strategy for civil helicopters, with 3 centres around the world

Thales key market areas

- Avionics for commercial aircraft, business jets, and helicopters
- In-flight entertainment and connectivity (InFlyt Experience)
- Maintenance and services
- Air Traffic Management (ATM)
- Power generation and electrical systems
- Training and simulation



MARKET DATA SHEET

Key figures

> 5,000+

Civil helicopters equipped with Thales avionics solutions

> 15,000+

Thales employees directly involved in aerospace and air traffic management activities around the world

> 16,000+

Air traffic controllers use Thales systems around the world

> 70,000+

Equipment items delivered over the past 10 years

> 750,000+

Passengers use Thales in-flight entertainment every day across 75 airline customers on a total of 1,787 aircraft

MARKET DATA

Airlines will see a 31% increase in passenger numbers by 2017 (Source: IATA Airline Industry Forecast 2013-2017).

Airlines are increasingly seeking to refurbish aging fleets, with a sharp focus on greater fuel economies, reducing CO₂ emissions, newer navigation equipment and flight management systems enabled for connectivity.

From 2013-2014, the avionics aftermarket generated high-single-digit growth.

Competition amongst airlines and the emergence of “super-premium” airlines is driving investments in systems and connectivity solutions.

The SESAR and NextGen air traffic management upgrade programmes are developing as passenger numbers increase.

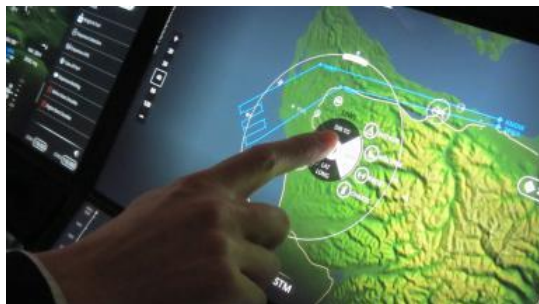
The growing trend for airlines to bundle IFE and connectivity is a major driver in this area. Most RFPs in 2013 and 2014 included some form of connectivity offering together with traditional IFE.

Rapidly developing consumer technology is facilitating IFE development, offering improved features and higher performance at lower cost.

A reduction in the price per megabit is another key driver of connectivity, and developments for connected aircraft are advancing quickly.

By 2025, an estimated 70% of the world’s fleet will be equipped with cabin air-to-ground connectivity.

Several specialised fields of development like remote area exploration for natural resources are opening up as economic opportunities.



Changing economic and security considerations are encouraging helicopter operators to develop flexible fleets that can adapt to multiple missions.

Helicopter operators’ demand for training and simulation is evolving as the nature of the industry changes.

Services are becoming ever more important as pilots who do not have access to support services need to maintain and support ever more complex mission-critical systems.

WHY CHOOSE THALES

Avionics

As one of the world’s largest partners to the aerospace sector, Thales is a leading supplier of avionics suites, components and onboard instruments to all the world’s major airframers.

With over 20% of the Group’s turnover reinvested in research and technology, Thales is also widely regarded as amongst the very top in innovation. Unveiled in 2013, our cockpit of the future, Avionics 2020, is regarded as the most advanced future cockpit concept in the world.

The Group’s product philosophy is geared towards open, flexible avionics systems and suites for civil and business aircraft and helicopters. By working together with manufacturers, we ensure aircraft are equipped with easy-to-use, secure, interactive architectures backed by a global services and support operation.

The focus on customer satisfaction is reflected by Thales's extensive upstream involvement in programmes and the ability to offer tailored

solutions developed in concert with customers. The 24-hour worldwide service support maximises the integration of ground systems and onboard systems to improve air traffic flows, reduce operating costs and protect the environment.

IFE/Connectivity: the connected aircraft

Demand driven both by passengers’ expectations and airline operations is pushing the industry to speed the development of aircraft connectivity for passengers, cabin crew and flight crew.

With major areas of development across all market segments, Thales is one of the world’s leading providers of connected services on aircraft, encompassing both flight systems and passenger cabins.

As the world’s second-largest IFE systems developer, Thales’s mission and entire InFlyt product line is geared to enhancing the passenger experience, from providing fast and secure connectivity to delivering on-demand entertainment.

In anticipation of future programme development, Thales’s internal building blocks are focused on increasing and improving connectivity, to drive efficiency and safety for pilots in increasingly congested skies.

MARKET DATA SHEET



As a leading provider of maintenance and services for airlines, Thales's connectivity solutions extend to servicing aircraft systems themselves as well as linking airline operations centres with maintenance hubs.

Harmonising its security expertise with its extensive satellite communications resources, Thales secures global satcom networks that, in turn, further help develop connectivity.

Decreasing costs and increasing segmentation are opening up new markets for Thales in the single-aisle, medium-haul and short-haul segments, with systems selected for Turkish Airlines A321, Saudi Arabian Airlines A320, Oman's B737 and American Airlines with different single-aisle platforms.

Maintenance and services

Thales leverages its position as a world-leading avionics component developer and manufacturer to offer customers one of the most advanced integrated avionics support services in the market.

Thales's global footprint allows the Group to offer a worldwide network of 6 regional hubs, 3 repair centres and 25 support centres.

With Thales, an aircraft can be serviced within 12 hours, no matter where it is flying to.

From delivering new, selectable, optional avionics equipment, Electronic Flight Bag (EFB) solutions, to retrofit and Supplemental Type Certificates, AOG support, training, data management, spares distribution, trading, maintenance and asset management services, Thales's *a la carte* services or long-term services packages can be tailored to any type of after-market requirement.

Air Traffic Management

To offer a unique global surveillance capability, Thales combines radar and non-radar technologies to provide its customers with the most appropriate surveillance solutions.

As the undisputed world leader in ATM, Thales delivers solutions and services both in the air and on the ground.

Thales supports air traffic controllers, airports and civil aviation authorities in meeting the challenges of growth, safety, economic efficiency, environmental performance, security and optimal passenger comfort.

ATM is essential to developing the capacities required to implement newer technologies to better connect ground and air services through satellite communication, datalink and interoperability.



Thales is the principal industry contributor to SESAR, the world's largest air traffic interoperability programme.

Thales contributes to major aviation initiatives aimed at addressing traffic congestion and, as the only active player in developing both ground and airborne systems, the Group is the

only player with the ability to develop true system interoperability.

Power generation and electrical systems

In the power and propulsion field, new platforms’ increasing requirements and passengers’ growing demand for onboard connectivity and power are driving research and innovation in electrical power and distribution systems.

Training and simulation centres

Thales is a pioneer in the development of full flight and mission training solutions, introducing innovative systems in all fields of helicopter operations for the benefit of our customers.

Thales’s training strategy combines innovative training devices with tailored delivery approaches, including providing training as a service and setting up turnkey training centres.

The Thales Training Academy in Albertville (France) is the first centre in Europe to provide full flight training and simulation for the AS350, and is expanding its training offering for regional SAR operators. The Academy was certified by the EASA in 2014.



In its final stages of development, the Thales helicopter training centre in Norway (equipped with an EC225 Full Flight Simulator level D) specialises in providing pilots with specific training for missions in the harsh conditions likely to prevail in the North Sea in oil and gas exploration.

Thales and CareFlight Group are set to launch Australia’s first civil helicopter training centre. The centre will employ world-class full flight simulation training, tailored specifically for the requirements of AW139 air crews.



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