ADI
Nouvelle-Aquitaine
Agence de Développement et d'Innovation

RÉGION
Nouvelle-
Aquitaine

Exceptional Assets

- A very diversified ASD sector, consolidated with the Nouvelle-Aquitaine administrative grouping, actively involved in all major aeronautics and space programs
- A dual aeronautics sector, where numerous military technical solutions enrich the civil domain
- Nouvelle-Aquitaine and Occitanie, the two regions of the Aerospace Valley World Competitiveness Cluster in aeronautics, space & embedded systems
- A proactive partnership policy of public authorities promote the sector (employment and training support, competitiveness and innovation strategy, specific financing)
- The region's economic vitality with direct links to the major highway networks and TGV high-speed train infrastructure
- Territorial proximity of prime contractors for greater synergy and control of technologies
- The presence of the vast majority of land-sea-air joint armed forces training centers
- AEROCAMPUS Aquitaine, an international-class campus for aerospace training
- ISAE-ENSMA, the aeronautics and mechanical engineering school in Poitiers

NOUVELLE-AQUITAINE
Smart Aerospace Region

700 industrial establishments

60,000 employees, including **20,000** from the Ministry of Defense

Over **€4 billion** in revenues for aeronautics and space

€2 billion turnover for export

Bordeaux and Aquitaine, Venue of international business events

ADS SHOW EUROPE
World military MRO congress

UGS
Unmanned Global Systems
International trade show for unmanned air, land and sea systems

SOFINS (Private meeting)
Special Operations Forces Innovation Network Seminar
Figures from the March 2017 edition: 236 exhibitors, 4,000 visitors, 46 delegations from 43 countries

Everything that flies bears the mark of Nouvelle-Aquitaine!

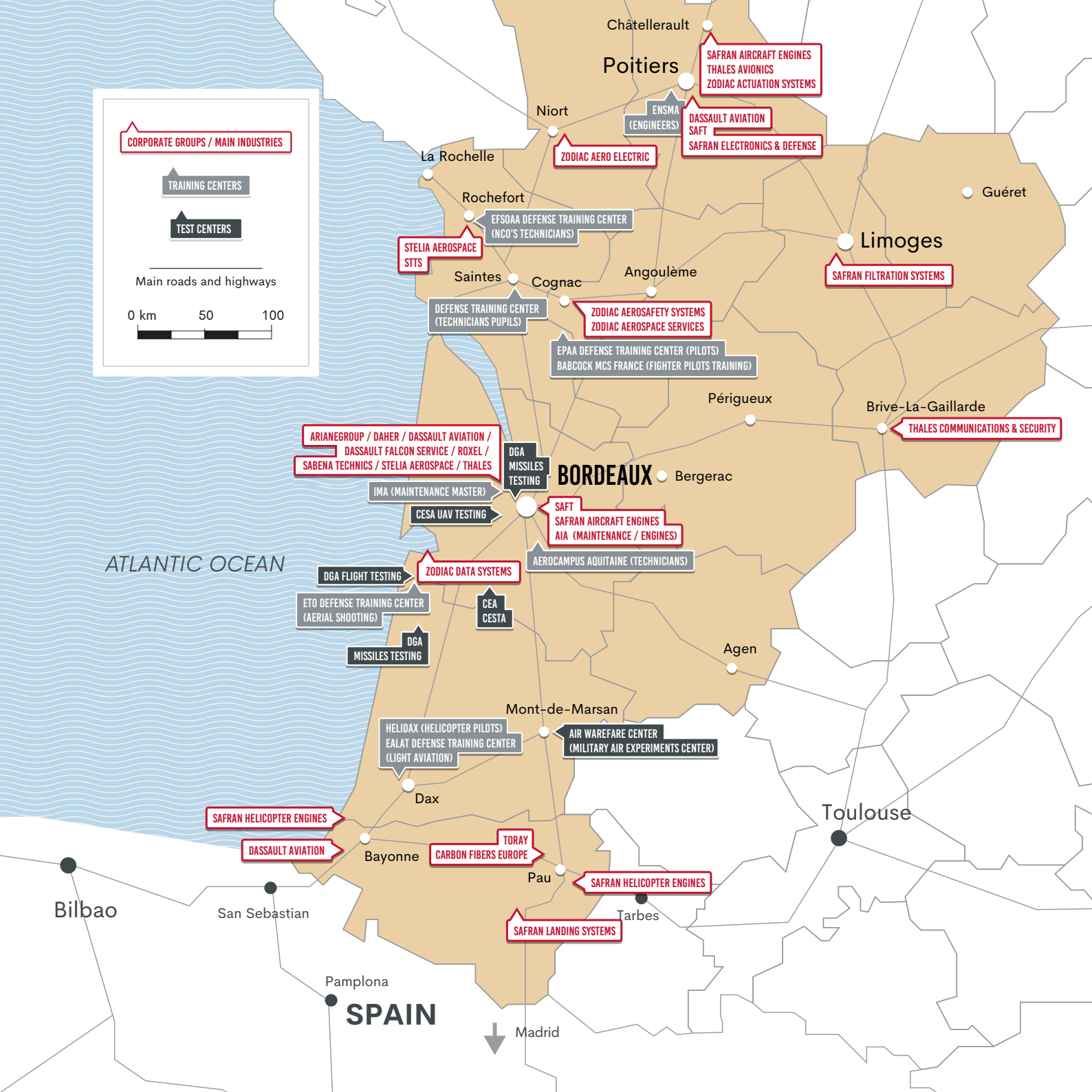
World Leader

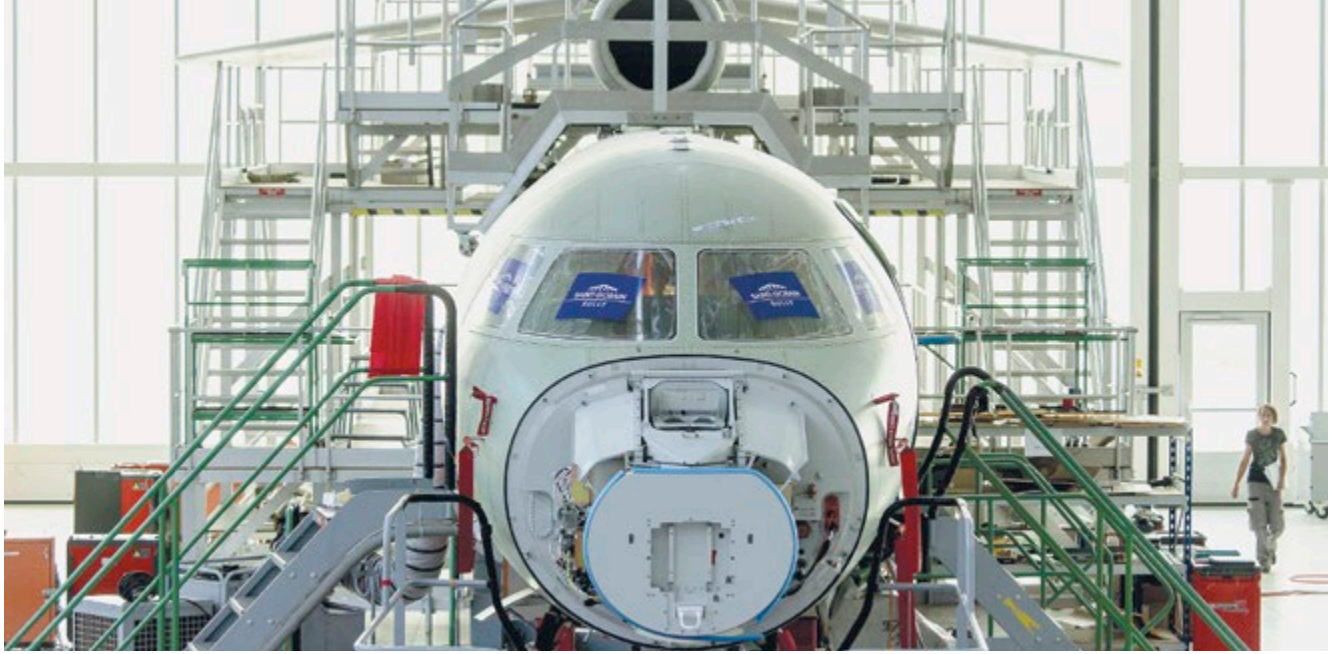
- Helicopter engines
- Top of the range corporate jets
- Landing and braking systems
- Launch vehicles and propulsion
- Deterrent weapons systems
- Atmospheric re-entry technologies
- High-technology batteries
- Carbon fiber and high-performance composite materials
- Electrical power management

Leader in Europe

- Military aircraft
- Tactical propulsion systems
- High technology composite materials
- Radar and embedded systems
- Radar and monitoring systems
- Ground and airborne testing and measurements
- Maintenance and repair (MOC / MRO)
- Aircraft cabin interiors
- ASD training labs
- Aircraft painting

One of the main european aeronautical decision centers


CORPORATE GROUPS / MAIN INDUSTRIES
TRAINING CENTERS
TEST CENTERS
Main roads and highways
0 km 50 100
Châtellerault
Poitiers
SAFRAN AIRCRAFT ENGINES
THALES AVIONICS
ZODIAC ACTUATION SYSTEMS
Niort
ENSMA (ENGINEERS)
DASSAULT AVIATION
SAFT
SAFRAN ELECTRONICS & DEFENSE
ZODIAC AERO ELECTRIC
La Rochelle
Rochefort
EFSOAA DEFENSE TRAINING CENTER (NCO'S TECHNICIANS)
STELIA AEROSPACE
STTS
Guéret
Limoges
SAFRAN FILTRATION SYSTEMS
Saintes
Cognac
Angoulême
DEFENSE TRAINING CENTER (TECHNICIANS PUPILS)
ZODIAC AEROSAFETY SYSTEMS
ZODIAC AEROSPACE SERVICES
EPAA DEFENSE TRAINING CENTER (PILOTS)
BABCOCK MCS FRANCE (FIGHTER PILOTS TRAINING)
Périgueux
Brive-La-Gaillarde
THALES COMMUNICATIONS & SECURITY
ARIANEGROUP / DAHER / DASSAULT AVIATION / DASSAULT FALCON SERVICE / ROXEL / SABENA TECHNICS / STELIA AEROSPACE / THALES
DGA MISSILES TESTING
BORDEAUX
Bergerac
IMA (MAINTENANCE MASTER)
CESA UAV TESTING
SAFT
SAFRAN AIRCRAFT ENGINES
AIA (MAINTENANCE / ENGINES)
AEROCAMPUS AQUITAINE (TECHNICIANS)
ATLANTIC OCEAN
DGA FLIGHT TESTING
ZODIAC DATA SYSTEMS
ETO DEFENSE TRAINING CENTER (AERIAL SHOOTING)
CEA CESTA
DGA MISSILES TESTING
Agen
Mont-de-Marsan
HELIDAX (HELICOPTER PILOTS)
EALAT DEFENSE TRAINING CENTER (LIGHT AVIATION)
AIR WAREFARE CENTER (MILITARY AIR EXPERIMENTS CENTER)
Dax
Toulouse
SAFRAN HELICOPTER ENGINES
DASSAULT AVIATION
Bayonne
TORAY CARBON FIBERS EUROPE
Pau
SAFRAN HELICOPTER ENGINES
Tarbes
SAFRAN LANDING SYSTEMS
Bilbao
San Sebastian
Pamplona
SPAIN
Madrid



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Nouvelle-Aquitaine, at the forefront of Aerospace and Defense

HELIDAX - W. CONDETTE

Major Corporate Groups

ArianeGroup, Daher, Dassault Aviation, Dassault Falcon Service, ESI, Hutchinson, Lisi Aerospace, Roxel, Sabena Technics / TAT Group, Safran Aircraft Engines, Safran Electronics & Defense, Safran Helicopter Engines, Safran Landing Systems, SAFT, Stelia Aerospace, Stelia Composites, STTS Group, Thales, Toray CFE, Zodiac Aerospace, etc.

A network of innovative SMEs / MID CAPS

2MoRO, ACH, AD Industrie, Aeroprotec, A&T Aerospace, Aero Composites Saintonge, AGB, AK Group, Alcen, Algo'Tech, Aquitaine Electronique, Ateliers Bigata, Aunis Production Industrie, Brown Europe, C3 Technologies, Catherineau, Clip Industrie, Coeurjoly, Chrome Dur Industriel, Cofidur, CSA, Debitex, Diota, Echeverria, Elixir Aircraft, Epsilon Composite, Erma Electronique, FEDD, Figeac Aero, Flyops, Fonderies et Ateliers du Bélier, Fluorotechnique, Gora, ICM Industrie, IFTS, Immersion, Ingeliance, JV Group, Kuka, L'Electrolyse, Lauak, LMB, Lutec, Malichaud Atlantique, MAP, Meggitt, Metal-Chrome, Nexteam Group, Olikrom, PCC France, Potez Aéronautique, Prodec Metal, Rescoll, Schleipfer, Serma Group, Serta ASD, Simaco, Simair, Skeyetech, Somocap, SPI Aéro, Starplast, STI France, Stivent Industrie, TDCI, TDM, Techman Head, Tekniaero, Telerad, Tensyl, Ventana, etc.

Overall coherence centered on Bordeaux-Merignac airport

© THALES

A wave of success for the Bordeaux Airport and the entire region

To counter the effect of the new high-speed rail line between Paris and Bordeaux (2-hr trip as of July 2017), airport management has anticipated the disruption through a two-pronged approach: develop a strategy focused on low cost flights and make the airport an international hub for European capitals and North Africa. The city of Bordeaux was acclaimed by international media numerous times in 2016.

2016 was another remarkable year for the Bordeaux-Mérignac airport - 8.9% traffic growth (up 70% in 7 years), one of France's fastest growing airports. The trade journal Air Transport News acclaimed it as the "Best Airport in the World for 2016" in the category of under 10 million passengers per year.

The growing strength of the airport zone

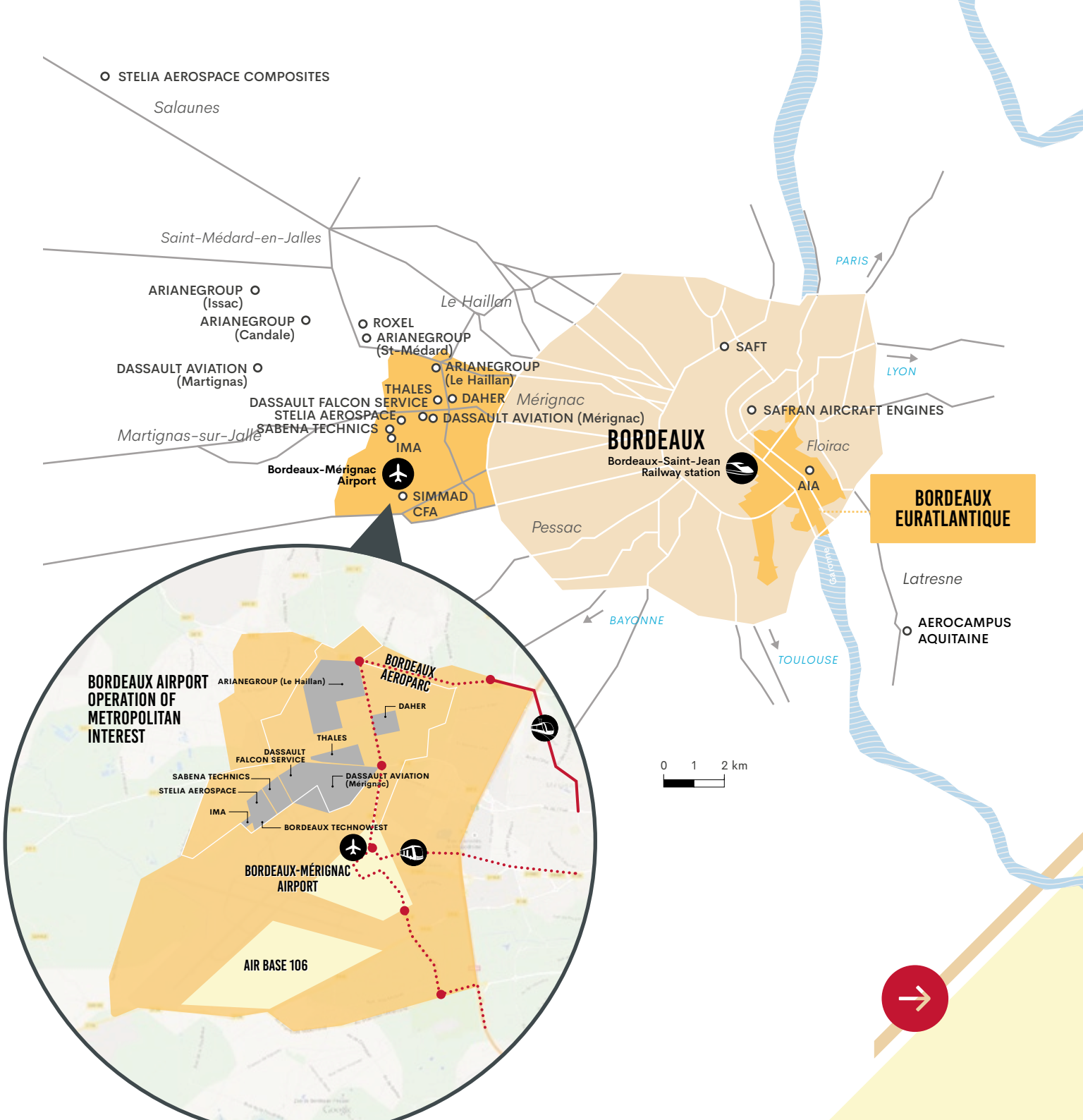
As the leading industrial complex in Nouvelle-Aquitaine, the airport's appeal grew in 2016, along with its excellent aerospace cluster, which currently employs 35,000 people, with a potential for growth of over 10,000 more jobs by 2030. An ambitious development project, the Bordeaux Airport Operation of Metropolitan Interest, is underway in line with the regional economic development policy for the sector. This plan concerns an area of 2,500 hectares, bridging the municipalities of Mérignac, Le Haillan and Saint-Médard-en-Jalles, and provides for comprehensive development of the area with:

- Airport to Bordeaux city center transit in 35 min thanks to the extension of tram line A (2020)
- Airport to Saint-Jean station transit by bus with a high frequency of service and TRE regional rail express (2019)
- Requalification of urban spaces (cycling routes, park and ride) and creation of an Aeronautics Boulevard
- International business park of the 45th Parallel (28,000 m^2 of offices, a 1,400-seat convention center, hotel, restaurants and parking)
- "Aerocity" (see below)

A gateway to aeronautics in Nouvelle-Aquitaine for greater visibility

Just as Bordeaux has its Cité du Vin, aerospace will have its own dedicated complex, bordering the airport, to highlight the vibrant industrial and economic sector.

The Nouvelle-Aquitaine Region, Bordeaux Métropole and the city of Mérignac have launched a study with AEROCAMPUS Aquitaine, to define the contours of a complex resolutely turned towards the future. In addition, a museum space will shelter valuable documents on the history of aviation along with 50 aircraft from the former Air and Space Museum, France's second largest historic aircraft collection, after Le Bourget Air and Space Museum.


STELIA AEROSPACE COMPOSITES
Salaunes
Saint-Médard-en-Jalles
ARIANEGROUP (Issac)
ARIANEGROUP (Candale)
DASSAULT AVIATION (Martignas)
Martignas-sur-Jalle
ROXEL
ARIANEGROUP (St-Médard)
Le Haillan
ARIANEGROUP (Le Haillan)
THALES
DAHER
DASSAULT FALCON SERVICE
STELIA AEROSPACE
SABENA TECHNICS
IMA
DASSAULT AVIATION (Mérignac)
Mérignac
Bordeaux-Mérignac Airport
SIMMAD
CFA
BORDEAUX
Bordeaux-Saint-Jean Railway station
SAFT
SAFRAN AIRCRAFT ENGINES
AIA
Floirac
Pessac
PARIS
LYON
BAYONNE
TOULOUSE
BORDEAUX EURATLANTIQUE
Latresne
AEROCAMPUS AQUITAINE
Garonne
0 1 2 km
BORDEAUX AIRPORT OPERATION OF METROPOLITAN INTEREST
ARIANEGROUP (Le Haillan)
BORDEAUX AEROPARC
DAHER
THALES
DASSAULT FALCON SERVICE
SABENA TECHNICS
STELIA AEROSPACE
IMA
DASSAULT AVIATION (Mérignac)
BORDEAUX TECHNOWEST
BORDEAUX-MÉRIGNAC AIRPORT
AIR BASE 106

World-renowned aerospace complex

Coherent development: construction, overhaul, training, logistics

Major aerospace manufacturers invest in the airport zone and attract support partners who ensure the maintenance cycle of the aircraft they produce. Likewise, sales of the Rafale for export to many countries promote the installation of interfaces at Mérignac, which has also developed the key MRO cluster for Falcon type business aircraft.

Dassault Aviation, dual skills to design, produce and maintain exceptional aircraft

While Dassault's activities concerning Falcon business aircraft are slightly down in terms of order intake, servicing duality (civilian-military) helps balance out the situation, with the signing of numerous export contracts for the Rafale (84) in Egypt, Qatar, India and elsewhere.

As an aircraft manufacturer, Dassault continues to invest in Nouvelle-Aquitaine and reinforces its links to the region through its three Aquitaine sites in Biarritz (structural elements in composite materials), Mérignac and Martignas-sur-Jalle.

In November 2016, Dassault Falcon Service inaugurated the Bordeaux-Mérignac Maintenance, Repair and Overhaul Facility, to meet the increase in repair and overhaul services for the Falcon 7X, 8X and 5X.
The new complex at Bordeaux-Mérignac Airport, adjacent to the Dassault Aviation assembly plant, is adding 49,000 m² of additional MRO space, including a 7,200 m² hangar, and will accommodate up to six Falcon aircraft at a time.
Dassault Falcon Service Mérignac draws on engineering resources and specialists from the nearby Dassault Aviation assembly plant and other companies in the surrounding area. The new facility is also expected to boost employment in the region.

© DASSAULT AVIATION - P. STROPPA

Thales Campus, avionics factory of the future

At its industrial campus in Mérignac, Thales has grouped Thales Airborne Systems in Pessac, at the cutting edge of embedded radar, and Thales Avionics in Le Haillan, specializing in cockpits. With more than 60,000 m² of surface area on 16 hectares, 2,600 employees and €200 M invested, Thales Campus Bordeaux is the company's reference in terms of support and services and one of the most modern industrial complexes, thanks to its technologies and collaborative working methods. Thales Avionics SAS has its headquarters in Mérignac.
From there Thales runs the business of the European leader in flight electronics.
The Thales campus is an ultramodern and high environmental quality complex, where workplaces are designed for users' comfort: patios, natural lighting, and shared spaces with expansive windows.
It is also a technology platform, with 28,000 m² of test bench facilities, featuring highly advanced technical systems.
Constructing it in only 18 months was a major feat. The work process used the BIM method (Building Information Modeling), which brings together all the trades involved in a project around a digital model.
Consequently Tekla Global BIM Awards acclaimed the undertaking as the world's best BIM project of 2016 in all categories.

SIMMAD, centralized purchasing center for defense

SIMMAD, the Defense Ministry's integrated organization for the maintenance of aircraft in operational condition, is a joint armed forces resource, responsible for ensuring optimal availability of Ministry of Defense aircraft, cost control and coherence of actions for maintenance in operational condition. The transfer of SIMMAD to Airbase 106 has made the Nouvelle-Aquitaine region one of Europe's three largest decision-making centers with Manching in Germany and Bristol in the United Kingdom, and has confirmed the region's appeal for MOC. Thales Communications & Security has just signed a contract of nearly 1 billion euros for the implementation of logistics optimized for replenishment of aeronautical consumables (LORCA contract).

© THALES - QUENTIN REYTINAS

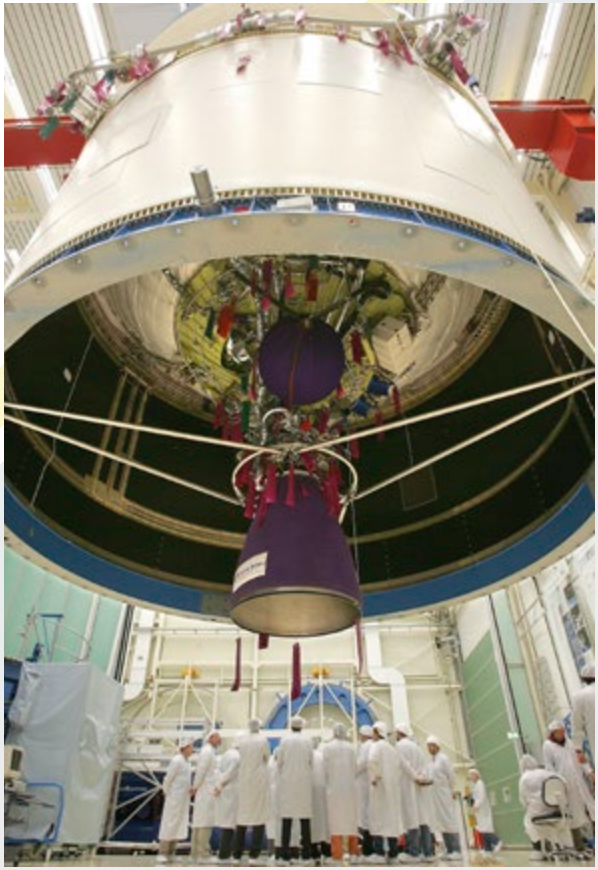
Bordeaux Aeroparc Technowest, the sector's industrial, scientific and technological complex

With direct access to the airport runways, Bordeaux Aeroparc Technowest groups SMEs, a fledgling business center and an incubator around the big names in aeronautics and space, including Thales, Dassault Aviation, ArianeGroup, Sabena Technics, Stelia Aerospace, etc. It identifies and supports R&D projects that lead to the creation of new businesses, particularly in embedded systems, composite materials and drones. A project to build a new complex is being studied within the future "Aerocity".

© STELIA AEROSPACE - F. SOCHA

World-class expertise in aircraft finishing and interior fittings

The aircraft interiors sector includes corporate groups such as Sabena Technics, which focuses mainly on large aircraft (Airbus Corporate Jet - ACT, Boeing Business Jet - BBJ), Stelia Aerospace Composites (VIP aircraft linings, first class seat shells), Zodiac Aerospace (world leader in safety and aeronautics systems, aviation seats and cabins), as well as SMEs such as Catherineau, a French leader in VIP aircraft interiors, upholstery-decor-developments, specializing in high-end linings, Prodec Metal, which participated in development of the Falcon, SimAir with Be ModulAir, comprehensive offer for cabin furnishings, ACH, specialized in upholstery of aircraft cabin equipment.
A coherent set of suppliers of luxury furnishings have extensive experience in complying with aeronautical requirements and strict certification standards (European Aviation Safety Agency - EASA).



© AIRBUS DEFENSE AND SPACE / INGO WAGNER

Structuring a pool of exceptional capabilities around ArianeGroup

Design and final integration of civil and military launchers, solid fuel systems, energy raw materials, structures and space equipment.

By bringing together their expertise, ArianeGroup and Safran seek to maintain Ariane 5's outstanding level of quality and reliability, while developing a family of new-generation, competitive, reliable and versatile launchers (Vega, Ariane 6 – first launch 2020), and consequently remain the global leader in communications satellite launching. ArianeGroup is inspired by space technology to offer manufacturers a set of products, equipment and services in civil and military areas. This duality is primordial to maintaining skills. Solid fuel propulsion in Nouvelle-Aquitaine offers an example: 53% defense (after-body and hot flaps for M88 Rafale engines) / 7% civil (automotive airbags, composites for wind generators and rail).

LICORNE™, a unique european biological treatment unit

Since 2014, LICORNE™ (recuperating pyrotechnic objects and natural reduction of industrial effluents), a pioneer installation in environmental terms, offers solutions for treatment of ammonium perchlorate, a major ingredient of rocket fuels, particularly to propel launchers and missiles.

LICORNE™ employs a process that exploits bacteria which transforms perchlorate and ammonium into nitrogen, and chloride. This unit, in Saint-Médard-en-Jalles, can process 300 tons of ammonium perchlorate per year, sufficient for all current needs. This provides a truly eco-responsible approach for current and future generations, enabling ArianeGroup to control the full lifecycle of its fuels.

© ESA - D. DUCROS

Structuring of a center of excellence for MOC around Bordeaux Euratlantique

Bordeaux Métropole, Economic Renewal

Large-scale urban and economic development is currently underway on the banks of the Garonne.
The Bordeaux-Euratlantique Opération d'Intérêt National, one of the most important urban projects* in France, along with the completion of the LGV high-speed train line in July 2017 (Bordeaux-Paris will take 2 hours) contribute to accelerating this development.
As an illustration of this project's appeal, major international brands have already announced their commitments for 2020.
**738 hectares, with new quarters (total constructability of 2,400,000 m²), a European business Center (450,000 m²), creation of a multi-modal transport hub and railway station/airport/rapid transit line, which will make Bordeaux the junction of south-western Europe.*

Safran Military Engines Division facilities in Bordeaux

These facilities are intended to unify Safran's teams within the military engines division (Rafale, Mirage 2000, Alphajet, NH90) with government stakeholders grouped in the Bordeaux region since 2012 (CFA, SIMMAD, AIA), and to optimize the effectiveness of the support services for military engines used by the French Armed Forces. This establishment near AIA, in charge of military aircraft engine maintenance – A400M, M2000 and Rafale – reinforces the Bordeaux center of excellence for maintenance in operational condition (MOC).

The Nouvelle-Aquitaine region aims to create a Drone Valley by 2020!

In 2010, the Regional Council inaugurated the AETOS cluster around a key company, Thales, to develop the use of UAV systems in civilian markets.
Seven years later, AETOS's scope has expanded with the enlarged Nouvelle-Aquitaine region, and has a hundred members (drone designers, suppliers of payloads, technology building blocks, telepilote trainers, operators, experts, software providers, laboratories, and universities, maintenance and testing centers). The cluster encourages collaborations on operational programs in its mission to unify the "drone community" and to join forces in national and international markets to increase cooperation among its members. This is the case of Drone City, a program focusing on the use of drones in the city, which will make Nouvelle-Aquitaine a pilot region in urban drone use.

© DPD GROUP

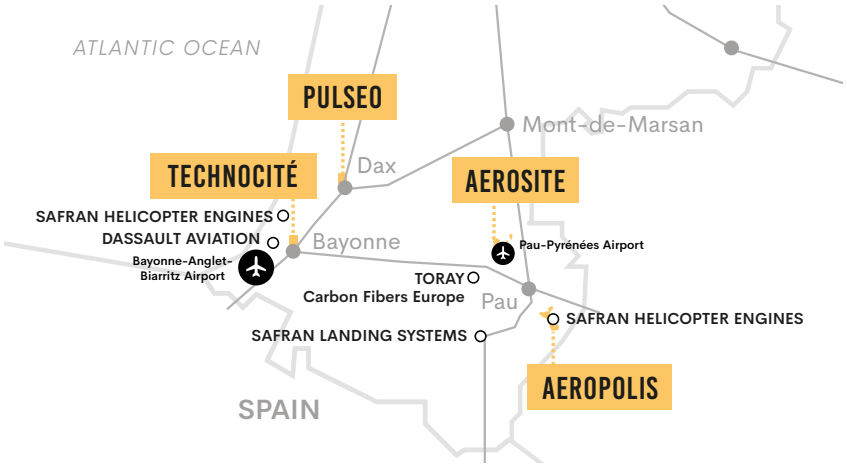
Drone Campus, for the development of new skills and training

With the creation of the Drone Campus this year (2017), AEROCAMPUS Aquitaine intends to make available its influence, its image and its network to serve the industry, boost it and continue the progress of drones in Nouvelle-Aquitaine. Drone Campus will be a real platform, bringing together several complementary infrastructures, and offering players in the drone industry ways to find new applications in geophysics, topography, precision agriculture, industrial inspection, non-destructive testing, payload transport, as well as associated training. Three broad industrial projects led by major prime contractors have already been identified for the industry in the region, and the project teams, in connection with companies of the AETOS cluster, that are currently being constituted.

SOUTHERN NOUVELLE-AQUITAINE

Safran reinforces its investments

More competitive, more economical, more reliable and less polluting



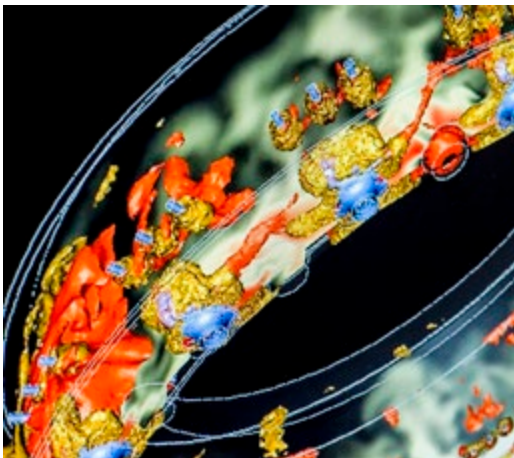
Safran Landing Systems, 40,000 landings per day!

Safran Landing Systems, world leader in the design, development, manufacture and support of landing gear systems for all types of aircraft, in Bidos, Pyrénées-Atlantiques Department, pioneered carbon brakes on aircraft, introducing a revolutionary technology that cuts weight in half compared to conventional steel brakes. The company invests substantially in research and development of new products to ensure that the next generation of equipment is even more economical, lighter, more robust and quieter (new materials, electrical technologies, monitoring service, eco-innovation)

The More Electric Aircraft: storage and management of onboard electrical energy

To address increasing electricity demands on board and the need to build cleaner, more fuel-efficient airplanes, players in the aeronautics sector are upgrading their skills in associated technologies, including storage and management of electrical power on board. **Nouvelle-Aquitaine holds a dominant position in this sector, notably with the presence of SAFT, supplier of special high value-added, lithium-ion batteries; Thales for expertise in technologies used in embedded software and systems; and Safran, a global leader in aircraft electrical wiring interconnection systems.**

The more electric aircraft, aims at gradually replacing on-board hydraulic and pneumatic circuits with electrical systems to operate piloting, flight controls, thrust reversers, cabin pressurization and engine starting.



© SAFRAN – P. STOPPA

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EGTS™, the future of aircraft taxiing technologies

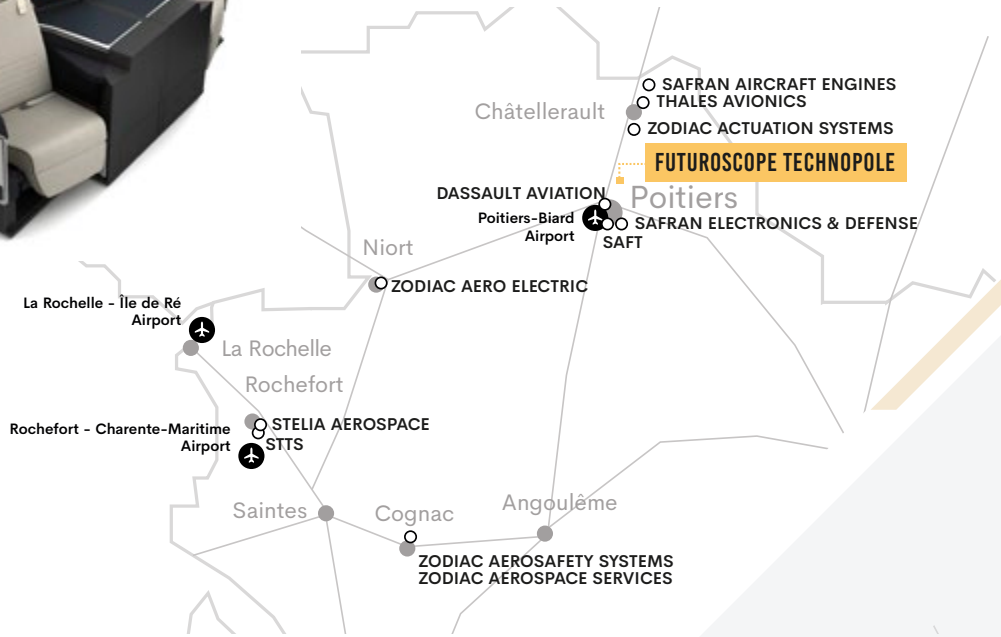
Safran is currently working with Honeywell on an electric power system for taxiing (EGTS) enabling an aircraft to move on taxiways without using its jet engines. This innovation offers many benefits: less noise, less fuel consumption and reduced CO_2 emissions during the taxiing phase (certification in 2018 and entry into service shortly thereafter).

Safran Helicopter Engines, and the factory of the future

With a shrinking global market for helicopters, Safran Helicopter Engines has led an ambitious drive towards the factory of the future in Nouvelle-Aquitaine at two sites, Bordes in the Pyrenees and Tarnos in the Landes Department.
In concrete terms, an initial automated manufacturing line for helicopter turbine blades (capacity of 100,000 per year) was implemented in Bordes; several robots and automated manufacturing units can perform all of the processing operations, thus cutting the manufacturing time of a blade in half.
This new automated line is just one part of a larger system, with the Cap 2020 program to modernize the Tarnos site (22 hectares, €60 M invested). The goal is to halve the production cycles, including through the contribution of new 3D technologies, and especially to reduce maintenance time for the company's 2,500 customers in 150 countries.
This plant will thus become the global reference center for Safran Helicopter Engines support functions.
In addition, Safran Helicopter Engines invests a significant share of its revenues – around fifteen per cent – to prepare for the future. The company is developing increasingly efficient engines – in terms of delivered power, reduced fuel consumption and lower emissions – as well as value-added services such as BOOST, the new range of integrated on-line services.

NORTHERN NOUVELLE-AQUITAINE

The 3rd element of the region's aviation hub



© SAFRAN - E. DROUIN

Safran Aircraft Engines, for civil/ military airplanes and satellites

Safran Aircraft Engines – a world leader in aircraft engines – designs, develops, produces and supports engines for commercial and military aircraft and satellites. The company also offers a complete range of engine MRO services to airlines, armed forces and other operators, as well as fleet management and operational enhancement services.

© DASSAULT AVIATION - S. RANDÉ

The aerospace industry in northern Nouvelle-Aquitaine focuses primarily on maintenance of turboprop engines, mechanical engineering, electronics and interiors, with a large number of providers of studies, engineering and inspection services in three areas:

- Rochefort, focused on airframes and cabin fittings
- Poitiers Châtellerault, presence of large engine manufacturers, machine shops, avionics and navigation systems, and ISAE-ENSMA the French Grande Ecole engineering school devoted to aerospace
- Niort, with the world leader in aircraft onboard electrical power management

Safran's maintenance and repair unit in Châtellerault works closely with AIA in Bordeaux, for the maintenance of military engines (Rafale, Mirage 2000) and civil aircraft engines (CFM 56). In total, nearly 45 engines and more than 300 modules are overhauled yearly, and more than 130,000 parts are repaired annually.
The Thales CSC center in Châtellerault specializes in the sale and repair of electronic and electromechanical spares for civil and military aerospace.

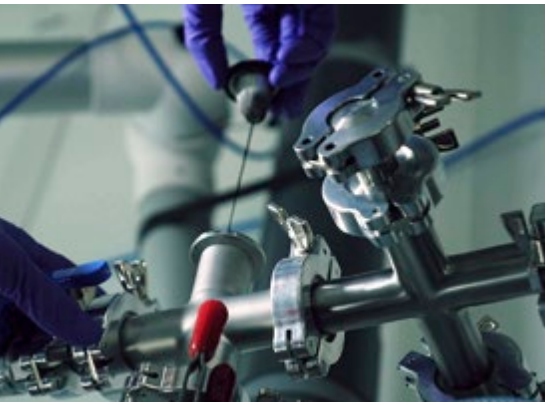
LEAP (Leading Edge Aviation Propulsion), a new generation engine with exceptional performance, developed by Safran Aircraft Engines and GE (50/50)

Safran is exploring several technological approaches to develop tomorrow's aircraft engines, which will be quieter, cleaner, more fuel efficient, and cheaper to operate. For 2050 the reduction targets set by ACARE (Conseil Consultatif pour la Recherche Aéronautique et l'Innovation en Europe) are as follows:

- 75% cut in carbon dioxide emissions (CO_2)
- 90% cut in nitrous oxides (NOx)
- 65% cut in perceived noise

LEAP already has outstanding environmental performance. In 2016, orders and purchase options amounted to 1,800 engines, bringing the total order book to 12,000 engines on December 31, 2016.

Support in industry, R&T and training



© CANOÉ

The historical installation of aeronautics and space construction in Nouvelle-Aquitaine has strongly contributed to the emergence of an internationally recognized network of skills and public / private research capabilities.
Numerous laboratories have taken into account the industrial requirements and deployed a research strategy based on key technologies that are the excellence of Nouvelle-Aquitaine, in response to market demand.
Technological R&D activities are also deployed by a network organization of skills through clusters and by implementing pivotal R&D projects (technological innovation platforms), thus sustaining collaborations among industries / researchers, engineers and technicians.
Like research, the training provided in Nouvelle-Aquitaine is a major asset for the excellence of the aeronautics and space sector.

Specialty Clusters

Nouvelle-Aquitaine & Occitanie world competitiveness cluster in aeronautics, space, embedded systems. In figures mid 2016: 859 members, including 505 SMEs, 9 Strategic Activity Domains, 921 R&D projects, 474 financed (€1.2 bn / €485 M public funding)

RPAS Cluster in Nouvelle-Aquitaine: security, inspection, agriculture, cinema, training & tests.

Photonics and microwaves competitiveness cluster in Nouvelle-Aquitaine. Alpha Route des Lasers et des Hyperfréquences co-animates with Aerospace Valley the strategic domain of activity "Pharos": photonics in aeronautics and space.

Cluster in manufacturing and logistics robotics, robotics in open environment and personal robotics.

Navigation, positioning satellite and intelligent transport systems cluster, within Digital Aquitaine.

Regional federations of aerospace actors

Aeroteam brings together players in the aeronautics, space and defense sector in Poitou-Charentes.
ENSMA - Futuroscope Poitiers, Vienne.

BAAS - Bordeaux Aquitaine Aéronautique & Spatial, created in 1983, unites 33 large companies in the defense, aeronautics and space sector, in Nouvelle-Aquitaine. BAAS, an off-shoot of GIFAS, focuses on training students for careers in aeronautics, coordinating stakeholders in the ASD sector around the Aerospace Valley Competitiveness Cluster and governance for the Nouvelle-Aquitaine region, while reinforcing the partnerships of major groups with SMEs in a process of taking down barriers.

UIMM Nouvelle-Aquitaine represents 4,300 industrial establishments in technological industries, including aeronautics (Mechanics, Equipment manufacturing, Maintenance, Metallurgy & Metalworking, Electronics / Optics...). It pilots a training and industrial skills management infrastructure through its training centers and technology platforms.

© COMPOSITADOUR

Technological innovation platforms

ALPhA NOV
Optics & Lasers Technology Center

Laser solutions for the aeronautics industry: Laser micromachining in composite materials, Surface texturation, Marking for traceability, Laser module and optical system for opto-pyro applications, Laser solutions for embedded systems. *Talence, Gironde.*

CANOE
Composites / Organic Nanostructures

R&D center specialized in formulation and production methods for semi-finished and finished product development in the field of composites and advanced materials – Formulation of thermoplastics and elastomers, fibers and composites and pre-impregnated carbon thermoplastics, additive manufacturing, printing surface treatment, characterization and nondestructive testing. *Pau, Pyrénées-Atlantiques; Pessac, Gironde.*

CATIE
Solutions pour la société numérique

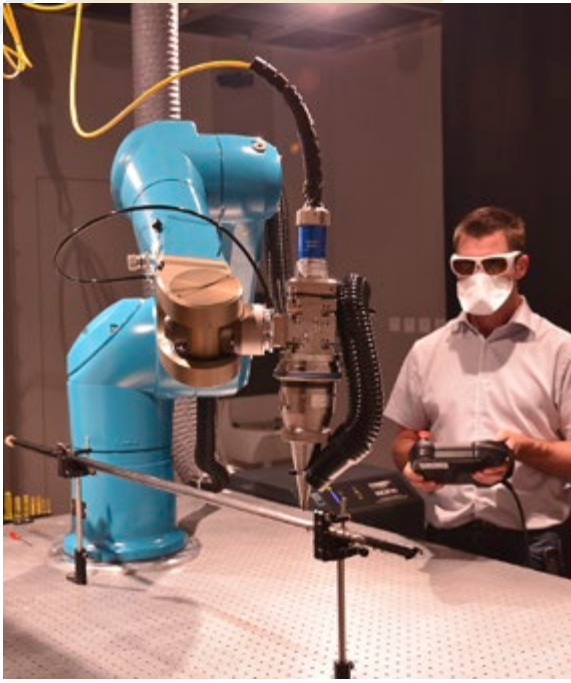
Centre Aquitain des Technologies de l'Information et Electroniques. Five technological units: human-machine interactions, digital solutions, big data and high performance calculation, analog electronics, manufacturing engineering. *Talence, Gironde.*

CITRA

CITRA - Centre d'Ingénierie en Traitements et Revêtements de surface Avancés - has developed expertise in the surface treatment chain using wet vectors, robotic mechanisms for thermal projection (flame, plasma, electric arc, HVOF), steam phase physical deposit reactor. *Limoges, Haute-Vienne.*

COMPOSITADOUR

Technical platform managed by ESTIA Institute of technology, specializing in robotic procedures for implementation of composite materials (training, applied research, technological development).
Within Compositadour, ADDIMADOUR is a brand new platform for innovation and technology transfer in metal additive manufacturing. *Parc Technocité Bayonne, Pyrénées-Atlantiques.*



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METALLICADOUR

Center of expertise and technology transfer in machining of metals, robotization of operations, friction stir welding and other metal assembly techniques, with a shared platform of 1,100 m² for SMEs and ETIs in Nouvelle-Aquitaine. *Aeropolis Assat-Bordes, Pyrénées-Atlantiques.*

pulseo

GNSS (Global Navigation Satellite System) Technological innovation based on geolocation technology and satellite applications center.
Dax, Landes.

Engineering Schools

Graduate engineering school, Arts et Metiers Paristech Bordeaux-Talence, specializing in aeronautics, space, materials for sustainable development, as well as mechanical and general engineering (Institut I2M). The school invests massively in machining processes and additive manufacturing.
A cooperation agreement between the National School of Civil Aviation (ENAC) and Arts et Métiers Paristech helps students selected by the two schools to get a double-degree in aircraft production. *Talence, Gironde.*

Group of seven engineering schools in Nouvelle-Aquitaine, among the top 15 schools designated by the magazine l'Usine Nouvelle - 14th out of 118 (March 2016) and Industrie & Technologie - 10th out of 100 (February 2016).

École Nationale Supérieure d'Électronique, Informatique, Télécommunications, Mathématiques et Mécanique de Bordeaux

Undergraduate programs in electronics, computer science, telecommunications, mathematics and mechanical engineering, networks and information systems, on-board electronics. Master's program in aeronautics and space engineering, in collaboration with Arts et Métiers ParisTech. *Talence, Gironde.*

Ecole Nationale Supérieure de Cognitique

ENSC trains engineers in the dual disciplines of Information & Communication Technologies and Humanities and Social Sciences in cognitics. Focus areas: analysis and design of Human-Machine Interfaces [HMI], Human-System integration and uses of digital technology, augmented cognition, artificial cognition with robotics and artificial intelligence. *Talence, Gironde.*

© EIGSI

School of general engineering (5-year degree programs) in design and industrialization of mechanical systems, energy & environment for transport, integration of networks and Information systems, management and engineering of industrial systems, mechatronics, logistics & organization of transport, management of supply chain and information systems. In 2012, EIGSI opened a 3-year program of engineering through apprenticeship. *La Rochelle, Charente-Maritime.*

ensil ÉCOLE NATIONALE SUPÉRIEURE D'INGÉNIEURS DE LIMOGES

Ecole Nationale Supérieure d'ingénieurs de Limoges

General, multidisciplinary engineering school, with a range of specialties, including materials science, process engineering, mechatronics and electronics. *Université de Limoges, Haute-Vienne.*

ESTIA INSTITUTE OF TECHNOLOGY

Establishment of higher education of general interest, engineer degree programs and member of the Conference of Grandes Ecoles, ESTIA trains trilingual engineers, responsible for engineering studies and methods, production and large projects. At ESTIA students can earn a Master's in IT, mechanical engineering, energy and electronics. *Technopole Izarbel Bidart, Pyrénées-Atlantiques.*

isae Institut Supérieur de l'Aéronautique et de l'Espace ENSMA

© INSTITUT D'OPTIQUE GRADUATE SCHOOL - S. EQUILBEY

INSTITUT d'OPTIQUE GRADUATE SCHOOL ParisTech

Photonics and digital, virtual and augmented reality, physics and modeling, nano- and bio-imaging. *Talence, Gironde.*

© ISAE-ENSMA

Ecole Nationale Supérieure de Mécanique et d'Aérotechnique
Top-level engineering school and R&D center of international renown, established through multiple partnerships with large companies. ENSMA programs enable graduates to develop careers in design offices and R&D, primarily in the aeronautics and space industries, and more generally in transport, mechanical engineering and energy. The curricula cover extensive areas including fluid and structural mechanics, aerodynamics, energy, thermal engineering and propulsion, materials and industrial computing. *Futuroscope Poitiers, Vienne.*

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Training Centers

The Center of Excellence label attributed to CFAI Aquitaine by Wordskills France rewards the on-going quality of its training and the efficient equipment of this technological industries training center. With four sites in Aquitaine, 30 training programs at all levels (from CAP vocational certificate to engineering degree), in the areas of metal plate-welding-fitting, maintenance, robotics, machining-design-production, materials, digital systems, aeronautics, industrial performance. Over 500 partner companies, 90% success rate in examinations in 2016, 80% employability. All aeronautical courses of CFAI Aquitaine are held in partnership with AEROCAMPUS Aquitaine in Latresne, Gironde.

Research Centers

Institut National de Recherche en Informatique et Automatique Bordeaux Sud-Ouest INRIA provides its scientific expertise to aeronautics through research in digital science and technology, computer science and mathematics for modeling, simulation and high performance calculation.Photonics and digital, virtual and augmented reality, physics and modeling, nano- and bio-imaging. *Talence, Gironde.*

Laboratoire des composites thermostructuraux. Research team under the direction of the CNRS, CEA, Safran and Bordeaux University, combining expertise in materials development, morphological and structural characterization, comportment testing, modeling and virtual materials. *Pessac, Gironde*.

CNRS research unit created in partnership with ISAE-ENSMA engineering school group and the University of Poitiers. Research topics: physics and mechanics of materials, thermal fluids combustion, mechanical engineering and complex systems. *Futuroscope Poitiers, Vienne.*

Research Institute focused on electronics and microwaves, optics and photonics, mathematics, computer science & imagery, and CAD, in the sectors of space, secure environments, new materials, energy and imaging. *Limoges and Brive, Haute-Vienne, Futuroscope Poitiers, Vienne.*

IMA – INGÉNIERIE MAINTENANCE SYSTÈMES AÉRONAUTIQUE ET TRANSPORTS

Training center of the University of Bordeaux preparing students for life cycle management in aeronautics and transports (aircraft maintenance procedures) to obtain 3-year and 5-year degrees. *Talence and Mérignac Aéroparc, Gironde.*

PYLA

Center for optical-laser engineering training, for individual or multiple companies, customized training: lasers and laser systems, optics and laser applications, laser safety. *Institut d'Optique d'Aquitaine Talence, Gironde.*

Safran Helicopter Engines Academy

Multidisciplinary training unit for support services (product maintenance-training for clients), and new professions to develop employee skills in the field of support and services. *Tarnos, Landes.*

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Universities

université de BORDEAUX

7th French University in the ranking of Best Universities in Europe 2016 by Times Higher Education. Winner of state-sponsored investment program for the future, the University of Bordeaux plays a leading role in the regional ecosystem in conjunction with large industrial groups, competitiveness clusters, SMEs, and start-ups.

Thanks to its multidisciplinary and internationalized training offer (short programs for the university technical degree, and longer programs for License, Professional License, Masters and Doctorate degrees), as well as its aeronautics and space research programs, materials of the future, optics / photonics / laser, environmental sciences, computer science / digital technologies, the University of Bordeaux is directly involved in the development of the leading companies in the region.

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

UPPA is a multi-campus, multidisciplinary university in Nouvelle-Aquitaine on four sites. The skills of its Institut des Sciences Analytiques et de Physico-chimie pour l'Environnement et les Matériaux (IPREM) in the areas of materials, nanomaterials, new generations of Li-ion batteries, have led to industrial partnerships with the big names in aeronautics and space.

Université de Poitiers

Multidisciplinary university with training and research units, including three professional Masters programs and science & technology research: aeronautics and land transport, high performance materials engineering, physics and chemistry of high performance materials.

The University of Poitiers offers a Doctoral School Science and Engineering in Materials, Mechanics, Energy and Aeronautics, with accredited partners: University of La Rochelle, ISAE-ENSMA (Ecole Nationale Supérieure de Mécanique et d'Aérotechnique), University of Limoges and ENSCI (Ecole Nationale Supérieure de Céramique Industrielle).

Université de Limoges

The University of Limoges is a multidisciplinary higher education pole, with institutes and state-of-the-art research laboratories, including XLIM (see page 20) and IPAM, specialized in the study of material transformations, occurring in the implementation of ceramic and surface treatments processes. Research is led in close cooperation with two competitiveness clusters "Alpha Route des Lasers et des Hyperfréquences" and "Pôle Européen de la Céramique".

AEROCAMPUS Aquitaine

An international-scale campus for aerospace training

AEROCAMPUS Aquitaine is an aeronautics and space campus created through the initiative of the Aquitaine Region in 2011.

AEROCAMPUS Aquitaine, anchored in a job development strategy, offers a range of initial and in-service training that seeks complementary methods of training in line with the demands from job pools to better meet the needs of business.

AEROCAMPUS also supports the aeronautics industry's export approach by providing customized training, know-how and the certification that export increasingly to international markets.

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A campus to train all types of students

- All levels for the aerospace sector from BAC PRO (school track or apprenticeship) to engineering degrees, in initial or in-service training (Bac Pro 1 year, BTS)
- Initial, ongoing, national, international, technical, non-technical, theoretical, and practical training
- A 26 hectare site, a campus with PART 147 approval, two aircraft hangars and 7,000 m^2 of educational premises
- In-service vocational training (public employees or job seekers)
- Training of foreigners or overseas training (outsourcing of major contractors in the aerospace industry)
- Reception of technical or non-technical in-service professional training courses

A campus at the forefront of new technologies and educational engineering

- Leading educational campus equipped with an immersive virtual reality room, collaborative table, 3D printer, etc.
- Development of Serious Games, A320 flight simulator and a maintenance simulator, engine bench, as well as a helicopter simulator (co-developed with AHTS - Airbus Helicopters, and Telespazio)

A campus within a partnership network through the AEROCAMPUS Cluster

- Leading network of European experts responding to the training needs of companies in the aerospace field, and consisting of 28 members
- Leading training-focused business incubator (Telespazio, Institute of welding, Diota, ESI, DMIC, Tamaplace)
- 2 cabin crew schools (hostesses, stewards): Aeroschool and Les Guyards inter-airline center
- A business campus hosting major aeronautics groups (Dassault First, Thales Université, Safran Corporate, Airbus Defence and Space)


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A campus undergoing development and diversification

- Creation of a Naval Campus, at the request of DCNS relying on expertise, know-how, and feedback from the AEROCAMPUS Aquitaine model. This future Naval Campus aims to become a reference in naval training
- Creation of a Drone Campus which will enable all types of stakeholders in drone-related disciplines, to develop new technologies and applications on a site, bringing together a large number of skills and a dedicated infrastructure (indoor / outdoor flight test facilities, test bench, offices, etc.), also in relation with training specialists


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A campus with an international focus

- Development of aeronautics training in Morocco in partnership with IMA of Casablanca, to create a veritable training hub for the entire African continent
- Creation of a school in Hyderabad, India: in partnership with Telangana State, creation of an AeroSkills School, modelled on AEROCAMPUS Aquitaine. The goal is to train future Indian aeronautical mechanics through initial and in-service training in MRO using AEROCAMPUS's PART 147 accreditation
- Development of training with Swiss Aerocampus at the Sion airport (training and exams for EASA PART 66 degree)

AEROCAMPUS Aquitaine key figures

A budget of €10.5 M

100% success rate for Bac and BTS diplomas in June 2016 with over **82% special mentions**

An increase in the number of students and a development of the offer of initial training, through the in-school track and apprenticeships

270 students

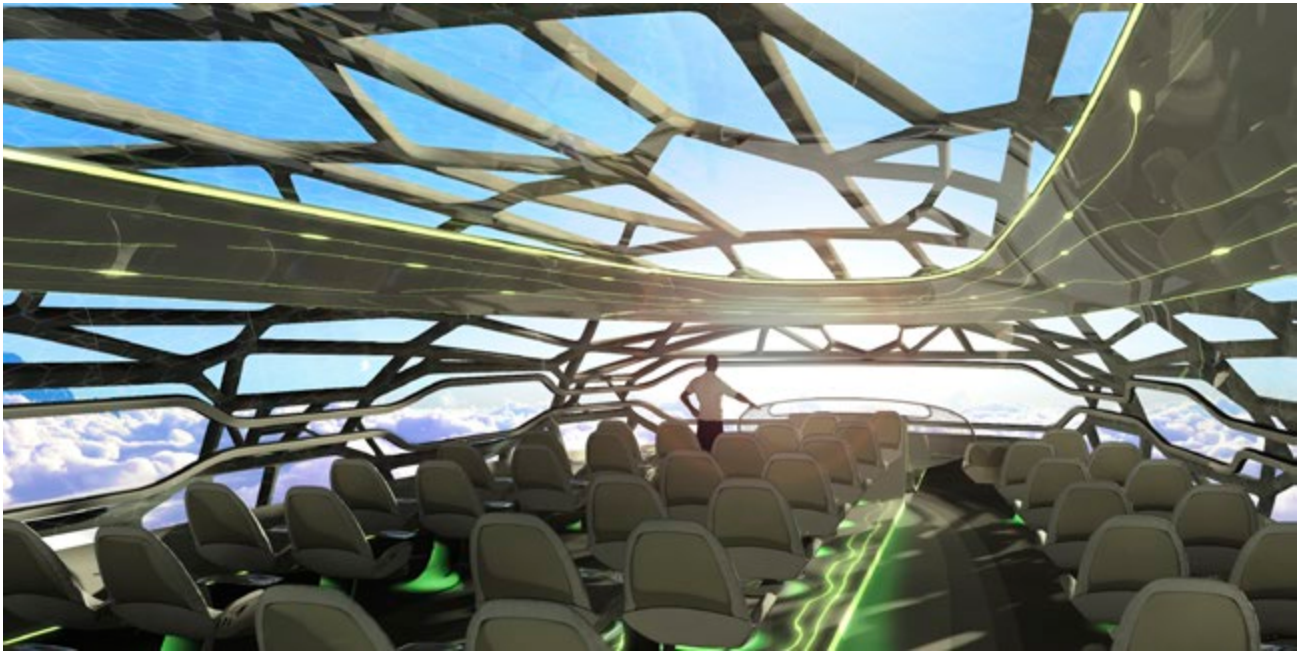
280 employees working on site, all companies combined

Apprenticeships increasing (125 in 2016, up 11%)

More than **20 schools and training centers** clustered around the campus

55,000 people received in 2016

A range of training programs for new professions



ADI
Nouvelle-Aquitaine
Agence de Développement et d'Innovation

www.adi-na.fr

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