

# NOTE RAPIDE

PARIS REGION DEVELOPMENT AND URBAN PLANNING INSTITUTE #7



LEAP-1A engine final assembly at Safran's Vitry-le-François plant. Photo: Cyril Abau/Capla / Courtesy Safran

ECONOMY

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## PARIS REGION: THE TOP FRENCH AEROSPACE REGION

**95,000**

JOB IN THE AERONAUTICS, AEROSPACE AND DEFENCE (ASD) IN THE PARIS REGION IN 2015

**2,000**

BUSINESS SITES

Sources : IAU îdF, ASTech

THE PARIS REGION, THE WORLD BIRTH PLACE OF AERONAUTICS, IS STILL HOME TO MOST NATIONAL JOBS IN THIS INDUSTRY. THE REGION'S SPECIFICITY IN THIS SECTOR IS THE CONSTRUCTION OF COMPLETE SUB-ASSEMBLIES. FOR 10 YEARS, THIS SECTOR HAS BEEN STRUCTURING AND IS NOW DEVELOPING NEW PROJECTS THAT GUARANTEE ITS FUTURE.

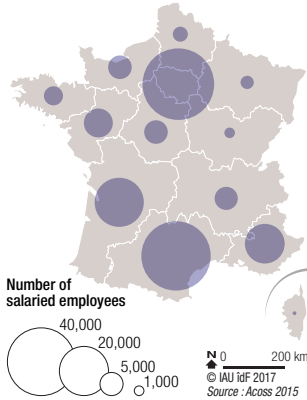
According to the latest statistics (see the box on Methodology), even after the recent merger of several French regions, the Paris region remains the leader in France in terms of the number of jobs in the aeronautics, aerospace and defence (ASD) industries, ahead of the Occitania region, as shown in the map (see next page). Aeronautics is also the region's most dynamic sector in terms of job creation and the largest contributor to regional exports. The Paris region's ASD sector has several specificities, notably the construction of complete sub-assemblies (engines, landing gear, etc.) involving numerous subcontractors. In the Paris region, for 10 years, the ASD sector has been structuring, driven by the establishment of its ASTech aeronautics competitiveness cluster, the active support of regional authorities and the development of new ventures and projects.

### STRONG REGIONAL SPECIFICITIES

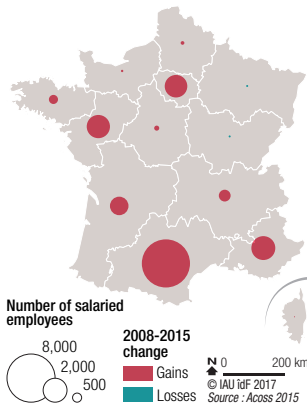
In terms of segments of the ASD industry, the Paris region distinguishes itself from the other French regions by its strong positioning in the design and supply of aircraft equipment, notably aircraft engines. It also features a high proportion of design and construction activities for navigation aid equipment and onboard electronics. Furthermore, partly due to its status as the leading airport platform in continental Europe, it has a high concentration of industrial-type heavy maintenance activities on and around its platforms generated by airlines and equipment suppliers. It is also one of the main French centres for space design and production, with a major facility located in the town of Les Mureaux. Finally, the Paris region's aeronautics industry has a strong defence component, with the design and production of military aircraft, drones, missiles and onboard electronics.

Another clear specificity of the Paris region is the presence of major national decision-making centres such as the French Defence Procurement Agency (DGA), which draws up the weapons programmes, or the French Civil Aviation Authority (DGAC), which develops the civil aviation research programmes for the next 10 to 15 years. These bodies strongly attract the research centres of large aerospace groups, but also their corporate headquarters. Moreover, the Paris region's ecosystem is home to the large French public sector aerospace research entities, namely: first, the French

**Headcount of salaried employees in the aeronautics industry in 2015**



**Changes in the number of salaried employees in the aeronautics industry between 2008 and 2015**



**THE ACTIVITY CODES OF THE AERONAUTICS INDUSTRY**

The activity codes taken into account to define the scope of the aeronautics industry according to Acoess (2015) are the following:

- 30.30Z** Aircraft and spacecraft construction
- 26.51A** Manufacturing of air navigation guidance equipment
- 33.16Z** Repair and maintenance of aircraft and spacecraft

Aeronautics, Space and Defence Research Lab (ONERA), three of whose eight research centres are in the Paris region; the French National Space Agency (CNES); the French Atomic and Alternative Energy Commission (CEA), whose military research facility is in Saclay (91); and the National Centre for Scientific Research (CNRS). Finally, the Paris region is home to two European decision-making centres: Eurocontrol, the European Air Traffic Management organisation for the safety of air travel, and the European Space Agency (ESA), which coordinates space projects at European level.

The Paris region is the leading European continental airport hub, with its two international airports as well as Le Bourget, Europe's top business airport, plus a military air base and 26 other airfields.

**A GROWING AERONAUTICS INDUSTRY**

As the number one exporting sector in the Paris region worth 10.5 billion euros in 2016 and with a positive balance of three billion euros, the results of the Paris region's ASD industry reflect a dynamic forward-looking national and global strategy. With a net gain of 3,300 jobs between 2008 and 2015, aircraft and spacecraft construction is the most dynamic industrial sector in the Paris region and one of the few to record job growth over this period. Worldwide growth in this sector is mainly based on the commercial aviation segment, from which Airbus fully benefits, whereas the spacecraft and defence segments have been growing slightly less fast. However, the recent commercial successes of Dassault Aviation's Rafale fighter aircraft have opened up fine prospects for the French defence aeronautics industry. Thus, since 2008, the French aeronautics industry has created 2,500 jobs a year on average at a national level. However, its growth in the Paris region has increased less spectacularly than in France, notably in the Occitania region (see the adjacent map). This is due to the predominant position of Airbus in Occitania with its civil aviation activity.

**A PARIS REGION INDUSTRIAL SECTOR WITH MANY SUBCONTRACTORS...**

The use of activity codes (see adjacent box) has the advantage of allowing geographical comparisons to be made on a common basis. However, it is not an entirely satisfactory way to describe an ecosystem that is greatly characterised by subcontracting, as is the case in the Paris region. With its great emphasis on the design and manufacturing of aeronautical equipment, the ASD industry in the Paris region brings together many suppliers, most of whom are not covered by the aeronautical activity codes as defined by the French classification of economic activities (NAF). Many of these industrial companies operate under activity codes related to mechanics, surface treatment, plastics processing, electronics, optics, etc. There are also numerous providers of IT services and many design offices that help design aircraft, helicopters, drones and their onboard equipment, in support of major

contractors. Furthermore, core businesses at the heart of the ASD industry do not have an activity code number that helps identify them as being related to aeronautics by using a simple statistical method. The most glaring examples of this are several industrial sites belonging to the Safran group listed under "head office activities".

Thus, a finer-grained analysis of the aeronautics sector (see box on Methodology) helps us go beyond the view afforded by economic activity codes alone and reveals the true extent of the footprint of the ASD sector within the Paris region's industrial base. We estimate that around 2,000 business sites and 95,000 workers are at the heart of, or are very actively involved in, the Paris region's aeronautics industry (see p.5 the diagram on the various components of the industry).

**... STRUCTURED BY THE MAJOR CONTRACTORS**

At the heart of the ASD industry are the manufacturing integrators, aircraft and spacecraft builders such as Airbus and Dassault Aviation, but also Safran and Thales, the main suppliers of aeronautical equipment. This presence is visible in the form of corporate headquarters, research and development centres and production activities with several large emblematic sites.

**Airbus's** presence in the Paris region is mainly in four major locations totalling almost 5,000 staff members. In addition to the group's headquarters and R&D centre in Suresnes (Airbus's headquarters will be fully relocated by 2018), Airbus's main Paris region site is in Les Mureaux (78). It is on this site that is located one of its main Defence and Space facilities, with over 2,100 staff responsible for the design and assembly of ballistic missiles and the integration of the Ariane 5 rocket, before its journey by inland waterway and sea to Guyana. Since the end of 2016, the new Airbus Safran Launchers joint-venture is also located on this site, where it designs and then integrates the Ariane 6 rocket. Airbus has another major site in Élancourt (78), which brings together the head office functions and the design office for the equipment, communication and electronic activities of the group's defence and space divisions. Furthermore, Airbus Helicopters runs a helicopter blade factory in Dugny (93) which employs 700 people.

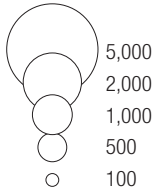
**MBDA**, a joint-venture between the Airbus group, the British BAE Systems and the Italian Leonardo company, is the world leader in the design of missiles and missile systems on its Plessis-Robinson (92) site, with 2,700 workers, which is also the head office of the company.

**Dassault Aviation** employs 4,500 people in the Paris region, mostly at its headquarters and R&D centre, where the group's fighter aircraft, business jets and drones are designed. Dassault Aviation also owns a factory in Argenteuil (93), which builds and develops the fuselages of military aircraft (Rafale) and

# THE MAIN ESTABLISHMENTS OF THE AEROSPACE INDUSTRY IN THE PARIS REGION

## Establishments of the aerospace industry

### ► Number of salaried employees



*This map only displays establishments of 100 employees and more*

### ► Represented functions



*The share of the colors is not proportional to the staff effectively involved in each of the functions*

## Other actors of the air and space ecosystem

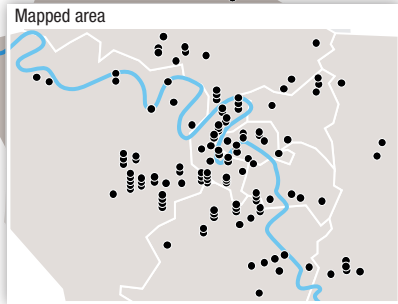
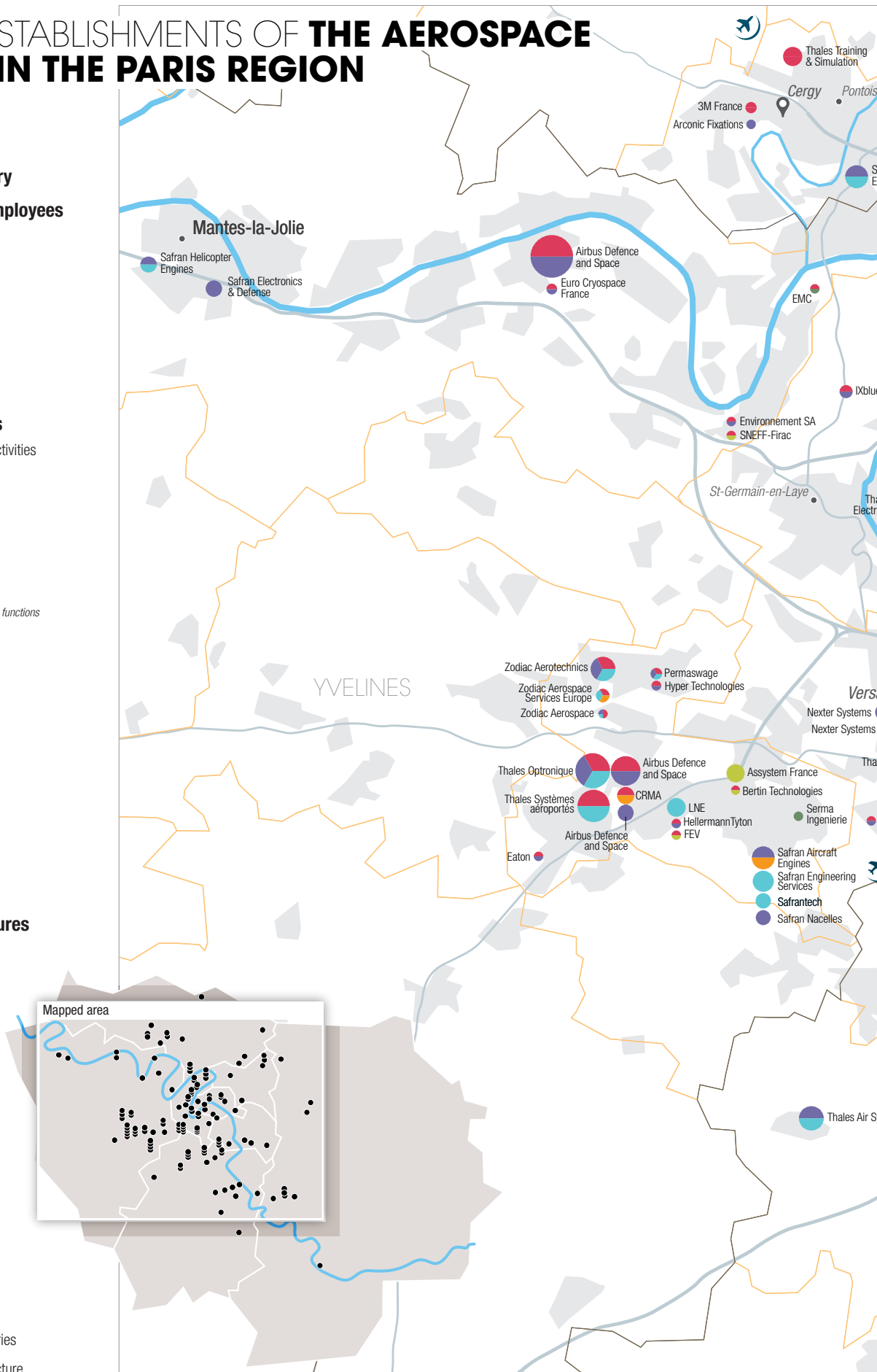
- Space operating company
- European organisation
- Public research centre
- Administration
- Competitiveness cluster
- Aeronautics incubator
- Professional organization

## Main airport infrastructures

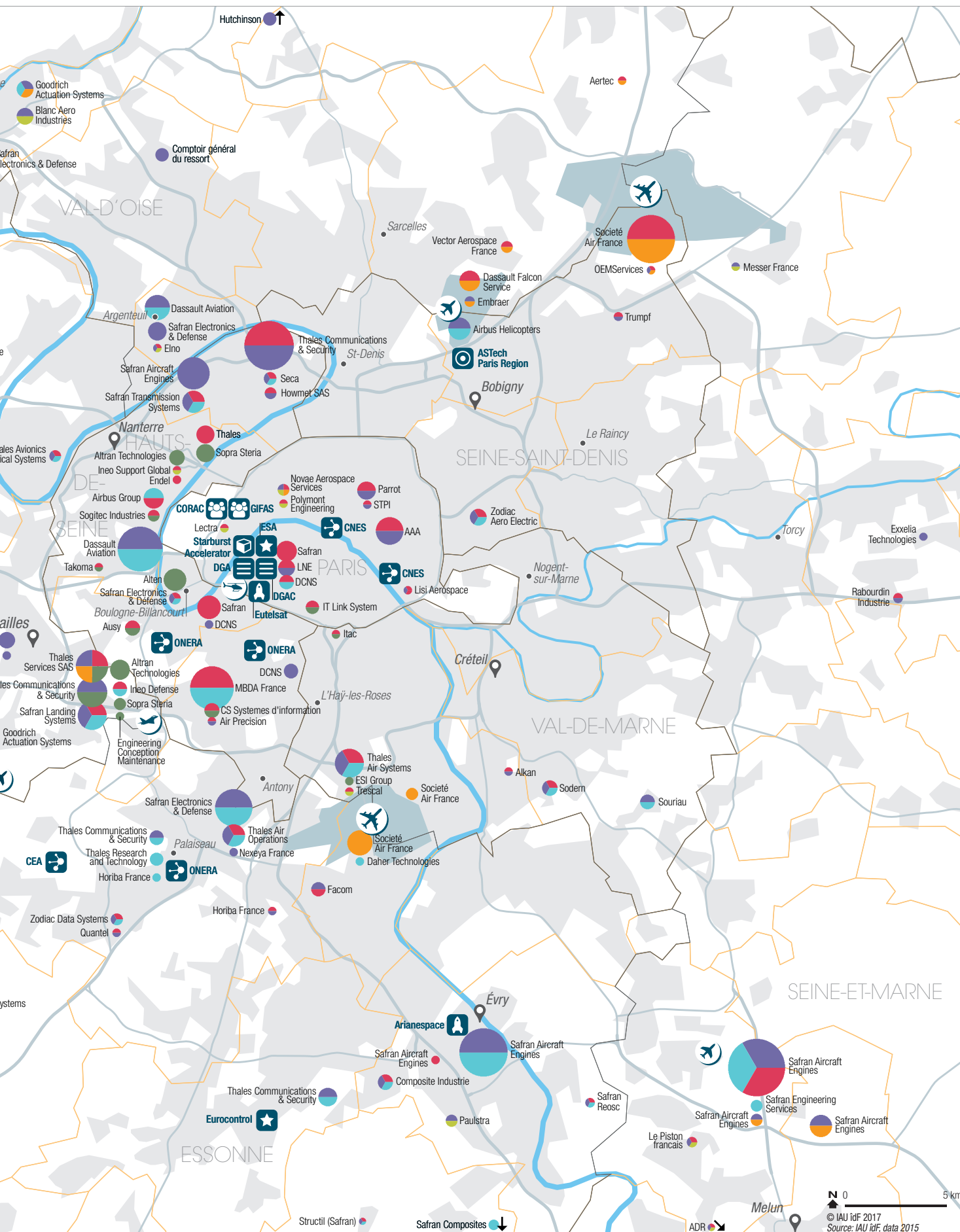
- International airport
- Airfield (business aviation)
- Military air base
- Heliport

## Background map

- Urban area
- Airport site
- Main hydrography
- Main roads
- Department boundaries
- Intercommunity boundaries
- Prefecture and sub-prefecture







civil aircraft (Falcon). Finally, its Dassault Falcon Service unit provides maintenance services for business jets on its Le Bourget site.

The **Safran** group is particularly prominent in the Paris region with 20,000 staff distributed over around 20 sites. Its activities include the Group's Paris head office, the headquarters of several business units, R&D centres, including the new Safran Tech sites in the Saclay (91) area and on the Buchet (95) site dedicated to composites and large-scale production activities. Thus, the group concentrates in the Paris region most of its flagship design and production activities involving aircraft engines, both civil and military, in which it is the world leader. The 11,000-staff dedicated to this activity are mainly gathered in the Évry (91)/Melun (77) site, the leading and most modern aircraft engine production site in the world. The site in Melun is responsible for the design, testing and assembly of the engines, which are manufactured in Évry. The site in Gennevilliers (92) is dedicated to smelting, forging and machining. Finally, on its Buchelay (78) site, the helicopter turbines are designed and produced.

Additionally, the Safran group designs and, on a smaller scale, produces in the Paris region several other subassemblies for the aircraft of many other global aircraft manufacturers. Engine power transmission systems are designed on the Gennevilliers-Colombes site, which also features an R&D unit and manufactures ejector seats. The landing gear is designed on the Vélizy-Villacoublay (78) site, while engine nacelles and aerostructures are designed in Saclay. The group's Electronics and Defence activities are mainly represented by the research centres in Cergy (95) and Massy (91), and a production site in Mantes-la-Ville (78). Safran also owns several sites for high-performance ceramics, high-precision optics, etc.

**Thales** is the other aeronautics champion in the Paris region, with nearly 14,000 workers for its aeronautical activities, spread over almost 25 sites, including the group headquarters in La Défense.

Thales specialises in the design and production of navigation guidance systems solutions, avionics, communication systems, airborne equipment, optronics, etc. The group owns a dozen sites with over 500 workers each. The main sites are located as follows: in Gennevilliers (92), with 3,500 staff in the head office and in the communication division's research activities and in the security division (electronics, embedded systems, cybersecurity); in Vélizy-Villacoublay, with almost 3,000 staff in the communication, security and services divisions (secure computer systems); in Élancourt (78) with 2,500 staff members in the airborne systems, communication and security divisions. The corporate research centre Thales Research and Technology is in Palaiseau (91) on the Saclay plateau, near the Thales Air Operations site in Massy (91, guidance systems).

**A LAND OF PROJECTS FOR THE AERONAUTICS INDUSTRY**

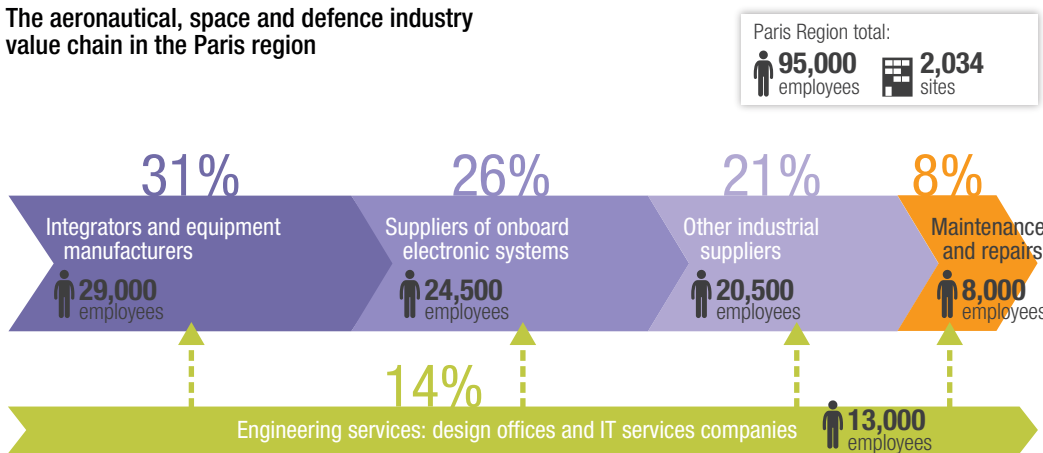
The Paris region has successfully structured and supported its territory's aeronautical activities by establishing the ASTech aerospace competitive cluster (see adjacent box) and by sustained regional support since 2006, making the ASD industry one of its priority sectors.

The press has reported on the emblematic departure of the Airbus group headquarters from the Paris region (600 staff), but it is also important to focus on the business projects and combined actions of local government authorities and the ASTech cluster (see adjacent box) in support of modernising and developing production units in the Paris region. These actions include the relocation of the Safran helicopter engine factory from Mézières-sur-Seine (78) to Buchelay (78), and the relocation of the Airbus helicopter blade factory from La Courneuve (93) to Dugny (93). Other sites have or will benefit from investments, such as Les Mureaux (78), which will accommodate the Airbus Safran Launcher teams in 24,000 sq. m. of new facilities, and the Safran site in

**THE ASTECH PARIS REGION CLUSTER**

Established in July 2007, the ASTech Paris Region aerospace and defence competitiveness cluster has initiated and developed regional leadership in technological innovation, with concrete results and the marketing of emblematic products. This leadership is based on the clarification of each player's role, favouring agile innovation within SMEs and mid-market companies, supported by large corporations. The great reputation of the ASTech cluster has spread beyond its original geographical area, with a network of 80 businesses outside the Paris region as well as abroad, thanks to the organisation of scientific symposiums and ASD Day business meetings. ASTech in numbers: 331 members including 155 SMEs, 92 large groups and 54 training and/or research organisations. A 293-million-euro R&D budget and public financing worth 125 million euros. A 70% success rate concerning calls for projects issued by the single inter-departmental fund (FUI) (66 projects financed out of 93 projects submitted).

**The aeronautical, space and defence industry value chain in the Paris region**



Melun-Villaroche (77), which has also benefited from a contract to favour its development deemed to be in the national interest. At the same time, in 2014, the Safran group inaugurated an R&D site dedicated to composite materials in Itteville (91) and, in 2015, a Safran Tech research centre on the Saclay plateau with 1,500 employees. The town of Meaux, for its part, would like to develop an aeronautical subcontracting hub based on its rich fabric of SMEs.

Projects enabling the sector to expand its activities are also worth mentioning, such as the recent creation of a drone hub on the former military air base in Brétigny (91), the only drone testing site authorised by the French Directorate-General for Civil Aviation (DGAC), or the aeronautical demonstrator facility in Bondoufle (91). Finally, the Starburst Accelerator aeronautical incubator located in the 15th district of Paris will revitalise the regional ecosystem, as indicated by the interest shown by foreign aircraft manufacturers in these young start-ups. ■

**Thierry Petit**, assisted by **Clémence Rouhaud**

*Under the responsibility of Vincent Gollain, Head of the Economics Department with the participation of Frédéric Capelle from the ASTech hub*

## RESOURCES

- Paris Region Key Figures 2017, produced by Paris Region Entreprises, the Paris Ile-de-France Regional Chamber of Commerce and Industry, and the Paris Region Development and Urban Planning Institute (IAU Ile-de-France), March 2017.
- Leroi Pascale, "L'économie francilienne en 2025 : ruptures à venir et leviers d'action", *Note rapide Economie*, n° 742, IAU îdF, mars 2017.
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- Petit Thierry, *Les lieux de l'industrie en Île-de-France. Une industrie sous contrainte, mais attachée à son territoire*, IAU îdF, novembre 2015.

### On the IAU îdF website

Find out more in the section "Creativity, Culture and Economic Development".

## METHODOLOGY

To identify the 2,000 businesses in the industrial sector, we based our research on the list of members of the GIFAS (grouping of French aeronautical and space industries) and of the ASTech cluster as well as on data bases for identifying the business lines of the companies concerned and their markets. For businesses with over 100 employees, systematic verification was carried out and, for businesses not related to the aeronautics industry about which data was available, their workforces were accounted for based on a ratio calculated according to the weight of aeronautics, aerospace and defense (ASD) activity as a percentage of the company's revenue. The 95,000 jobs identified only concern ASD industry businesses, excluding air transport and airport activities. Nor do they include the workforces of public research centres and of other large national or European organisations mentioned in this article.



Dominique Eskenazi

The integration of the Ariane 5 rocket at the Airbus Safran Launchers facilities in Les Mureaux.



Dassault Aviation / S. Randé

Unit of fuselage fit-up Rafale M9 F1 retrofit to F3 standard at Dassault Aviation facility in Argenteuil.

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