

Aeronautics, Space, Embedded Systems

AEROSPACE VALLEY

MIDI-PYRENEES & AQUITAINE

WORLD
COMPETITIVENESS
CLUSTER



WELCOME TO AEROSPACE VALLEY

WORLD COMPETITIVENESS CLUSTER OF MIDI-PYRENEES & AQUITAINE



■ Location of main establishments



3 AMBITIONS

- Consolidate the global lead in civil aeronautics
- Consolidate Europe's lead in the space sector
- Reinforce a position of excellence in embedded systems

6 OBJECTIVES

- Initiate innovations in products, services and processes through cooperative research
- Prepare the future of companies through skills enhancement
- Be in partnership with public authorities for the development of territories, of the Economy and employment
- Lead the cluster's sectors in cooperation with other players of the aerospace field
- Enrich our innovations and circulate technologies towards new markets
- Promote a sustainable development policy

- **130,000** industrial jobs
- **1,500** business establishments
- **1/3** of the aeronautics jobs in France
- **Over 50%** in the space sector
- **8,500** research scientists
- **2 of the top 3** aerospace engineering schools



World leader

- Commercial airplanes seating over 100 passengers
- High-end general aviation
- Gas turbines for helicopters
- Landing gear
- Remote sensing, data collection and localization

European leader

- Satellite design, development and integration
- Satellite station acquisition and station-keeping
- Rocket launchers and propulsion
- Satellite telecommunications and oceanography from space
- Cockpit systems
- Atmospheric reentry technologies
- Military airplanes
- Automotive embedded systems



This year will mark the adoption of a new performance contract including an updated strategic roadmap. The cluster's 3rd Era preparation has allowed us to set up a new organization of the strategic business sectors that will be completed by market commissions which role is to shed light on the members of the cluster on what our markets are expecting.

We are proud to have welcomed 100 new members within our cluster during the 12 past months and we wish to tell them how proud we are to welcome them and we appreciate their interest for our community.

Our strategy revolves around five main axis:

- **Firstly, we reaffirm the importance of collaborative research and development** for our sector supported by the FUI (public funding). This is a very important tool that must be preserved.

- **We are going to focus more on innovation in other words the convergence of a new idea and a market.** R&D is often in our field an essential element for innovation but it is only a part of it. Investments in marketing, design, that will allow commercial success of developed products and services, are an integral part of the innovation process. It will also be necessary to find means to increase the experimental development and to innovate in industrial practices themselves aiming at excellence.

- **Companies' creation remains a risky business in our sector but has to be a priority for the future anyway.** Job creation is also influenced by start-ups founding their development on innovation. Together, with incubators present in both regions, we will also carry out a process to speed up the creation of start up which develop new uses for our technologies. ESA BIC is a very important first step in this direction.

- **We wish to support in various ways the development of the cluster's members especially by developing services such as financial engineering support, access to the cluster's members network and collective actions** that will facilitate the access to consulting without forgetting our process towards export support activity, particularly appreciated thanks to the shared international volunteering for business development.

- **Finally, we are very concerned by the positioning of the cluster within its ecosystem.** Our territory gathers players who contribute to innovation and transfer processes and who interact. An efficient ecosystem relies on the acceptance of their role by each player : all of them are necessary to the efficiency of the ecosystem, but none of them can pretend to be the only cause for success.

Finally we want to especially warmly thank all the various players who contribute to convert our cluster in a decisive tool in the economic development of our territories.

Agnès PAILLARD
President

André BENHAMOU
Vice-President

EDITORIAL

AEROSPACE VALLEY TO PREPARE THE FUTURE



Cooperative projects in nine strategic business sectors

- Maintenance engineering and upholding in operational conditions
- Complex systems and integration
- Manufacture of the future
- Interaction man/machine
- Aerostructures, materials and processes
- Energy and electromechanic systems
- Air transport safety and security
- Navigation, positioning, telecommunications, observation and their applications
- Electronic, programmes and embedded systems

Pivotal projects in three transversal fields

- Economic and Industrial Development
- Research
- Jobs & Skills Needs Analysis



A global reputation in research and education...

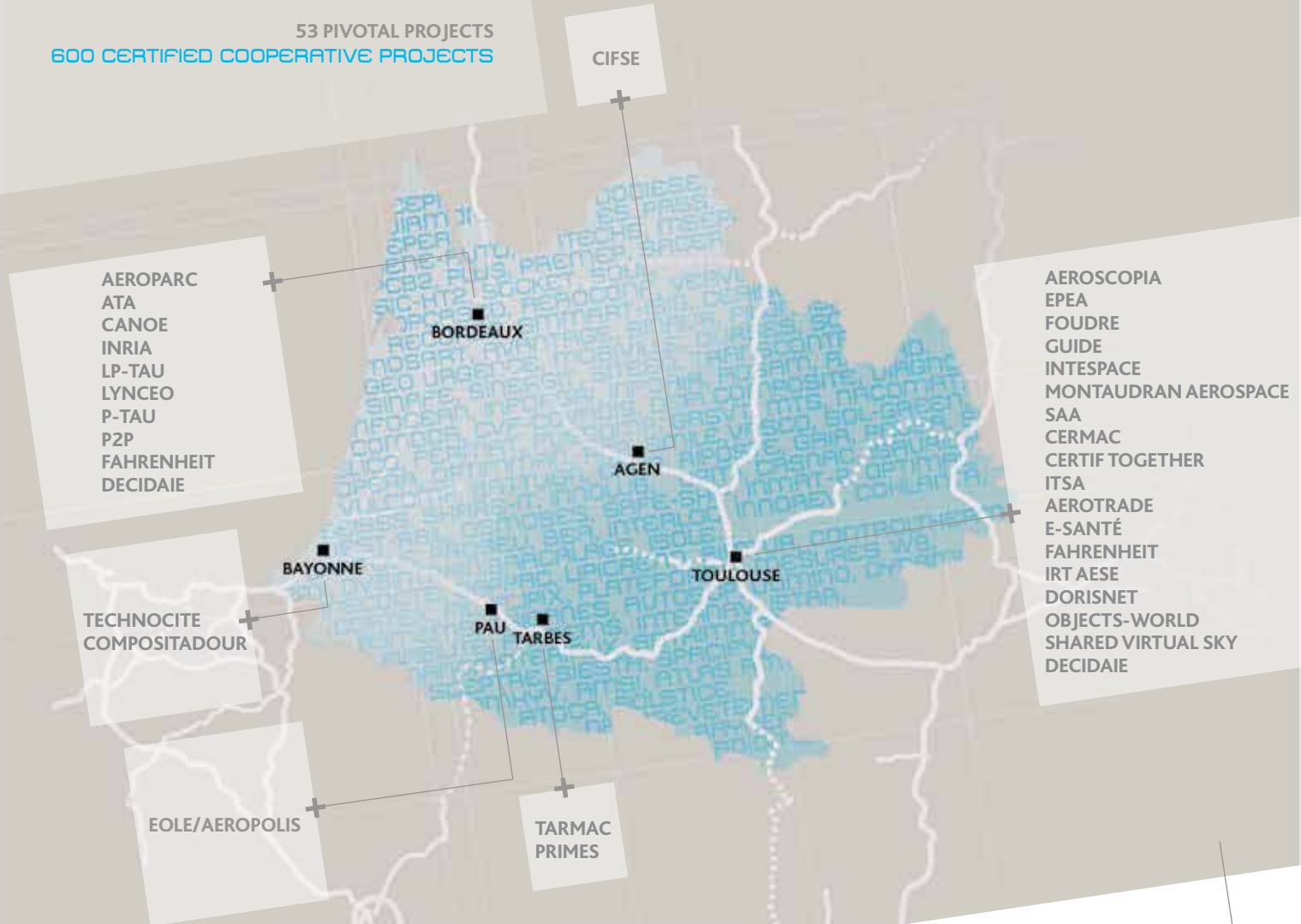
- Internationally recognized higher education: 2 of France's prestigious aerospace engineering schools: ENAC, ISAE
- Numerous specialized training programs, ranging from secondary through master's and doctoral programs (13 doctoral schools) and engineering diplomas (12 engineering school programs, 6 advanced university programs)
- Over 80 specialized public research centers
- 45% of the R&D jobs in aeronautics, space and embedded systems
- Renowned research centers and institutes, centers for technology transfer and pertinent expertise, including Arkema, AST, CEA/CESTA, CEA TECH, CERFACS, CNES, CNRM, CNRS, EMAC, Institut Clément Ader, IMS, INRIA, INP, INSA, Institut Carnot MIB, IdC, ICMCB, IFTS, IRIT, LAAS, LaBRI, LAMEFIP, LCPO, LCTS, LPCML, LPCP, LIUPPA, LMP, ONERA, PRIMES, RIS, Rhodia, RTRA Sciences et Technologies pour l'Aéronautique et l'Espace, Stockage de l'Energie Electrique, TECHNACOL, TéSA, TREFLE, TTT, etc.

Aerospace Valley covers the full range of initial and continued education programs for professions related to aeronautics, space and embedded systems, and participates in the creation of new training modules directly linked to industry needs.



A land of innovation

53 PIVOTAL PROJECTS
600 CERTIFIED COOPERATIVE PROJECTS



CIFSE

AEROPARC
ATA
CANOE
INRIA
LP-TAU
LYNCEO
P-TAU
P2P
FAHRENHEIT
DECIDAIE

AEROSCOPIA
EPEA
FOUDRE
GUIDE
INTESPACE
MONTAUDRAN AEROSPACE
SAA
CERMAC
CERTIF TOGETHER
ITSA
AEROTRADE
E-SANTÉ
FAHRENHEIT
IRT AESE
DORISNET
OBJECTS-WORLD
SHARED VIRTUAL SKY
DECIDAIE

TECHNOCITE
COMPOSITADOUR

EOLE/AEROPOLIS

TARMAC
PRIMES

OTHER PIVOTAL PROJECTS:
Incubator projects:
NEOSTAR
Assistance to SMEs:
ADER, AEROTEC
Economic intelligence:
INTELLIMIP
Continued education:
CLUSTERA, Interactive catalog...
National projects:
OPEES/POLARSYS, BCMS

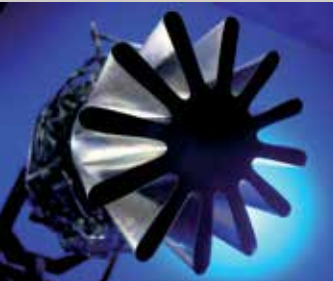
THE AEROSPACE VALLEY ASSOCIATION

The Aerospace Valley Association was created on July 13, 2005 to promote international development of the Aeronautics, Space and Embedded Systems Competitiveness Cluster in Midi-Pyrenees & Aquitaine, which received its seal of approval as a world competitiveness cluster from the French government on July 12, 2005.

The association is made up of companies, research centers, training centers and institutes of higher education, involved in these sectors in both the Midi-Pyrenees and Aquitaine regions.

In 2013, the association had 620 members, including 350 SMEs. The General Assembly is made up of seven collegial boards (large corporations, SMEs, training centers, research centers, economic development organizations, local government authorities, professional organizations and associated partners), with the first four making up the cluster's project certification committee.

The purpose of the executive committee – composed of board members, the association's operational management representatives, strategic business sector and transversal field managers, representatives from training, research and economic development organizations – is to present a general strategy for the cluster to the board of directors and to manage its implementation.



AEROSPACE VALLEY LEADERS



Aeronautics

Airbus, Airbus France & Airbus Military

World headquarters
Design offices, final assembly of the Airbus A320, A330, A340 and A380
Design and development of the A400M military transport and the A350

Air France Industries

The world's second-largest multi-product MRO provider

ATR

World headquarters
World leader in 50-74-seat turboprop airplanes (ATR 42 and 72)

Daher-Socata

A world leader in light aircraft for civilian and military markets

Dassault Aviation

World leader in business aviation (Falcon), manufacturer of fighter planes (Mirage, Rafale)

EADS Sogerma

1st tier supplier of airframes for regional airplanes (ATR)

Goodrich Aerospace Europe

European headquarters
A world leader in systems and services for power plant integration

Latécoère

A world leader in airframes, wiring and embedded systems, engineering and services

Liebherr Aerospace Toulouse

Holding company headquarters
A world leader in aircraft air systems



Messier-Dowty (Safran group)

World leader in landing gear design, manufacture and customer support

Microturbo (Safran group)

European leader in compact gas turbines

Ratier Figeac

(UTC, Hamilton Sundstrand group)
A European leader in propellers, cockpit, and actuator equipment

Sabena Technics

A major aviation MRO provider

Saft

World leader in Ni-Cd, Ni-MH and Li-ion batteries for civil and military aviation

Turbomeca (Safran group)

World leader in gas turbines for helicopters

Space

CNES, French Space Agency, Toulouse Center

Implementation of France's space strategy



EADS Astrium Aquitaine

European specialist in rocket launchers and orbital infrastructures

EADS Astrium Toulouse

A world leader in the design and manufacture of satellites and space systems

Météo France

Central meteorology operations department, Ecole Nationale de la Météorologie (meteorology school), Centre National de Recherche de Météo France (research center)

Snecma Propulsion Solide

(Safran group)

European leader in solid rocket fuel for ballistic missiles and space launchers
Technical excellence center for thermo-structural composites

SNPE Matériaux Énergétiques

Solid rocket fuel for space and strategic applications

Thales Alenia Space

A world leader in design and manufacture of satellites and space systems

Embedded Systems

ACTIA Group

International group specialized in automotive electronics and telecommunications

Alstom Transport

Center of excellence for railway power modules, equipment and drive-trains

Continental

One of the world's leading automotive equipment makers, development and manufacture of innovative products and systems

Freescale Semiconductors

Major supplier of embedded semiconductors

Honeywell Aerospace

Maintenance of avionics equipment, and aircraft onboard systems

Rockwell Collins France

French headquarters
Electronic products and systems for aeronautics, defense and IT networks

Thales Aeronautics Division

A world leader in avionics solutions, cockpit equipment and electronic systems



Testing

DGA Techniques Aéronautiques

Specialized in thermal mechanics, aerodynamics, electromagnetism, and simulation of complex systems, site of the Laser Mégajoule

Ministry of Defense

(AIA, CAEPE, CEAT, CELM, CEV, CEVAP)

Test centers and industrial plants for civil and military aviation

ONERA

Leading French center for aeronautics and space studies, research and testing



Europe's leading qualitative offer of equipment, design and subcontracting

2MoRO

Consulting for information systems organization in aeronautics and defense

Aérofonctions

Composite structural parts, equipment integration

Aéro Team group

(Asquini, Couso, Gentilin, Sofop)
Precision mechanical engineering, tooling and subassemblies



Aquitaine Electronique

Design, development, manufacture and integration of civil and military aeronautics applications



ASTF (ALCEN group)

Mechanical, avionics, sheet-metal, airframe subassemblies

Aubert & Duval

(Fortech Airforge group)
Forge work, stamping, die stamping, metalwork for aeronautics

Boostec Industries

Developer and manufacturer of high-performance ceramic products

Creuzet Aéronautique

Complex mechanical parts for airframes and engine components

EADS Composites Aquitaine

Composite structural parts

Epsilon Ingénierie

European leader in thermal engineering

Equip'Aero

Systems equipment manufacturer, mechanical parts and assemblies, maintenance



Esterel Technologies

World leader in tools for development and verification of critical embedded systems

Exameca

Mechanically welded subassemblies



FEDD

Manufacture of complete electronic boards and assemblies

Figeac Aero

Milling and assembly of aeronautical parts

Forest-Liné

Manufacture and installation of large industrial production systems



Ingeliance group (Altep,

AXS Analyse de structures, Interface)

Engineering of products and systems, projects and processes, documentary and communication engineering, technical and methodological evaluation

Lauac

Leading European subcontractor for subassemblies and airframes

L'Électrolyse

Surface treatment and coatings

Magellium

Imaging, robotics, geomatics and satellite navigation applications, observation satellite ground segments, systems architecture

Maz'Air

Development and manufacture of work packages and aeronautics products

Mecahers

Design and manufacture of mechanical and composite parts and subassemblies, maintenance of cabin components

Micro Mécanique

Pyrénéenne (MMP)

Development, production and tests of complex hydraulic assemblies

Navocap

Embedded equipment, integrating localization and radio communications technologies

Potez Aéronautique

Airframe assemblies and structures for civil and military aviation, structural repairs

Serma Ingénierie

Embedded electronic systems

Sigfox Wireless

The first cellular network operator dedicated to M2M and IoT

Technofan (Safran group)

World leader in low-pressure ventilation systems and equipment



Design offices, engineering, IT

All of the major players are present in the Aerospace Valley regions, including Aeroconseil, Ajilon Ingénierie, Akka Technologies, Altran Technologies, Assystem, Atos Origin Intégration, Cap Gemini, Cimpa, CS Communication et Systèmes, ECM, Eurogiciel, GFI, ISIS MPP, Segula Aerospace, Sogclair, Spie Sud-Ouest, Steria, Teuchos, etc.

Aerospace Valley brings together the major players in engineering and consulting in a range of sectors including technical sciences, program management systems, industrial engineering and production. With offers organized around leading programs in aeronautics and space, these industries participate in product design, industrialization and logistical support.

AEROSPACE VALLEY ANTICIPATES TECHNOLOGICAL EVOLUTIONS BY MASTERING KEY TECHNOLOGIES:

- High-performance composite materials
- Systems and flight controls for manned aircraft, satellites and UAVs
- Combustion
- Electrical or hybrid energy storage and management
- Supply-chain and concurrent engineering
- Technical data exchanges
- Remote maintenance
- Safety and dependability
- Operational security
- Environmental ruggedness
- Real-time software
- Integrated architectures
- Interaction human/system and cognitive science
- Scientific calculations
- Micro and nanotechnologies
- Embedded systems
- Telecommunications

X
Share.
Innovate.
Win.

The association that
stimulates **competitiveness**

www.aerospace-valley.com



toulouse
métropole
COMUNE DE TOULOUSE



LES PÔLES DE
INNOVATION ET DE
COMPÉTITIVITÉ
INSTITUT NATIONAL DE LA RECHERCHE AÉROSPATIALE



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