

AEROSPACEcluster

IN RHONE-ALPES




***Rhône-Alpes,
a different perspective on aeronautics***





Summary

- 
- **General presentation**
 - o Scope and products
 - o RDT Capacities
 - o Customers
 - **Services to primes**
 - **Companies strengths and Know-how**
 - **Contact**
 - **EN/AS/JISQ 9100 certified Bodies**



The network of Rhône-Alpes Aerospace suppliers

Objective : business development

To help companies win business in a global market

→ Membership of both large and small firms

→ Services

- o Networking
- o Export Opportunities
- o Meet the Buyer Opportunities
- o Connect large and small firms
- o Productivity / Process Improvements
- o Learning & Skills
- o Access to Technology
- o Collaborative projects support
- o Drawing together Bid Teams to address clients' needs

→ Launched in December 2004

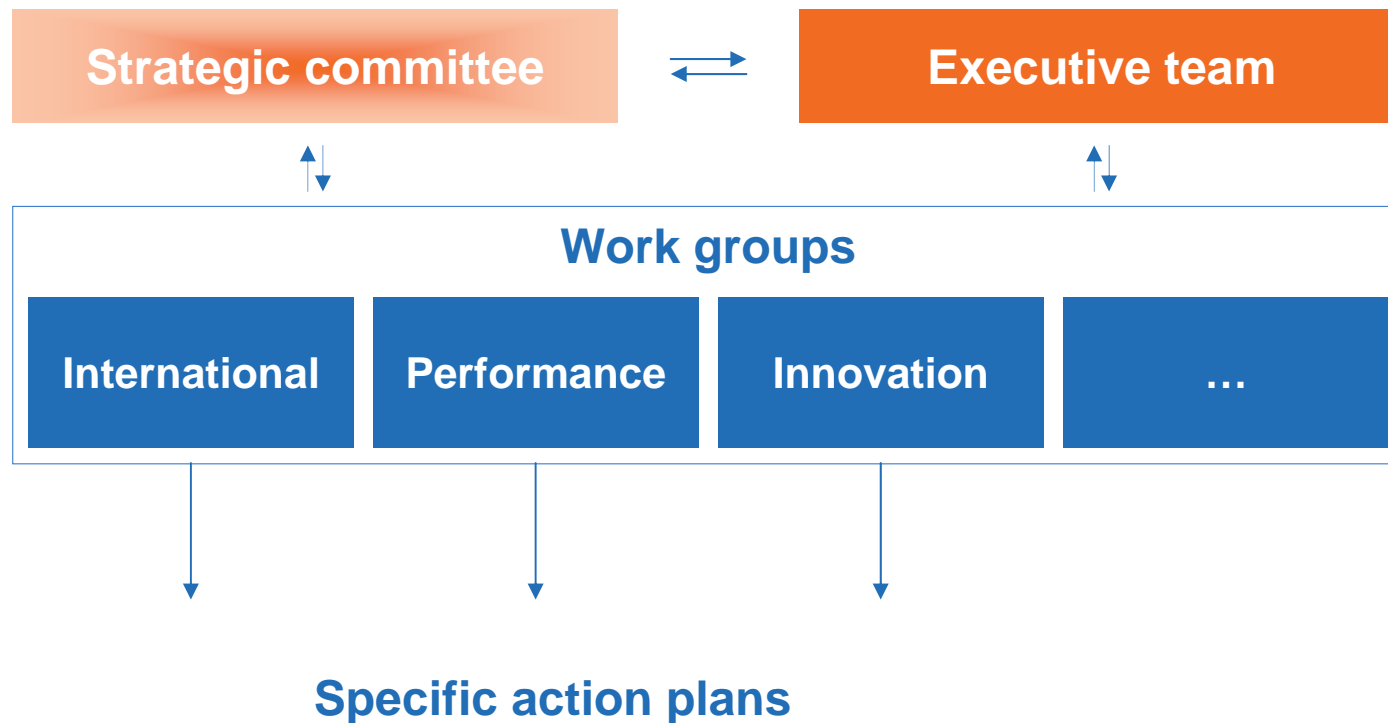
→ Supported by regional government

Rhône-Alpes, a different perspective on aeronautics





Structure





A network of innovative companies

→ Rhône-Alpes competitors

- o 500 companies including
 - 20 GIFAS members
 - More than 200 specialists (Tier 2 / sub-assemblies or complete units)
- o R&D capacities
- o Conception and production as risk-sharing partner
- o Employees: 16 000, Turnover: 1 Md€
- o 60 EN/AS/JISQ 9100 certified bodies (see annex)

→ 4th European region for research and technology

- o More than 40 laboratories and 5 technical centres linked to prime contractors

→ Initial and continuous professional training

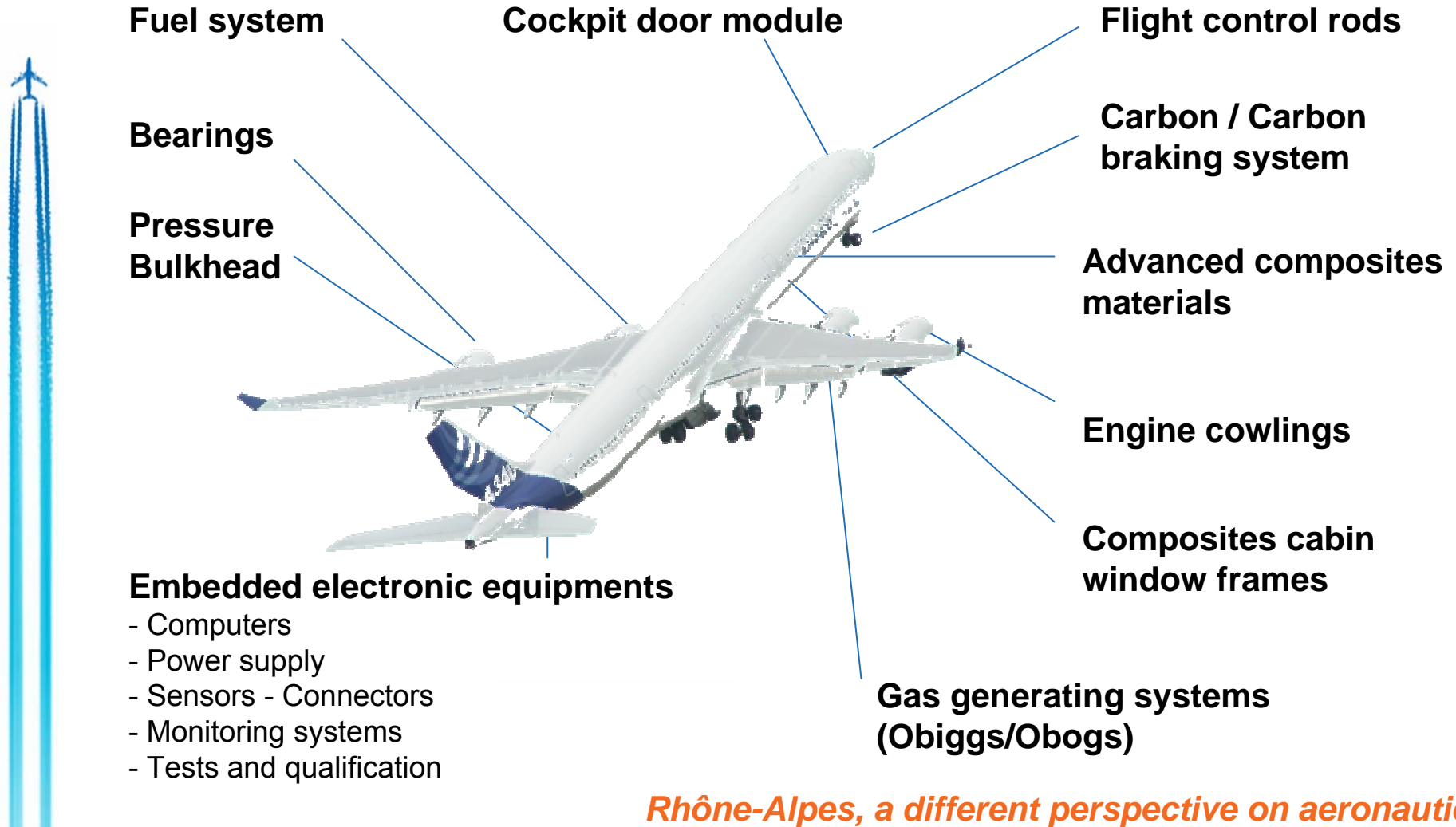
→ Infrastructures

- o Lyon St Exupery, the 2nd French regional platform (more than 6 M passengers)





Products and services





Products and services

Complete workshops realization

Assembly post

Composites

- Autoclaves and ovens
- Special tooling
- RTM systems

Cooling system



Equipments tests and qualification

- Climatic, vibratory, mechanical ...
- HALT
- CEM

Special machines

- Composites machining
- Large components
- Welding systems

Tests benches



Geographical area



- Messier Bugatti - Safran Group
- Eldec France - Crane Aerospace
- Hexcel Composites
- Nief Plastics
- SunAero
- Adeneo

- Duqueine Composites
- Hexcel Reinforcements
- MSA Gallet

- Dassault Aviation
- SNR Aerospace
- Sensorex
- Alcatel Adixen

- Intertechnique - Zodiac Group
- Sorome
- Alcoa Fastening Systems
- Thales Angénieux



- Timet
- Onera

- Thales Avionics
- SKF Aerospace
- Alcatel Space
- Efitam - Groupe ITI
- Crouzet Automatismes
- Survey Copter

- Thales Avionics LCD
- Radiall
- Porcher Industries
- Air Liquide
- Alcan Group

Rhône-Alpes, a different perspective on aeronautics



The 4th European region for RDT

Main competences

- Combustion
- Acoustics et turbo-machinery
- Vibratory phenomenon
- Aeronautical structures
- Numerical system design
- Composite materials structures analyze and design
- ...

- FP partners (IP, streps)
- Work packages leaders
- Linked with aerospace industry

Example :

- Aero-acoustic simulation of systems subject to high frequency vibrations
- Simulating acoustic comfort in the passenger compartment,
- Thermo-structured compound fatigue at high temperature
- Improving aerodynamics by reducing drag
- Studying how complex mechanical parts become damaged
- Developing impregnation processes for textile structures to give lighter skins
- Studying multi-material assemblies: metal/metal, ceramic/metal
- Studying aluminium alloy bimetallic parts with solid titanium inserts
- ...





Turned towards market needs



Market needs \ Labs competences	Lightening	Comfort	Conception « souple »	Aerodynamics	Security / Safety	Control / Securisation	System reliability	Harsh environment
Materials and process	✈	✈	✈					✈
Electronics (2)		✈	✈		✈	✈	✈	✈
Sensors (3)	✈	✈	✈		✈	✈	✈	✈
Mechanics and assemblies	✈			✈	✈		✈	
Acoustics et vibration		✈			✈		✈	✈
Thermics		✈				✈		✈
Rupture / damage					✈		✈	✈
Fluid mechanics And aerodynamic		✈		✈				✈

(1) composites, alliages légers, textiles,... élaboration, mise en forme, transformation

(2) Electronique embarquée, conversion d'énergie...

(3) Capteurs : optique, métrologie

(4) Formes complexes, fonctions intégrées...

(5) HT°C, corrosion, fluage...




Programs et customers

- **Airbus family** (A300, A310, A318, A319, A320, A321, A330, A340, A340-500/600, A380),
- **Dassault** (Mirage, Rafale, Falcon 7X),
- **Eurocopter** (NH90, Tigre),
- **Boeing** (767-300/300, 777LR, 777-300ER et 777-200LR, 787),
- **Bombardier Aerospace, Embraer, Agusta, Alenia, ATR** (ATR42/72-500),
Sikorsky, Bell, Bombardier Canadair, Casa, Eurocopter, Falcon, Gulfstream, Jetstream, Saab, ...
- **Engines : Snecma/CFMI, Turbomeca, Rolls-Royce, GE, P&W**
- **Liebherr Aerospace, Messier Bugatti, Latecoere, Goodrich, Thales, Sagem, MBDA, Ratier-Figeac**




Services to primes

- 
- **Procurement departments (buyers)**
 - To short-list the companies answering your specific needs and requirements
 - To draw Bid Teams to address your needs

 - **RDT and engineering services**
 - To connect you with partners providing the right technology, know-how
 - To support your collaborative projects involving Rhône-Alpes labs and SMEs



Regional companies strengths

- 
- ➔ **One stop shop : to lead complete WP**
 - ➔ **Agile response to customer needs**
 - ➔ **Diversified portfolio of activities**
 - **Low dependence** to aeronautics cycle
 - **Solidity** of the bodies
 - **Experiences acquired** from automotive and railways markets
 - **to manage production ramp-up,**
 - **to guaranty quality, costs, lead-times objectives**
 - ➔ **Technical and technological skills**
 - Mechanical Engineering, mechanics and assembly technologies
 - Electronic (embedded, power conversion) and Electrical Engineering
 - Composites and Plastics Technology
 - Technical textiles technology
 - Acoustics and vibration



Suppliers core competencies



- **Micro Machining**
- **Mechanics**
- **Surface treatments**
- **Electronics**
- **Composites and plastics technology**
- **Tooling**
- **Noise and Vibration**
- **Engineering**



Micro machining



→ Products :

- o Precision parts - Sub-units, units

→ Complete offer

- o Procurement (raw materials and parts) -
Treatments (TS / HT) - Control - traceability
- o Flexibility, reactivity

→ Means

- o NC machining - 5 axis
- o 0.5 up to 250 mm
- o Small and medium series - Assembly of sub-units
- o DAO, FAO, GPAO

→ Materials

- o Aluminium and alloys, Stainless steels,, nickel
alloys, titanium alloys, inconel ...

→ EN 9100 suppliers

- o SUPERMETAL
- o ANPER
- o GMP INDUSTRIE
- o MANUDEM S.A.
- o MDV
- o RABAIN SA
- o SIS DECOLLETAGE
- o SIGNAL ARTRU INDUSTRIES
- o MONT BLANC PRODUCTIONS
- o MOPTY INDUSTRIE SARL
- o PEZET DECOLLETAGE
- o MARCEL INDUSTRIE
- o DECOPREM
- o ROCH MECANIQUE
- o ...



High precision mechanics

→ Conception and realisation of complex parts - Sub-units, units

- NC machining - 5 axis
- Small and medium series
- All raw materials

→ EN 9100 certified bodies

- AEP : Precision gearings
- Borrelly : Spring washers
- Erma 38 : Precision mechanical
- ITM : High precision mechanics.
- MDV : Fine mechanical
- Proform S.A. : Tubular systems
- Suchier : Mechanical assemblies
- Alcoa Fastening Systems : Screw fastenings
- CBP : Mechanical Machining
- Andre Laurent : bolt and fasteners
- Marcel Industrie : Mecano-welding, assemblies
- Novaressort : Springs
- Sorome : Mechanic parts
- Vignal Artru Industries : Small Mechanics

→ Forging :

- FMDL : Open die forging or ring rolling
- Setforge : Titanium forged parts (Hot and cold)

→ Assembly technologies

- Laser welding : Laser Rhône-Alpes
- Electron Beam Welding : Techmeta (EN 9100 and Nadcap certified)

Rhône-Alpes, a different perspective on aeronautics





Treatments

→ Heat Treatment

- o **Bodycote** : Heat treatment, HVOF, PVD
- o **Thermi Lyon, Thermi Loire** : HT, Vacuum deposition, PVD, CVD, long parts
- o **Praxair Surface Technologies** : Coatings (plasma, HVOF)

→ Surface treatment

- o **Prebet** :
Aluminium treatments : OAS, OAC (BF5), OAD
- o **Modertech Industries** (ISO 14001, EN 9100 en cours)
Steel, Cast Iron, stainless steel, Aluminium, Titane / OAS, OAC, OAD, OA Titane,
Chromatation, phosphatation, passivation Inox ...
- o **Best In Class**
Super Finishing of surfaces of metallic parts using a micro-machining process
- o **HEF / Techniques Surfaces**
TS and RDT on TS



Electronics

→ Equipements manufacturers

- o **Embedded Solutions** : Slat (Power-supply equipments), Gorgy Timing (Synchronising systems), Adeneo (Calculators, Power electronics, Qualification and testing tools), Eurotech, cybersis, Centralp Automatismes (calculators), Sensorex (Measurement systems, sensors), A2E technologies - Enertronic, Crouzet, Eldec France, Ecrin Systems, Kulite
- o **Chips** : Dolphin Integration, E2V (Atmel), MEMSCAP

→ Design, routing, cabling of electronics cards

- o Techci Rhone Alpes, Ardelec Technologies, Pige Electronique, Az Electronic, AEL Electronique, Icra Industrie, Simep Roussin

→ Connectors

- o Radiall (coaxial), Amphenol (optical fiber), Nicomatic (CMM micro connectors)

→ Software

- **PolySpace Technologies** (embedded software validation / detection of run-time errors)
- **Technodigit** (reverse engineering) **Adeneo** (embedded software)
- **Data Pixel** (metrology) **Temento Systems** (Debug Solutions)
- **Imagine** (virtual system analysis)





Composites, plastics

→ **Materials : composites fibers and TUT**

- o Hexcel Composites, Porcher Industries, CTMI, MDB Texinox, LTC ...

→ **Technologies : Moulding, RTM, Injection, forming, Thermo-compression, Drape forming**

- o Courbis Composites, Duqueine Composites, Vision Systems, Samac

→ **Carbone Machining**

- o Suchier

→ **Tools**

- o Spiraltex : Overbraiding machines
- o Corima Modelage : Composites modeling
- o Daxen, Aeroform France : Autoclaves, ovens and heating equipments
- o Isojet Equipements : RTM injection units
- o HP Composites : composites tools

→ **Plastics (Injection, Moulding, Thermo- compression, Thermoforming)**

- o Nief Plastics, AIP, Astic, Transformers, Courbis Plastics, Exsto, 3P, Portelli Productions, Rhone Moulage Industrie

Rhône-Alpes, a different perspective on aeronautics






Tooling, tests

→ From machining units to complete Workshops

- o **NC machining centres** Le Creneau Industriel (soft materials : Al, composites, plastic...)
Dufieux Industries (Machining process for fuselage panels)
PCI (High Speed Machining machines)
- o **Special machines** Tardy, SMP, SMOC Industries, Berthiez
- o **Complete Workshop** Courbon Productique (Robotics, vision control)
- o **Moulds and models** Corima Modelage (Electroforming Ni mould (Lay up tool for prepregs)
MMD (Mould and models)
- o **Cutting tools** Desgranges Outils Coupants
- o **Cooling systems** Soprano
- o **Lifting and conveying systems** REEL
- o **Testing and commissioning of production equipment** Vai Clecim
- o **Climatic and vibratory tests** Environne'tech, Sopavib, adetests
- o **CEM** Metracem



Noise, Vibration

- 
- **Measurement in Harsh environment**
 - **Identification of sounding and vibratory sources**
 - **Noise level prediction**
 - **Numerical simulation and solutions computing**

- **Engineering** 01dB-Metravib Acouphen
 Vibrattec Cedrat
 Fluorem (CFD)
- **Measurement** AD ingénierie
- **Tests and trials** Environne'tech Sopavib



Engineering

→ Mechanical design and engineering

- o Acrotecna
- o Berlioz Industrie
- o Idestyle Technologies
- o BSMA
- o AKKA Ingénierie
- o Auxitec Industrie
- o Espace
- o Informatique Homme Machine
- o Arob@S Technologies

→ Electronics design and engineering

- o Adeneo (embedded electronics)
- o Faure Ingénierie
- o Geser
- o S.Pace
- o LGM (logistic support)



Rhône-Alpes primes



Messier Bugatti
200 employees

Carbon-carbon breaking system

SKF Aerospace
400

Bearings, Fly-by-Wire equipments, Rods

Thales Avionics
650

Avionics for helicopter and navigation system

Intertechnique
200

Fuel system

Dassault Aviation
550

Mechanics, hydraulics and electric flight control system



Contact

Frédéric ANTRAS

Aerospace Cluster Coordinator

Tél. : +33 472 114 331

e-mail : contact@aerospace-cluster.fr

Website : www.aerospace-cluster.fr

ACCUEIL ACTUS OFFRES / COMPETENCES LENS CONTACTS ESPACE PRIVÉ

Des actions pour renforcer votre performance

AEROSPACE CLUSTER, UNE AMBITION PARTAGÉE...

- Développement commercial et International
- Management de la performance et innovation organisationnelle
- Innovations technologiques

Agenda

- Aeromart 2006
Du 29/11/2006 au 30/11/2006
- Entretiens Jacques Carbon : Clusters, Groupes et Sites de compétitivité
Le 4/12/2006
- [Groupe de travail] Devage à avec de nombreux prestataires
Le 14/12/2006

English version



EN/AS/JISQ 9100 Certified Bodies





EN/AS/JISQ 9100 Certified Bodies (1/7)

Company	Scope	Address	
ABB Entelec	Design, industrialization, production and sales of microswitches, limit switches and elapsed time indicators	10 rue Ampère	CHASSIEU
ABB Entelec	Design, industrialization, production and sales of microswitches, limit switches and elapsed time indicators	ZA la Boisse 300 rue des Prés Seigneurs	MONTLUEL
AEP	Manufacturing of precision gearings in complete supply	14 Rue des Frères Lumière	CHASSIEU
Alcoa Fastening Systems Montbrison	Manufacturing, direct sales and internal transfer of screw fastenings for aeronautics and general industry. Sub-contract mechanical machining and assembly.	Aerospace Products - BP 84 ZI de Survanne - Route de Boen	MONTBRISON Cedex
Anper	Screw cutting, turning and machining on single spindles and numerical controls, small and medium series on all materials for aerospace industry.	200 Rue de la Fin - BP 5	MARNAZ
Aubert & Duval	Design, development, manufacturing, distribution, marketing and sales of metallurgical products, forgings in alloyed and stainless steels, and nickel or cobalt based alloys and superalloys. Heat treatment, thermochemical treatment and testing services. Trade, distribution and warehousing of metallurgical products, forgings in alloyed and stainless steels and nickel- or cobalt-based alloys and superalloys.	ZI Rue des Balmes	HEYRIEUX
Borrelly	Manufacturing of spring washers	route de Ravel - P.A. des Platières	ST LAURENT D'AGNY
CBP	High Precision Mechanical Machining In Low And Medium Volume Production	Z.I du Moulin	PONTCHARRA SUR TURDINE
Crouzet Automatismes Bu S&A	Design, manufacture, sale and internal transfer of components and systems for commutation in severe environment.	Rue du Docteur Abel - BP 59	VALENCE





EN/AS/JISQ 9100 Certified Bodies (2/7)

Company	Scope	Address	
Erma 38	Precision mechanical machining	ZA Les Bauches	CLAIX
Forges de la Loire	Manufacture by open die forging or ring rolling, heat treatment, finished machining or semi-finished machining and inspection of forgings or finished machined parts made of carbon steel, stainless steel, aluminium, copper, cobalt, titanium and nickel alloys for aerospace applications. Machining and inspection of pieces that can be castings.	Allée du Grand Pré	LE CHAMBON FEUGEROLLES
Forges et Mecanique de la Loire	Manufacture by open die forging or ring rolling, heat treatment, finished machining or semi-finished machining and inspection of forgings or finished machined parts made of carbon steel, stainless steel, aluminium, copper, cobalt, titanium and nickel alloys for aerospace applications. Machining and inspection of pieces that can be castings.	48 boulevard d'Auvergne	LE CHAMBON FEUGEROLLES
Garlock France SAS	Design, manufacturing, sale of sealing products and systems	ZI de Survaure	MONTBRISSON
Garlock France SAS	Design, manufacturing, sale of sealing products and systems.	90 rue de la Roche du Geai	SAINT-ETIENNE
GMP INDUSTRIE	Precision mechanics, micromechanics, nc machining and sub- units assembly.	539 avenue des Jourdiés 74800	ST-PIERRE-EN- FAUCIGNY
Hexcel Composites	Conception, production et vente avec assistance technique afferente, de materiaux pre-impregnes, de resines et de structures composites. Vente avec assistance technique afferente, de structures textiles et de produits composites d'origine groupe.	ZI La Plaine - BP 27 - Dagneux	MONTLUEL
Hexcel Reinforcements	Design, manufacturing and sales with technical support of treated textile fabrics and reinforcements from glass, carbon, aramid, quartz and other synthetic fibers dedicated to industrial, composites, electronics and architectural applications.	33 avenue Franklin Roosevelt	DECINES





EN/AS/JISQ 9100 Certified Bodies (3/7)

Company	Scope	Address	
Hexcel Reinforcements	Design, Manufacturing And Sales With Technical Support Of Treated Textile Fabrics And Reinforcements From Glass, Carbon, Aramid, Quartz And Other Synthetic Fibers Dedicated To Industrial, Composites, Electronics And Architectural Applications	3 avenue Condorcet BP 1208	VILLEURBANNE
Hexcel Reinforcements	Design, Manufacturing And Sales With Technical Support Of Treated Textile Fabrics And Reinforcements From Glass, Carbon, Aramid, Quartz And Other Synthetic Fibers Dedicated To Industrial, Composites, Electronics And Architectural Applications	ZI Les Nappes	LES AVENIERES
Hexcel Reinforcements	Design, manufacturing and sales with technical support of treated textile fabrics and reinforcements from glass, carbon, aramid, quartz and other synthetic fibers dedicated to industrial, composites, electronics and architectural applications.	Route de Savoie	LES AVENIERES
Industrie Technique Mecanique	High precision mechanics.		MONTVENDRE
Intertechnique (Fuel Circulation)	Design, developpement, production, maintenance, and supply of systems, equipement and services for aerospace and defence. Maintenance and after-sales support of products and systems for aerospace and defence	Boulevard Sagnat BP 3	ROCHE LA MOLIERE
Label	Design and manufacture of electrical slip rings.	ZI 18 allée de Montreal BP 439	VILLE-LA-GRAND Cedex
Loire Industrie	Manufacture by open die forging or ring rolling, heat treatment, finished machining or semi-finished machining and inspection of forgings or finished machined parts made of carbon steel, stainless steel, aluminium, copper, cobalt, titanium and nickel alloys for aerospace applications. Machining and inspection of pieces that can be castings.	ZI Les Clos Marguet	ST CHAMOND
Manudem S.A.	High precision screw-cutting and machining (all raw materials).	Z.I. des Grands Prés - 425 avenue Louis Armand	CLUSES



EN/AS/JISQ 9100 Certified Bodies (4/7)

Company	Scope	Address	
Marcel Industrie	Mecano-welding, traditional and numerical control machining. Assembly of mechanical and pneumatic units.	ZA Gervans	LA BAUME-D'HOSTUN
MDV	Fine mechanical activities for all industrial fields and with all raw materials, including specially the thin walled and casting machining parts	ZI de la Vaure rue Louis Blanchard	SORBIERS
MDV	Fine mechanical activities for all industrial fields and with all raw materials, including specially the thin walled and casting machining parts	26 Rue des Mouliniers	ST ETIENNE
Mecanique de la Loire	Manufacture by open die forging or ring rolling, heat treatment, finished machining or semi-finished machining and inspection of forgings or finished machined parts made of carbon steel, stainless steel, aluminium, copper, cobalt, titanium and nickel alloys for aerospace applications. Machining and inspection of pieces that can be castings.	Allée du Grand Pré	LE CHAMBON FEUGEROLLES
Messier Bugatti	Design, development, manufacture and associated product support activities of wheels and brakes, hydraulic equipment, braking system with associated computerized and hydraulic components. Carbon/carbon braking components for aircraft application.	7 Avenue du Bel Air	VILLEURBANNE
Mont Blanc Productions	Machining of mechanic parts and high-precision fastening elements according to drawings, standards or specifications. Machining and mastering of all materials, steels, alloys and superalloys. From prototype up to series, from primary part down to sub-unit.	894 Rue du Général de Gaulle	SALLANCHES Cedex
Mopty Industrie SARL	Precision screw-cutting. Subcontracted manufacturing for aerospace industries.	786, rue du Pont Rouge - BP 18 - Magland	CLUSES CEDEX
Novaressort	Manufacturing of sale of any kind of spring for industry and aeronautics	ZI Montmartre - 91 Rue de la Crois de Mission	SAINT ETIENNE





EN/AS/JISQ 9100 Certified Bodies (5/7)

Company	Scope	Address	
Pezet Decolletage	Screw cutting and precision mechanics	1665 avenue André Lasquin	SALLANCHES
Portelli Productions	Manufacturing and sale of polyurethane parts - with or without insert - by high or low-pressure injection.	ZI la Rivoire	COUR-ET-BUIS
Praxair Surface Technologies	Coatings and metallic and ceramic face grinding (all industries) : application of powders by detonation gun, plasma torch and h.v.o.f. (high velocity oxy fuel).	42 allée Jules Bigot	SAINT ETIENNE
Proform S.A.	Welding with additional metal strengthening of tubular systems to be used in the aircraft and space industries. Assemblage de systèmes tubulaires par soudure avec métal d'apport pour les industries aéronautique et spatiale.	4 à 8 rue du Caillou	CHAPONOST
Rabain Sa	Subcontract manufacturing of micro-mechanical and bar- turning parts of high precision.	140 ter Avenue Pierre Dumond BP 37	CRAPONNE
Radiall	Design, development, production and sale of high-reliability interconnection devices, optoelectronic components, coaxial cables and connectors.	IDA ZI Chesnes Tharabie - 15 Rue de la Garenne BP 709	SAINT QUENTIN FALLAVIER
Reel SAS	Design and manufacturing of : - lifting and conveying systems, - access equipment, teleplatforms, - assembly lines, - jigs and tools, - transport containers.	Rue de la Chaux 69450	SAINT-CYR AU MONT D'OR
Reel SAS	Design and manufacturing of : - lifting and conveying systems, - access equipment, teleplatforms, - assembly lines, - jigs and tools, - transport containers.	Rue de la Chaux 69400	VILLEFRANCHE
SIS Decolletage	All material machining and screw cutting. Mechanical sub- unit assembly	503 route du Battoir	SALLANCHES





EN/AS/JISQ 9100 Certified Bodies (6/7)

Company	Scope	Address	
SKF Aerospace France	Marketing, design, development, manufacturing, integration and support after sales for Aircraft Manufacturers and Airlines, relative to products providing motion function or load transmission using high precision mechanics, mechatronics and composite technologies.	1 Av Marc Seguin	SAINT VALLIER
SNR Roulements	Design, manufacturing, sales and inspection of precision bearings for aerospace.	Division Haute Précision - Route de Champ Farçon - Argonay	PRINGY
Sorome	Manufacturing of high precision mechanic parts	17Boulevard Charles de Gaulle	LE COTEAU
Suchier SAS	Manufacturing and sales of parts and high precision mechanical assemblies according to customer plan in small, medium and large series. Machining in numerical control on lathe and machining center.	Route de Privas	CHOMERAC
Sunaero	Development, production and maintenance of equipment for the aeronautic and space industry, more particularly : - infrared emitters and mobiles carts for the drying or fast polymerization of sealants, paints and composites for the aeronautic industry, - leak detection equipment based on the use of helium as a gas tracer for the aeronautic industry (fuel leaks, oxygen).	70 rue Ampere - BP 58	GENAY Cedex
Supermetal	Manufacturing and sales of precision parts, sub-units and finished products and related equipment for prototypes and small and medium series	1528 Avenue de Genève BP 51	SALLANCHES
Techmeta S.A.	Electron beam welding. Subcontracting works of various pieces and continuous strips applied to any field of activity. Servicing : training to these technics.	141 route des Machurettes	TESSY





EN/AS/JISQ 9100 Certified Bodies (7/7)

Company	Scope	Address	
Teleflex Aerospace Manufacturing Group	The manufacture of fan, compressor and turbine blades, vanes, shrouds and blisks for aircraft engines, also the manufacturing of rotating and stationary blades for steam and gas turbines. CNC milling with 3 to 5 axis machining centres, in conjunction with advance CAD/CAM systems and advance co-ordinate measuring machines.	France - Picamot	LA PICAUDIÈRE
Thales Avionics S.A.	Development, manufacturing, support and associated users services applied to civilian and military equipments and systems for aircrafts.	25 rue Jules Védrine	VALENCE
Timet Savoie	Manufacturing of titanium and of titanium alloys, semi-finished titanium products distribution.	62 Avenue Paul Girod	UGINE
Vai Clecim	Design, manufacturing, procurement, project management, worldwide installation, testing and commissioning of production equipment for metallurgy, with associated process control automation systems and metallurgical services.	41 Route de Feurs	MONTBRISON
Vai Clecim	Design, manufacturing, procurement, project management, worldwide installation, testing and commissioning of production equipment for metallurgy, with associated process control automation systems and metallurgical services.	51 rue Sibert	SAINT CHAMOND
Vibratec	Study, consulting and research in acoustics and vibrations.	28 chemin du petit bois	ECULLY
Vignal Artru Industries	Subcontracting In High Precision Small Mechanics Manufacture For Aerospace Industries	Route de romans - BP 1	CHABEUIL
Vision Systems Aeronautics	Design and manufacturing of roller shades, roller blinds, sunvisors, handles, helicopter windows and interior linings, security systems and video systems.	Route d'Irigny	BRIGNAIS

