

**RÉGION
BOURGOGNE
FRANCHE
COMTÉ**

Automotive and mobility solutions

DO YOU HAVE A PROJECT? BOURGOGNE-FRANCHE-COMTÉ WELCOMES YOU!

With its business parks and infrastructure, Bourgogne-Franche-Comté has everything you need to jump-start your projects in an environment designed for entrepreneurial innovation.

No.1

INDUSTRIAL REGION
IN TERMS OF JOBS
(1 IN 5 EMPLOYEES)

No.3

REGION FOR
SHARE OF INDUSTRIAL
ADDED VALUE

6

INTERNATIONAL
AIRPORTS
NEARBY

9

MOTORWAYS FORMING
A STRATEGIC INTERSECTION
IN THE HEART OF EUROPE

451

KM
OF HSR LINES
14 TGV STATIONS



BIRTHPLACE OF THE PSA GROUP



SOCHAUX SITE

=> production of 308, 3008, 5008, Opel Grandland X
=> future vehicle development

9,000

EMPLOYEES
INCLUDING
2,000 ENGINEERS

1/4

OF FRENCH
LIGHT-DUTY VEHICLE
PRODUCTION

1,800

VEHICLES PRODUCED
EVERY DAY



VESOUL SITE

=> the Group's global logistics centre
=> spare part production

3,000

EMPLOYEES

250,000

PART NUMBERS
IN STOCK

1,800

CLIENTS
AROUND THE WORLD



BELCHAMP TECHNICAL CENTRE

=> future vehicle experiments

CLUSTERS AND 2 COMPETITIVENESS CLUSTERS

PLASTIPOLIS CLUSTER

The Plastipolis competitiveness cluster for the plastic and composites sector fosters collaborative projects related to additive manufacturing, eco-materials, process engineering, advanced tooling, micro-manufacturing, plastronics and hybrid composites. Some examples of the issues tackled: lightening of structures, fire-resistant plastics, materials for batteries, recycling.

350

MEMBERS

250

BUSINESSES

MECATEAMCLUSTER

The MecaTeamCluster is a **national cluster specialising in the design, development and maintenance of heavy-duty railway machinery**. Its objective is twofold: first, providing innovative solutions to improve railway infrastructure construction or regeneration processes and secondly, drawing up plans to reorganise the maintenance of construction equipment in order to optimise operation.

109

MEMBERS

ALLIZÉ PLASTURGIE

Allizé Plasturgie Bourgogne-Franche-Comté is the regional trade union for companies in the plastics processing and composites sector. Its board is made up of directors from plastics processing firms and it calls on experts and networks to bring companies together, to encourage them to share experience and expertise, to facilitate their day-to-day operations with an eye to growth and sustainability, to stimulate ideas, further strategic thinking and imagine the future.

PÔLE VÉHICULE DU FUTUR COMPETITIVENESS CLUSTER

The benchmark competitiveness cluster for **vehicles, mobility solutions and related services**, the Pôle Véhicule du Futur Competitiveness Cluster brings together and coordinates an ecosystem of over 400 members from the Bourgogne-Franche-Comté and Grand Est regions. **It is the regional representative of the PFA Automotive & Mobilities Facility** and part of the automotive sector's 2018-22 Strategic Contract. It addresses the major challenges in the evolution of mobilities and for the manufacturing industry of the future. It unites companies, public research organisations, educational bodies and regions around **collaborative projects focusing on innovation, industrial performance improvement programmes** with its PerfoEST brand, and **new training and skills**, all with a business objective.

Through its actions in the service of business competitiveness, the cluster contributes to creating wealth and jobs in the region.

400

MEMBERS

345

BUSINESSES

88,000

EMPLOYEES

470

PROJECTS
LABELLED

216

PROJECTS
FINANCED
(€752 M) OF WHICH
36 EUROPEAN
PROJECTS

- > Awarded the European Gold Label for cluster excellence
- > Bureau Veritas certified training body



THE REGIONAL ECONOMIC AGENCY OF BOURGOGNE-FRANCHE-COMTÉ

The Regional Economic Agency cooperates closely with stakeholders in business development, innovation, training, and employment to:



ASSIST
in maintaining
and improving
economic activity
and employment
in the region



**SUPPORT
AND DEVELOP**
innovation
and eco-innovation



BACK
the region's
economic
development
strategies



BOOST
the region's
economic
appeal

BOURGOGNE-FRANCHE-COMTÉ

A FORWARD-LOOKING ECOSYSTEM

Cars, trucks, trailers, port and airport trailers, refuse collection vehicles and road sweepers, motorised two-wheelers or kick-scooters are all mobility solutions for which Bourgogne-Franche-Comté is continuously innovating.

With the presence of automotive flagship PSA and global centres of excellence, innovation has long run deep in the region's DNA. Today, the solutions are focused on self-driving, electric and hydrogen-powered vehicles.

Tailored to the market's requirements, training programmes produce a qualified workforce able to keep pace with technological developments.

A forward-looking ecosystem that helps establish Bourgogne-Franche-Comté as a region firmly invested in the mobilities of the future.



STRENGTHS of the region

- ✓ **BIRTHPLACE OF THE PSA GROUP**
- ✓ **GLOBAL CENTRES OF EXCELLENCE**
 - => Faurecia (acoustic performance, decontamination and hydrogen fuel cell)
 - => Lisi Automotive (materials, surface treatment)
 - => PSA Belchamp (vehicle test benches)
 - => Schrader Pacific (valves and pressure measurement)
 - => Delfingen (hoses and fluid technology)
 - => Danielson Engineering (engine prototypes)
- ✓ **BATTERY-POWERED AND HYDROGEN FUEL CELL MOBILITY**
- ✓ **SELF-DRIVING VEHICLES**
- ✓ **LIGHTENING STRUCTURES, NEW MATERIALS**
- ✓ **INDUSTRY OF THE FUTURE/FACTORY OF THE FUTURE**

A FEW COMPANIES IN THE INDUSTRY



MANUFACTURERS



ARQUUS
CHARLATTE MANUTENTION
EXAGON
GAUSSIN MANUGISTIQUE
GROUPE PSA
LAMBERET
LIGIER
MYGALE
ONROAK
ORECA
PACKMAT
PEUGEOT MOTOCYCLES
TEREX
VALMETAL
VIRLY



EQUIPMENT MANUFACTURERS



BENTELER
CNL INNOVATIVE TECHNOLOGIES
FAURECIA
FIAT POWER TRAIN
FLEX'N'GATE
GMI
JTEKT AUTOMOTIVE
MICHELIN
VALEO



BODYWORK/TRAILERS



ERDE
FRUEHAUF
MAGYAR
METALIANCE
NICOLAS INDUSTRIE
REMORQUES LOUAULT
SMFF
TEKNOVIT
TROUILLET



CONTRACTORS



AI-KO
BAUD INDUSTRIES
DELFINEN
ELECSYS
EUROSTYLE SYSTEM
FAIVELEY
FIDAY GESTION
GROUPE SIMONIN
GROUPE STREIT
LISI
R.BOURGEOIS
REYDEL
SIDÉO
SKF
SOLVAY
SNOP
TEXYS
VON ROLL



ENGINEERING FIRMS



AERO CONCEPT ENGINEERING
AKKA TECHNOLOGIES
ALTRAN
ATSUKE
BERTRANDT
DANIELSON SYSTEM
DANIELSON SERVICES
EXPLEO
MAGNA STEYR
MMT
ODALID
ORANGE LABS
PULS ACTION
PAGE UP
SEGULA
UBI-TRANSPORT



BUSINESSES

650

BUSINESSES

45,000

JOB



RESEARCH & INNOVATION

6

LABORATORIES

2

PLATFORMS



PROJECT ASSISTANCE

1

COMPETITIVENESS
CLUSTER FOCUSED
ON THE VEHICLES
OF THE FUTURE

1

COMPETITIVENESS
CLUSTER
LINKED TO THE INDUSTRY

2

CLUSTERS
LINKED TO
THE INDUSTRY



EDUCATION

1

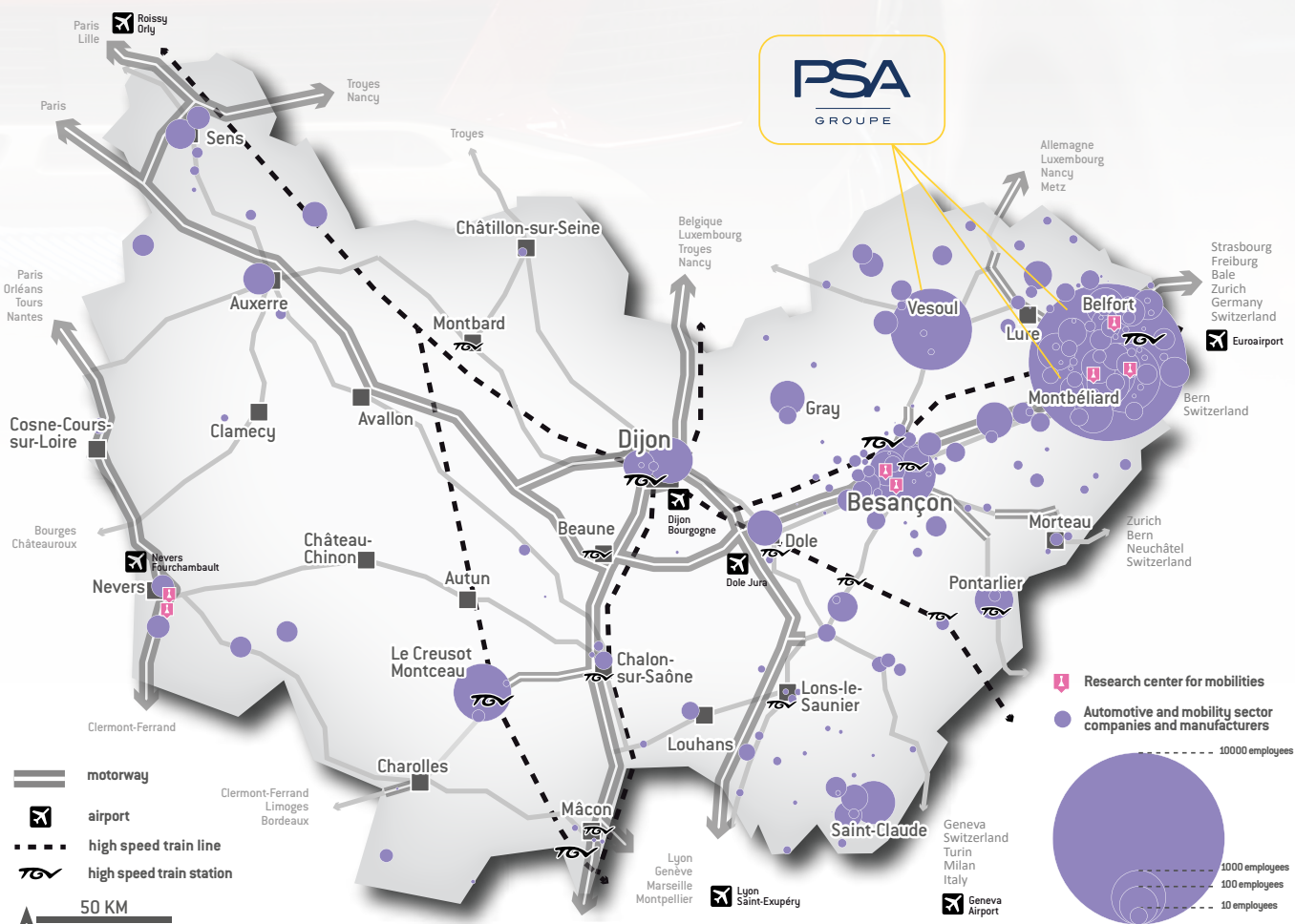
AUTOMOTIVE
DESIGN
SCHOOL

1

SPECIALIST AUTOMOTIVE
AND TRANSPORT
ENGINEERING SCHOOL

6

SCHOOLS
TRAINING
ENGINEERS



BOURGOGNE-FRANCHE-COMTÉ

A TRAILBLAZING SPIRIT

a cutting-edge scientific and technical environment

FEMTO-ST INSTITUTE

Public research laboratory (CNRS, UFC, ENSMM, UTBM), multi-disciplinary engineering sciences Its activities related to the automotive and mobility sector include:

- > The smart city (modelling and optimising urban networks and flows, car-sharing)
- > Automatic test generation and reliability of embedded systems
- > Hybrid electric systems, fuel cell systems
- > Smart materials, reconfigurable materials, lightening structures
- > Noise and vibration control
- > Predicting the service life of complex systems

CIAD LABORATORY

KNOWLEDGE MANAGEMENT AND DISTRIBUTED ARTIFICIAL INTELLIGENCE

The CIAD is a public research laboratory partnered by the University of Burgundy and the University of Technology of Belfort-Montbéliard (UTBM). It most notably specialises in the **perception of the environment and autonomous navigation**, especially driving assistance and self-driving vehicles in a complex, dynamic urban environment (detection, recognition and tracking objects, predicting movement etc.). Researchers have access to an experimental facility designed for self-driving vehicles, comprising several robotic vehicles fitted with an array of sensors and communication interfaces.

THE FAURECIA CLEAN MOBILITY LAB

SPEEDING UP INNOVATION

The Bavans R&D centre is home to Faurecia's first innovation laboratory. This 650 m² facility houses a wide selection of creative resources to help speed up the marketing of products and services meeting the requirements of tomorrow's mobility:

- > **Acoustic performance**
- > **Clean vehicle technology**
- > **Solutions for all types of powertrains** (internal combustion engine, hybrid, electric and hydrogen)

DRIVE LABORATORY

DEPARTMENT OF RESEARCH IN VEHICLE ENGINEERING FOR THE ENVIRONMENT

Supported by the Higher Institute of Motor Vehicles and Transport (ISAT), its areas of research are: Optimisation of propulsion energy, smart and connected systems, composite materials and durability, vibratory and acoustic behaviours.

ID MOTION LABORATORY

PUBLIC/PRIVATE RESEARCH LABORATORY
NEW-GENERATION ENGINE DEVELOPER

ID-Motion is a scientific interest group bringing together the ISAT and the Danielson Engineering company at the Nevers Magny-Cours technology centre. Objective: developing knowledge and sources of innovation in the areas of **alternative fuels** and **high-performance powertrains** (downsizing, hybrid technology, combustion, fuels, heat recovery, track testing, etc.).

ELLIAD LABORATORY

SYSTEMS DESIGN AND ERGONOMICS

The ELLIAD laboratory works on issues covered by the Future Mobilities and Transport faculty at the University of Technology of Belfort-Montbéliard. This work is mainly done by the ERCOS team which has a facility hosting different tools and technologies:

- > METRECO: metrology to characterise human-product-environment interactions
- > Sensory studies
- > SIMERCO: driving simulator
- > PREVERCO: virtual reality facility
- > Bio-sourced materials
- > MANERCO: digital dummies for sizing products and systems
- > SARHa: vehicle size simulation



BOURGOGNE-FRANCHE-COMTÉ

MOTOR RACING IN THE SPOTLIGHT

...A TECHNOLOGY CENTRE AT MAGNY-COURS

Around thirty companies entirely or partly devoted to motor racing are based at the technology centre close to the Magny-Cours circuit. These companies offer a full range of expertise from design to the manufacture and roll-out of racing vehicles.

The **POLE VÉHICULE DU FUTUR** competitiveness cluster is present with its Nevers Magny-Cours site office based at the technology centre.

EXAGON ENGINEERING

THE FULL TROPHÉE ANDROS ELECTRIC LINE-UP

Exagon is a specialist in electric racing cars and has designed and manufactured all the 100%-electric drivetrains for the popular Trophée Andros event. With 340 horsepower and 4-wheel drive and steering, these cars are driven by professionals such as Nicolas Prost, Sébastien Loeb, Franck Lagorce, and Olivier and Aurélien Panis. The ANDROS Sport electric vehicles now perform better than ICE vehicles in the Elite Pro category.

Exagon specialises in the design and manufacture of high-performance batteries and drivetrains, most notably used in the defence and aerospace industries.

ORECA MAGNY-COURS

POWERTRAIN DESIGN AND DEVELOPMENT

One of the leading European specialists for motor racing powertrains (engine, gearbox and electronics), Oreca prepares, designs and develops powertrains for manufacturers, promoters and private teams in some of the biggest international championships and racing classes, including LMP3 (Le Mans), WTCC (World Touring Car Championship), and WRX (World Rallycross Championship).

LIGIER AUTOMOTIVE

RACING CARS

Ligier Automotive is an expert in the areas of design, production, electronics, powertrain and restoration. It designs and produces a wide range of racing cars (single-seaters, sports prototypes and GTs) as well as special vehicles and concept cars. In 2019, nearly 300 cars designed by Ligier Automotive raced on tracks around the world.

NEVERS MAGNY-COURS CIRCUIT

Every year, the Circuit draws in motorsports enthusiasts for around twenty **car and motorcycle** events, **speed and endurance races for modern and classic cars**, with showcase events including the **FIM World Motorcycle Superbike Championship**, the **Historic French Grand Prix**, the **GT4 European Series**, the **Classic Days** and the **12 Hours of Nevers Magny-Cours**.

The Nevers Magny-Cours Circuit has three tracks (**Grand Prix, Karting and Club**) and an **Off Road Park**, spanning a **350-hectare** site.

The Nevers Magny-Cours Circuit drew an estimated **313,500 visitors** in 2019, making it the second most visited site in the Bourgogne-Franche-Comté region.

The Circuit has the largest capacity available in France with facilities for **139,112 spectators**.

The Circuit company takes care of:

- management and coordination of sporting activities with the organisation of motorsports races and competitions on the Nevers Magny-Cours Circuit.
- promoting and marketing the technology centre, coordinating actions led by local authorities and partners at the technology centre.

MYGALE

SINGLE-SEATER DESIGN AND MANUFACTURE

Mygale has forged its reputation in the realm of motorsports by designing and manufacturing over 1,200 racing cars for major car manufacturers: Formula BMW, Formula Renault, Peugeot Spider, or for its own account: Formula Ford, Formula US2000, Formula 3, Formula 4 FIA. World leader on the sports series single-seater market, the company exports its vehicles across five continents.

BOURGOGNE-FRANCHE-COMTÉ

MOBILITY FOR THE FUTURE



self-driving vehicles

GAUSSIN MANUGISTIQUE

AN AUTOMATIC VEHICLE FOR PORT LOGISTICS

The AIV (Automotive Intelligent Vehicle) is a **modular automatic vehicle equipped with an on-board navigation system** that controls its movements and safety. A global fleet supervision system manages and optimises all vehicle movements at the port terminal. The AIV was designed to reduce energy consumption and meet space constraints. Like all the vehicles in the ATT (Automotive Terminal Trailer) range designed by Gaussin, it is as easy to change the AIV's engine as it is to change a camera battery. It can thus be equipped with an all-electric Power Pack.

hydrogen mobility

Hydrogène
BOURGOGNE
FRANCHE-COMTÉ



HYBAN

TESTBED FOR HIGH-POWER HYDROGEN FUEL CELLS

Operating since 2019, Hyban is an **industrial Hydrogen Fuel Cell testbench** for **high-power** PEMFC and HT PEMFC fuel cells (100-120 kWe). This unique and indispensable tool for placing 'full fuel cell power' vehicles on the market adds to the test and validation methods offered by the **Hydrogen Fuel Cell Facility in Belfort**.

ISTHY

NATIONAL HYDROGEN STORAGE INSTITUTE

Backed by the Rougeot Energie company, ISTHY will be **France's centre for testing, certification and periodic requalification of tanks and components in the Hydrogen cycle**. It will also serve as a **training and R&D centre** to help anticipate technological developments.

FAURECIA CORE CENTRE FOR H₂

CENTRE OF GLOBAL EXPERTISE FOR HYDROGEN STORAGE SYSTEMS

A major player in the automotive industry, FAURECIA is setting up its own **centre of global expertise dedicated to the development of hydrogen storage systems** at its R&D centre in Bavans, near Montbéliard. With this project, Faurecia intends to invest in research and development of lighter, higher-performance **next-generation high-pressure tanks**, and in a characterisation test centre for these tanks.

electric mobility

PACKMAT

INNOVATIVE WASTE COMPACTORS AND REFUSE COLLECTION VEHICLES

PACKMAT System is the French leader for **waste collection site roller compactors** and has created an innovative **fully-electric manual side-loading refuse collection vehicle**. In addition to the low noise levels during operation, refuse collection operators are no longer hazardedly positioned at the rear of the vehicle, but on the side or in the cabin instead. The cabin has a bus-type door facing the pavement. Their working conditions are therefore greatly improved. There is easier access to the cabin and the operators are protected from waste fumes.

E-Side refuse collection vehicle ©PACKMAT



R.BOURGEOIS

DESIGN AND REALISATION OF MAGNETIC CIRCUITS FOR AUTOMOTIVE MANUFACTURERS

R.Bourgeois has an array of facilities including **five very high-precision presses** and **six laser welders**, and thanks to this technology it operates in the niche sector of **hybrid and electric motors**. For example, it produced the **rotors and stators for the** official car used at the Paris COP 21 conference.

SOLVAY

PVDF FOR ELECTRIC BATTERIES

Solvay is increasing its PVDF (polyvinylidene fluoride) production capacity by more than 35% to keep up with strong growth in global demand, mainly for use in lithium-ion batteries for electric vehicles. PVDF optimises energy storage efficiency and reduces battery weight.

VALMETAL AND ELECSYS

ELECTRIC STREET CLEANERS FOR THE CITY OF PARIS

ValMétal designs and produces road sweepers which boast an **exclusive hydrostatic gearbox**. The company's latest innovation is an electric street cleaner chassis that can be adapted to other commercial vehicles. The electric street cleaner meets the **latest ecological requirements** in terms of pollutant emissions while **reducing noise** pollution, so it could be used during night shifts. After close technical collaboration, innovative company **ElecSys France®** provided the expertise required to develop the **embedded electronics and lithium battery**. This secure and robust custom-made battery offers more than **12 hours' driving range** for the street cleaner, which is now used by the City of Paris community.

the factory of the future

PSA SOCHAUX 2022

To guarantee its performance and adapt to the major changes underway in the automotive industry with the shift towards low-carbon vehicles, the PSA site has launched a very ambitious **programme to transform its workshops**. Known as Sochaux 2022, it involves the investment of over €200 million with backing from the Bourgogne-Franche-Comté region. The programme will make Sochaux **one of the most modern and efficient sites in Europe**, while rolling out a **Green Factory project** that **will limit its environmental footprint and its consumption of natural resources**.

BOURGOGNE-FRANCHE-COMTÉ

TARGETED TRAINING

AN AUTOMOTIVE DESIGN SCHOOL

ESPERA SBARRO SCHOOL (MONTBÉLIARD)



Founded over 20 years ago by famous designer Franco Sbarro, the ESPERA Sbarro School works with the University of Technology of Belfort-Montbéliard to offer a 10-month practical and theoretical course on automotive techniques.

The course covers drawing/design, modelling, polyester bodywork, general mechanics, welding, automotive mechanics, chassis construction and suspension systems.

The teaching is provided by professionals who are themselves former students of Franco Sbarro, with input from specialists in economics, management and communications. It is based on a four-point code defined by Franco Sbarro covering **aesthetic, ethical, conceptual and technical** aspects.

Every year, the Espera Sbarro prototype is exhibited at the Geneva Motor Show.

AN AUTOMOTIVE AND TRANSPORT ENGINEERING SCHOOL

ISAT (NEVERS)

INSTITUT SUPÉRIEUR DE L'AUTOMOBILE ET DES TRANSPORTS
(HIGHER INSTITUTE OF MOTOR VEHICLES AND TRANSPORT)

- > **Engineering studies at an international level for the entire automotive and transportation industry:** innovation and R&D, design, industrialisation and production, vehicle operation
- > Specialisations in technical procurement and redesign, vehicle comfort and behaviour, vehicle energy and the environment, ergonomics and biomechanics, industrialisation, infrastructure and transport networks, logistics and industrial production, materials and structures, smart and autonomous vehicles, process safety and maintenance
- > **Department of Research in Vehicle Engineering for the Environment (DRIVE):** optimisation of propulsion energy, smart and connected systems, composite materials and durability, vibratory and acoustic behaviours.



A VOCATIONAL CAMPUS OFFERING EXCELLENT QUALIFICATIONS

MOBICAMPUS

Mobicampus is an innovative set-up bringing together business, institutional and training organisations to meet the need for more qualifications and better skills in the **automotive** sector and for **mobility of the future**. It offers a wide range of training courses in Bourgogne-Franche-Comté, leading to diplomas or qualifications, from CAP (first-level vocational qualification) to doctorate level, including CQP qualifications, professional certificates and engineering degrees.

60

TRAINING COURSES

45

PROFESSIONS

training focused on the needs of the market

UTBM (BELFORT-MONTBÉLIARD)

BELFORT-MONTBÉLIARD UNIVERSITY OF TECHNOLOGY

- > **Energy Engineering:** Energy production, Networks, conversion and storage, Transport and embedded energy systems
- > **Electrical Engineering** by apprenticeship
- > **Master's degree in Electrical Energy**

with two educational facilities:

Electromagnetic compatibility
Energy and land transport

ESIREM (DIJON – LE CREUSOT)

HIGHER ENGINEERING INSTITUTE SPECIALISING IN INFORMATION TECHNOLOGY, ROBOTICS, ELECTRONICS AND MATERIALS

- > Materials: R&D or product industrialisation, from design to recycling (sustainable development)
- > IT/Electronics: specialisations in Embedded Systems, Network Security and Quality, Software and Knowledge Engineering
- > Robotics: modelling and simulation, functional and mechanical design, system autonomy, ...

ENSMM (BESANÇON)

A GENERAL ENGINEERING UNIVERSITY SPECIALISING IN MECHANICS AND MICROTECHNOLOGY

- > Two engineering diplomas with the status of apprentice, with a speciality in Mechanics and a speciality in Microtechnology and Design.
- > Specialisation options: Structural mechanics, Creation of connected objects, Materials and surfaces, Mechatronics and robotics, Engineering of production systems, Micromechanics, Innovation engineering, Process engineering

UNIVERSITY OF FRANCHE-COMTÉ

From the DUT (technology diploma) to Master's level, the UFC delivers courses focused on renewable energy and energy efficiency.

- > Professional degree in the electronics professions: communication, embedded systems

UNIVERSITY OF BURGUNDY

From the DUT (technical diploma) to the Master's level, the UB provides courses in the physics of materials as well as civil and mechanical engineering.

- > Master's in Transport, Mobility and Networks

ARTS ET MÉTIERS, CLUNY CAMPUS

- > Studies in mechanical, industrial, and energy engineering

LYCÉE GERMAINE TILLION (MONTBÉLIARD)

- > CAP in Motor Vehicle Maintenance
- > Professional baccalaureate in Body Repair and Construction
- > Professional baccalaureate in Vehicle Maintenance, options for passenger vehicles, motorcycles or industrial vehicles
- > BTS senior technician's diploma in Vehicle Maintenance, passenger vehicles option
- > BTS senior technician's diploma in Vehicle Maintenance, road transport vehicles option

APPRENTICE TRAINING CENTRE IN MÂCON LYCÉE DAVIER (JOIGNY)

- > BTS senior technician's diploma in Vehicle Maintenance, passenger vehicles option



YOUR MOBILITIES SECTOR CONTACT

Nathalie Loch

nloch@aer-bfc.com

Tel. +33 (0)6 32 83 00 49

Maison de l'Économie

46 avenue Villarceau - 25000 Besançon - FRANCE

T. +33 (0)3 81 81 82 83 – F. +33 (0)3 81 81 99 40

Maison Régionale de l'Innovation

64A rue Sully – CS 77124 - 21071 Dijon Cedex - FRANCE

T. +33 (0)3 80 40 33 88 – F. +33 (0)3 80 40 34 02

www.aer-bfc.com contact@aer-bfc.com



TO LEARN MORE



Action financed by

**RÉGION
BOURGOGNE
FRANCHE
COMTE**