

HIGH TECHNOLOGIES
MICROWAVE,
PHOTONICS,
SECURE NETWORK



discover

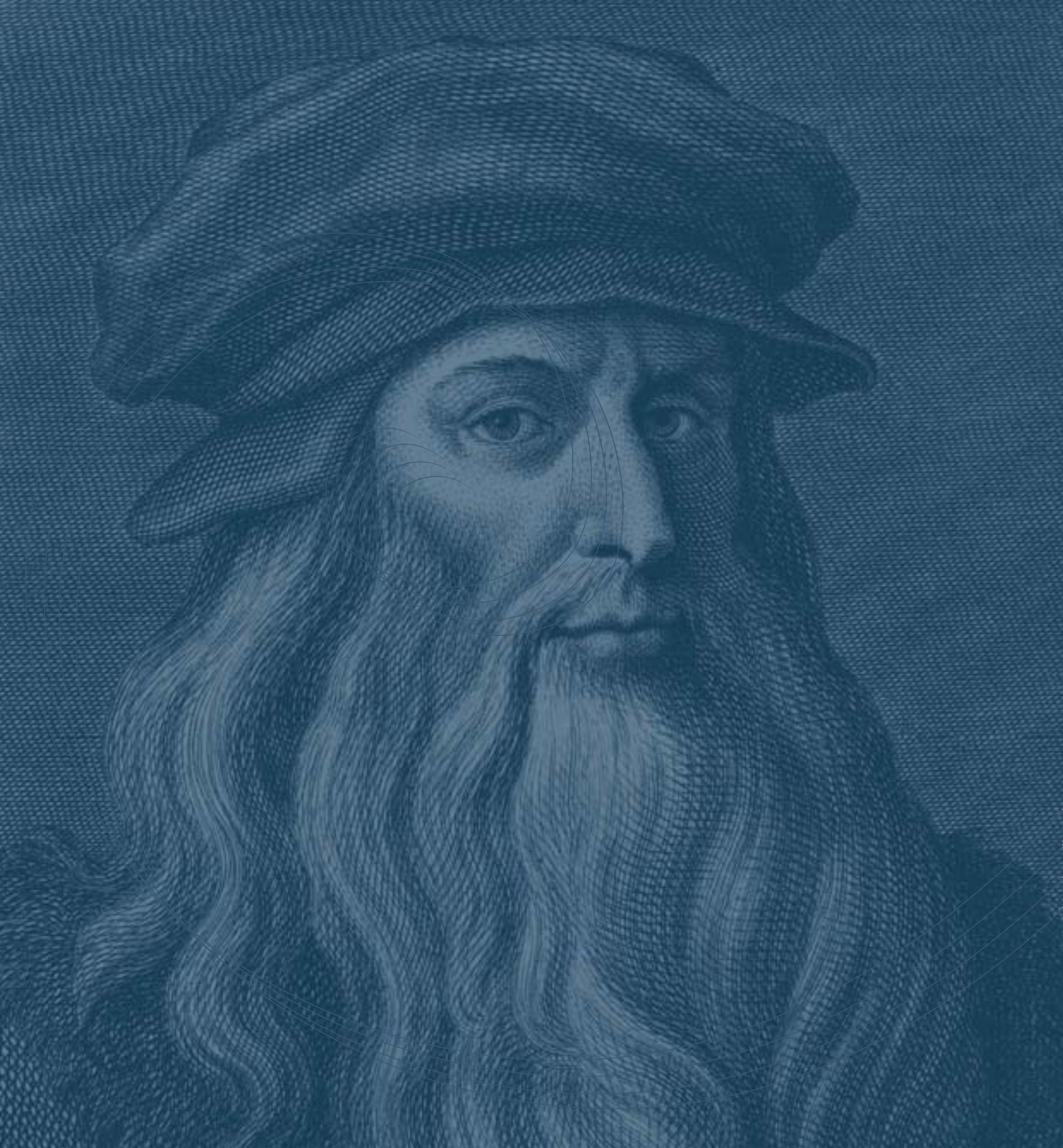
train

develop

reveal



Competitiveness cluster in Limousin



Before he was recognised as “first painter, architect and engineer to the King” and his genius was revealed throughout the known world, Leonardo da Vinci developed a multitude of talents among the most renowned artists and scientists of his day. All of the players in the competitive high-tech cluster Elopsys share something of Leonardo in common. Like him, they know that it's easier to realise great ideas together.



“Elopsys creates value for people with original ideas and those who realise their applications.”

The French clusters of competitiveness were created to boost industrial activity by bringing together the main players in a specific sector to work on common projects. Beyond this aim, Elopsys brings a regional dimension to the cluster, so the whole of Limousin is involved in making its mission a success.



The Elopsys cluster of competitiveness in the high technologies of Limousin brings together major players

in microwave, photonics and secure networks. Entrepreneurs, researchers and students pool their talents, motivated by the desire to fully develop individual potential. Some provide brainpower, others are more hands-on, together they drive the cluster. Objectives in common: the regional development of Limousin, around its major attractions for industry, research and teaching.

From left to right:
Jean-Pierre REGNER,
President, Elopsys
Dominique ROUSSEL,
Vice-President, Elopsys
Technical Director, LEGRAND
Jean-Pierre BREUIL,
Industrial Director, A NOVO
President, CISTEME
Pierre-Yves GUILLON,
Director, XLIM
Claude COMMON,
Director, DGA/CEG
Jacques FONTANILLE,
President, University of Limoges
Michel DELAU,
CFO, Elopsys
CEO, LIMOUSIN EXPANSION

The founder members of Elopsys

Limousin is backing the Elopsys cluster of competitiveness to make the region even more attractive with its regional strengths, by spotlighting talent and creating new, high value added activities.



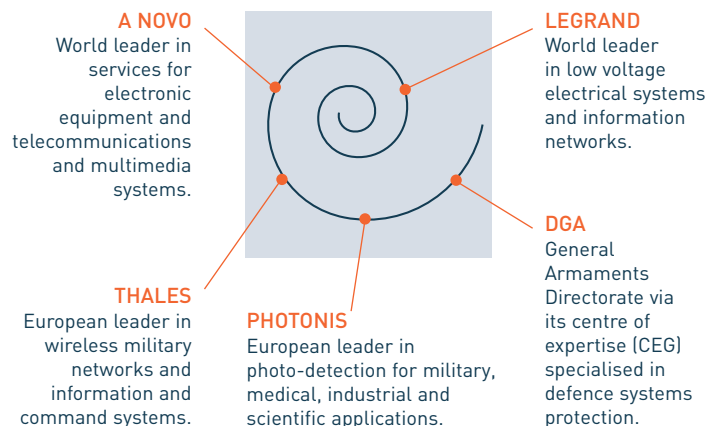
→ High-tech in Limousin, high stakes for Elopsys

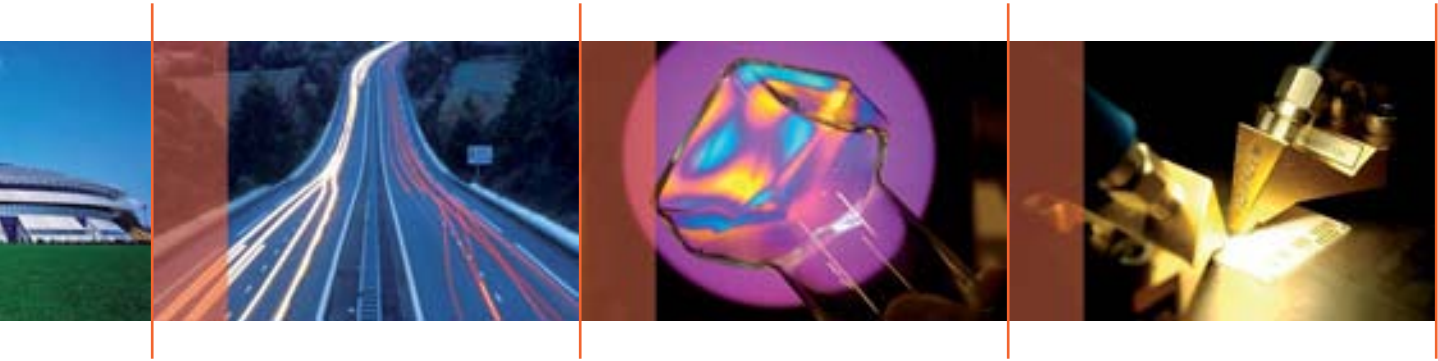
Highly motivated players looking to move forward together.

International businesses, the XLIM laboratory and Limousin Expansion, Limousin's regional economic development agency, who joined forces to get things moving, founded Elopsys.

The founders of Elopsys benefit from the expertise of around twenty high-technology companies and thirty businesses who use technologies developed within the cluster.

All of these companies are backed by the region's research capabilities, notably the XLIM laboratory, an establishment for combined research by the University and the CNRS (National Centre of Scientific Research).





The Limousin region: closely involved in the creation of Elopsys

Initial research by Limousin Expansion underlined the importance of the innovative microwave, photonics and secure systems sectors (representing 7500 jobs, 18 % of the region's employment in industry). Aware of opportunities for economic, scientific and technical development at Elopsys from the start, the Limousin region keenly participated in its plans to attain critical mass.

Identified markets by high-tech sector

Communications

- Processing and security
- Network Storage
- WiMax wireless networks
- Optical networks

Health technology

- Nuclear medical imaging
- Biotechnology
- Analysis software

Measurement, controls and checks

- Instrumentation
- Sensors

Defense

- Systems immunity
- Imaging
- Detection (lasers, satellites)

Transport

- Aviation (on-board equipment)
- Automotive (electronic equipment)

Domotics

- Convenience
- Communications and multimedia
- Security (persons/possessions)

Applications developed by Elopsys companies are found in six major markets.

Specific expertise to meet demand for development

Three preferred axes for development to meet new market needs:

- Distribution and interfaces for Vocal Data Imaging (VDI)
- Secure high-capacity networks
- Low-light vision and detection systems

The cluster includes a range of players mastering technologies across the entire electromagnetic spectrum: electrical, microwave, optical and other wavelengths.

Elopsys: key figures

18 %
of the region's
employment

25 %
of the region's
exports

65 %
of the region's
researchers

70 %
of the region's
patents



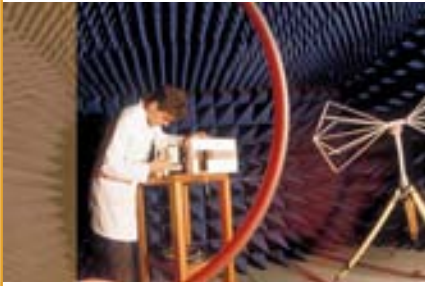
Discover



future technologies,
boost Research

Leonardo
Engineer

Sophie
Engineer



The Elopsys cluster: where the future is made every day



Researchers within the Elopsys cluster address the science and technology of information and communications, microwaves, photonics and secure networks. Elopsys brings together around 1100 people; one-third of them work in the public domain at XLIM, two-thirds are involved in research for the private sector.

Fundamental and applied research brought together

Thanks to the region's internationally renowned research, Limousin has all it takes to play a big part in innovation. Employees within the Elopsys cluster account for 40 % of the researchers. In line with the urgent demand for development and production, Elopsys researchers are behind 70 % of the patents filed in the region. Their innovative and creative know-how is close at hand to meet the practical needs of major players - both regional and international - in sectors from telecommunications to space, defense, multimedia, energy, the automotive industry and domotics.

XLIM spells increasingly powerful technological mastery

XLIM symbolises the region's research capability. Its four regional departments specialise in the domains of photonics and microwave components, mathematics, IT and secure communications systems (Ircom, Laco, Umop and Lmsi). The combined CNRS/University of Limoges research establishment actively collaborates with businesses in the Elopsys cluster. It has five departments, three transversal programmes, as well as a technology and instruments platform.*

*See Elopsys - practical information, on page 15.



Pierre-Yves Guillon, Director, XLIM
"XLIM, the scientific heart of Elopsys, makes its skills available, boosts regional industry and encourages start-ups."

"In order to better define the needs of industry, XLIM houses a valorisation and technology transfer unit. Together with Elopsys, its primary objective is to create new companies out of projects initiated by research. The attraction of scientists and industry to XLIM's skills is now a reality in the region. From now on, we hope to develop further ramifications and skills in our network by collaborating with other national and international clusters of competitiveness. The complementary nature of Elopsys applications and those of our counterparts in Toulouse, Paris and the PACA (Provence-Alpes-Côte d'Azur) region constitutes one of our axes of development."




Dominique Roussel,
 Technical Director, Legrand
"Even for a major group, it is possible to discover applications that we might not otherwise have thought of."

"There have always been researchers, teachers, and companies, working independently of each other in Limousin, in the field of high technology. Elopsys was an opportunity to get to know each other better and have a clearer idea of what laboratories had to offer industry. For example, we are working right now on the Wobnet project, and the first applications will be up and running in 2008. Real collaboration between the researchers and teachers was set up within this framework thanks to a project management methodology developed by Elopsys. The synergies created by the cluster have enabled Legrand to approach new areas of research. Already we can envisage the consumer applications of projects that are barely out of the laboratories."



Teaching



genius for tomorrow,
learning from the best

Leonardo
Teacher

Nicolas
Student



Elopsys: cluster committed to future generations



Teaching plays a central role at the heart of the Elopsys network. From the BTS to the doctorate, the broad spectrum of training is a major source of development for human resources in companies across the region.

1350
graduates
per year.

650
students taken
on each year
in the world
of science and
industry.

1/3
of graduates
stay in
Limousin for
their first job.

45 %
in the case
of doctors.

Keeping the existing and bringing in new talents

Limousin offers high-quality, specialised training fully backed by the research skills of the Elopsys cluster. Link ups between Training, Research and Companies bring real added value to teaching in the region.

Training structures to meet the challenge of the future

Over 2500 students per year are trained for Elopsys technologies in the University of Limoges' Faculty of Sciences and Technology, IUT and college of engineering:

Faculty of Sciences: the three Research and two Professional masters degrees are very attractive for students from other regions, as well as those seeking to gain an internationally recognised diploma.

The IUT: comprises ten departments including three DUTs (Diplôme Universitaire de Technologie, a diploma taken following two years at an Institute of Technology) in IT, electrical engineering and physics measures.

The ENSIL: trains high-level engineers and offers openings in microelectronics and communications, instrumentation in a working environment or mecatronics.

3IL: trains engineers who will work in large or smaller companies: software and computing services, space and aeronautics, banks, finance and telecommunications.

Technological high schools in the Limousin and their BTS diplomas: these training courses are highly valued on the job market. All holders of the XLIM doctorate are fully employed, and regional companies take the pick of potential colleagues at every diploma level.



Jean-Pierre Breuil,
Industrial Director, A Novo
"Elopsys updates the notion of the network, a new visibility of a technological richness that has been created in Limousin for the past fifty years"

"The Second World War forced companies in the domains of high frequency and radar to come into Limousin, at that time the Free Zone. The first BTS (Brevet de Technicien Supérieur, an advanced vocational training certificate, taken at the end of a two-year higher education course) in electronics soon came into being, followed by university courses such as the LMD (Licence Master Doctorat, the BA, MA and doctorate degrees) at Limoges. The Telecom BA, the DUT (Diplôme Universitaire de Technologie, the diploma taken after two years' study at an institute of technology) in electrical and IT engineering, the DESS (Diplôme d'Etudes Supérieures Spécialisées, a post-graduate one-year diploma course) in electronics and mathematics, doctorates and engineering schools attract a growing number of students. The interaction between companies within Elopsys enables teachers to be constantly in phase with new technologies. Very anchored in the culture of the region, in-house training is also supported by the financial participation of employers and a real-time involvement with salaried employees."

Alain Jardri,
IUT Professor, University of Limoges
"Thanks to Elopsys, we can bring out new projects that go more rapidly beyond mechanics."



"The teaching we give at the IUT never loses sight of the material applications that the Laser industry can develop, especially in photonics. This link between teaching and industry results in the regular transformation of training courses into real jobs. The association "Limousin Laser" that brings together laboratories, industry and students, organises conferences in partnership with Elopsys. By permanently presenting new applications, this association also creates relations that bring members of the cluster even closer."

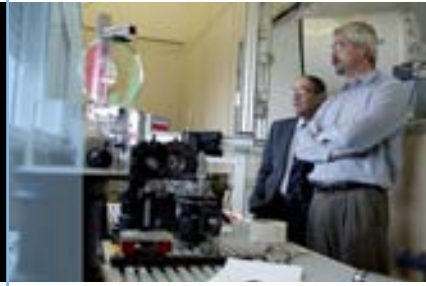
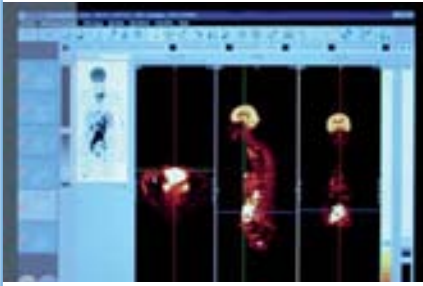


Creating

value, developing
companies

Leonardo
Project manager

Melissa
Team leader



Elopsys: cluster of competitiveness, creator of added value



Small-to-medium size businesses and large companies account for over 7500 jobs within the Elopsys cluster. Every day, they contribute to the dynamism of the region. The technological showcase they comprise is a determining factor for new entrepreneurs looking to locate in Limousin.

Favourable environment for business creation.

Synergy between players in the Elopsys cluster is one of the main attractions for newly created and developing companies moving into the region. Their decision to join a network that generates a turnover of over 3,5 billion euros is well-founded. The concentration of activities allows direct access to economic, technical and institutional decision-makers. The technology transfers piloted by XLIM enable start-ups as well as known companies to follow through projects and realise production. The availability and low cost of property, as well as the quality of life the area offers researchers, entrepreneurs and salaried employees are among its other advantages. Qualified human resources for the development of new activities are trained locally.

Open minded approach to new opportunities

Above all, the Elopsys cluster is an interdisciplinary network that works on national and international programs in perfect cooperation. The companies that participate in projects there get practical results. This dynamic collaboration between industry and research brings about innovation. Many heads are better than one for getting noticed on the international market, and developing more ambitious offers faster.



Michel Delau,
CEO, Limousin Expansion

“When we first came up with the idea of Elopsys, we wanted to give a fresh boost to development in Limousin by associating it with a real organizer.”

“Elopsys was born out of the financial and political commitment of a whole region and the XLIM’s desire to encourage cooperation with companies of all sizes. Elopsys is now grouped around the high technologies of researchers, academics and industry. Whether start-ups or major groups, it will be industries that make Elopsys a success by appropriating the cluster organization. By manufacturing new research-driven applications, they will participate actively in the exogenous development of Limousin and consolidate its high-tech positioning.”



Guillaume Huss,
CEO, LEUKOS

“For a start-up, the group dynamics initiated by Elopsys is a considerable advantage.”

“Leukos was set up in 2006 by a scientist and a teacher from XLIM to develop certain white laser applications in the bio-medical field. This transfer of technology - directly from research to industry - is taking place in two phases: a period of incubation within Elopsys, followed by relocation in independent premises. To join a cluster where all the players are linked to our activity enables us to advance much more quickly than if we had been isolated: small and big companies are neighbours, synergies and shared skills are a reality, and proximity encourages dialogue. Elopsys is a day-to-day link that enables us to be more visible, thanks especially to the international exhibitions that are organised.”



Reveal

talent, realise
potential

Leonardo
Creator

Thomas
Entrepreneur



Elophys: a cluster organised around concrete proposals



Since the Elophys cluster was created, over 20 R&D projects have been approved and financed for the year 2006, and 100 more are scheduled for the next five years. At the same time, special events have been introduced to accompany and encourage projects by players in the cluster.

Accompaniment: Elophys brings projects together

The Elophys cluster's prime role is to assist companies seeking support for projects, and apply the benefit of their expertise to gain financial backing as required. The process is organised with technical backing by Limousin Expansion, the active participation of XLIM's valorisation unit, and support from the State and local authorities. It covers every aspect of project set-up.

Anatomy of a project

To bring projects to fruition fast, (in one-to-three years), they are formally structured in the following way:

- Project development (partners, technology and budget),
- Definition of objectives: technologies developed, target markets, provisional turnover, margins according to the size and the degree of innovation of the project,
- Establishing a plan of action: support and management of the project, confidentiality and security tools, tools for collaborative work,
- Tracking committee for projects.



Thomas Vincent,
CEO, Elophys

"The projects the cluster develops enrich enterprises of every size and companies with widely varying cultures."

"Right from the start, Elophys has supported every single player in the project by bringing them all together beneath the same banner. Cultural differences are smoothed out, common working practices are established, and tools for collaborative exchange are put into motion. Elophys brings its operating skills to bear: creating dynamic networks, sharing the needs for development and emulation of all concerned, and enabling industrial technology to be ratcheted up with each new project."

LiPSyS and WOBNET, two of the Elophys cluster's flagship projects

LiPSyS

Project stakeholders: XLIM laboratory, the technological resources centre CISTEME, THALES group, the small company PRANA and start-up AMCAD Engineering are collaborating on this project for industry.

Technology: Project for breakthrough technology to enable the characterisation of new-generation components on a Gallium Nitride sub-stratum and the design of new-generation Broadcast-Reception systems.

Financing: 2,5 M € with State co-financing within the frame-work of inter-ministerial funding for competitiveness.

WOBNET

Project stakeholders: LEGRAND, CRYPTIRIS, XLIM OSA department, CISTEME, IUT of Limousin, FAVARD high school.

Technology: Radio frequency transmission solutions for access and communications inside buildings. Setting up radio communications could resolve certain problems, specifically those related to the use of nomadic equipment, and the flexibility and evolving nature of installations.

Financing: 2,5 M € with co-financing from the Regional Council within the framework of Funds for Innovation in Limousin.

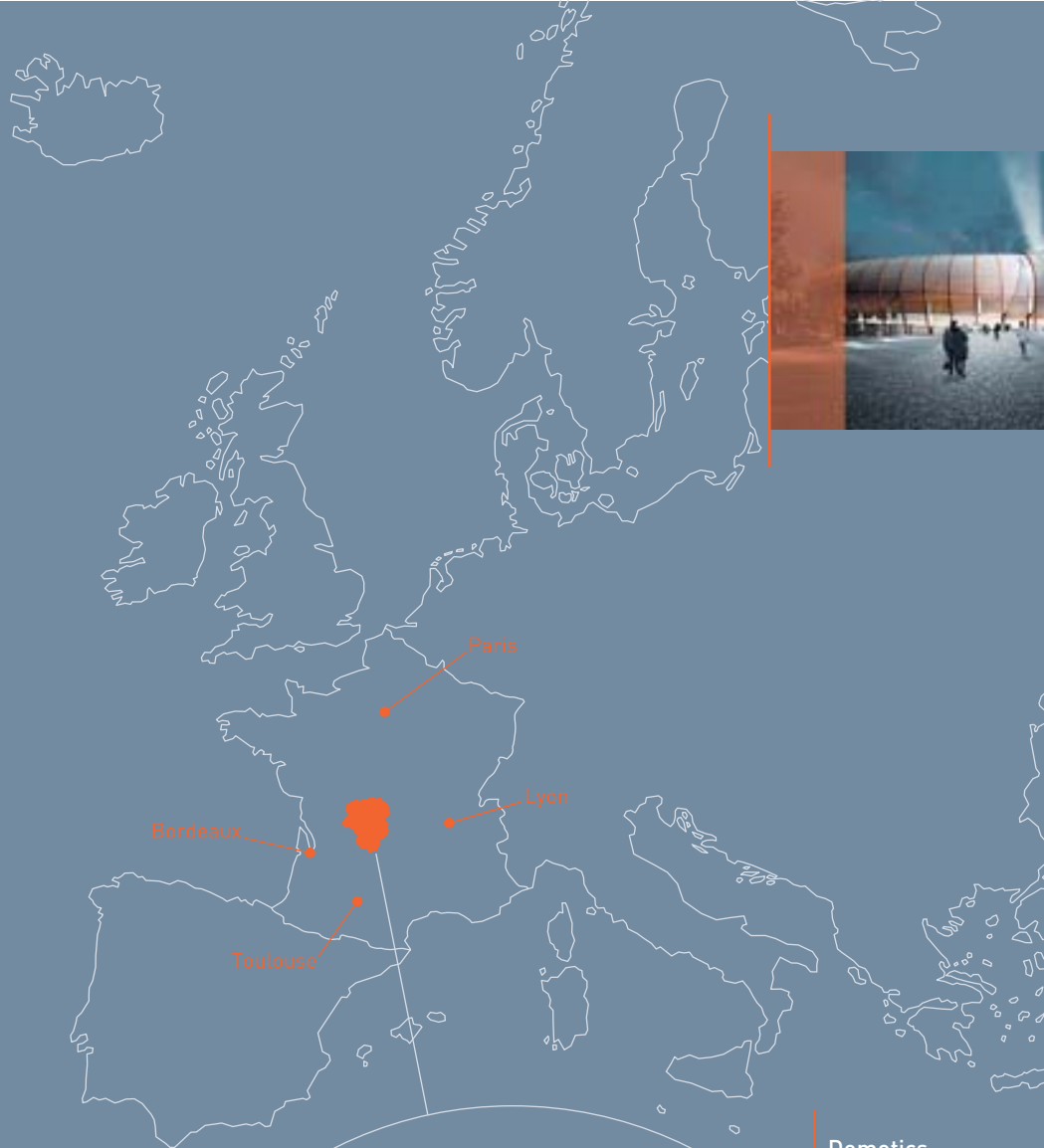


Christian Poumier,
Head of avionics business, Thales
"The methodology of the LiPSyS project will serve as an example for all future projects."

"LiPSyS, a perfect example of the cluster in action, set for a three-year run, started officially in January 2007. Like Elophys, its aim is to put research into practice. All of the players, including small and medium-sized companies, the university, and the industrial group, have a common proposition to offer. The development of rapid-sampling technologies is not only intended to improve productivity and stay in advance of the competition, the project will also maintain and develop employment. A strong network, integrated dossier and the creation of links between various enterprise cultures: all of the cluster's key values were of use when financing and consolidating LiPSyS. Elophys still plays a major role accompanying participants on a day-to-day basis and ensures the confidentiality of information."



Elopsys
practical
information



Domotics

Network of
technology
companies in
Elopsys

High-level
training
and R&D



1. To join Elopsys

When you join Elopsys, you are joining an active and unified network of high technology projects in the Limousin region.

You can benefit from technical and material resources - such as electromagnetic compatibility, and tests and measures - which can be made available for use by members of the cluster.

You can benefit from a targeted follow-up service: with progress reporting, indicators and studies, and detailed notes on demand.

You will have full backing when you approach foreign markets: presence at international exhibitions, as well as tools for information, help and international market intelligence at your disposal.

2. Joining a network

To join a network, just fill in the membership request form available on the Elopsys Internet site: www.elopsys.fr

3. Limousin and Nord-Lot

- Advanced training and R&D Limoges, Brive and Gramat.
- An applications domains, domotics, where the players are organised in Creuse at the heart of the Guéret domotics and health cluster.
- A network of Elopsys technology companies, mostly spread over the employment areas of Limoges, Brive and Nord-Lot.

4. Clusters of competitiveness

Faced with international and consequent national economic change, France introduced a far-reaching industrial policy: that highlights the capacity to innovate as one of the keys to industrial competitiveness, innovation through R&D is thus in the front line as a key issue and guiding principle for the future of competitive clusters.

5. Governance at Elopsys

The strategic committee:

- Makes decisions, pilots and validates actions, and steers the cluster's policies.

The experts committee:

- The experts committee: pilots the choice of themes for research and validates the technological quality of projects.

The operations team:

- Develops the cluster's activity.

6. XLIM, research laboratory

Five departments:

- DMI, Maths and IT
- C2S2, Components, Signal Circuits and High Frequency Systems
- OSA, Waves and Associated Systems
- MINACOM, Micro- and Nano-technologies for Optoelectronics and Microwave Components
- Photonics

Three transversal programmes:

- SeFSI, (Information Systems' Security and Reliability)
- TeraHertz
- IRO, Radar and Optics Imaging

PLATINOM technology and instrumentation platform for optics and microwaves.

Useful site addresses

- Elopsys: www.elopsys.fr
- Clusters of competitiveness: www.competitivite.gouv.fr
- Limousin region: www.cr-limousin.fr
- Limousin Expansion: www.limousin-expansion.fr
- XLIM: www.xlim.fr
- University of Limoges: www.unilim.fr
- A NOVO: www.anovo.fr
- DGA/CEG: www.defense.gouv.fr
- Legrand: www.legrand.fr
- Photonis: www.photonis.com

- To contact the cluster: contact@elopsys.fr



Competitiveness cluster in Limousin

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