Grenoble Isere Report

THE GRENOBLE-ISERE ECONOMIC DEVELOPEMENT AGENCY'S INTERNATIONAL NEWSLETTER - FRANCE > N° 52 < MARCH 2010

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Yassine Lakhnech, Pilsi scientific coordinator

Software and smart systems welcome to Pilsi

The International Software and Smart Systems Cluster (Pilsi) was launched in Grenoble-Isere in 2009 as part of the Grenoble University of Innovation initiative. It made sense to choose this particular location, home to a winner of the Turing prize, not to mention 500 firms and 38,500 jobs in information and communications technology. We talked to Yassine Lakhnech, one of the founders of this centre of excellence.

What prompted the setting up of Pilsi?

The Grenoble area is at the cutting edge of international research in two fields: micro and nanotechnology, on the one hand, and software technology, on the other.
We have here all we need – in terms of science, technology and industry – to rise to the challenges posed by miniaturization, nanotechnology and converging hard and soft-ware. Pilsi aims to bring together under one roof software technology specialists from research, university and industry in order to consolidate their expertise and turn the Grenoble area into a global reference for smart miniaturized solutions.

How is the cluster organized?

Pilsi was started by three national research organizations – the French National Institute for Research in Computer Science and Control (Inria), France's Atomic Energy Commission (CEA) and the National Centre for Scientific Research (CNRS) – and two universities, Grenoble-INP and Universite Joseph Fourier (Grenoble-1). It also draws on the Minalogic competitiveness cluster, which represents industry. The local authorities, which realized long ago that the best way of maintaining jobs in the area was to support innovation, are also fully committed to the process. Pilsi is organized around three main concerns: upstream research, applied research and training. It should ultimately bring together more than 1,900 people. The integration research centre (CRI) started in late 2009 is Pilsi's first major creation. Its purpose is to build bridges between industry and research to cut down time-to-market for innovative products, particularly smart miniaturized solutions. CRI, which is based on a unique system specific to each programme, will have a team of about 300 people within five years.

What about the projects under development and the outlook for the future?

There is no shortage of potential applications in transport, communications, energy and medicine. Our first programme, backed by CEA and STMicroelectronics, should enable us to deliver technologies for designing and programming multi-core architectures.
The goal is to give embedded technology processing power that is both high-performance and locally produced. Other projects are taking shape around ambient intelligence, low-power/high-performance calculators, and smart healthcare systems (autonomy and remote supervision, computer-assisted surgery, etc.). Pilsi's future home – which will house the cluster's demonstrators and technology platforms – should be completed by 2014. It will be a showcase for all that we are already capable of doing in terms of sustainable, ambient intelligence in building.

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Hilabs award

Grenoble's Human Interaction Laboratories (Hilabs) is an offshoot of the French National Institute for Research in Computer Science and Control (Inria) and Grenoble INP, specializing in interactive communication. The firm capitalizes on technologies that enhance the impact and interactive dynamic of public displays, developing in particular smart showcases and window-displays capable of adapting their content to suit passing shoppers and in response to touch impulses. Hilabs, which employs three PhD engineers, was awarded a prize by the Entreprendre network as part of the Oseo 2008 competition for aid to business.

Pyxis Technologies opens new French offices

Pyxis Technologies, a Canadian consultancy and software engineering firm, is the reference in "agile" approaches to software development for the French-speaking world. It has just opened a second office in France, at Bresson in the outskirts of Grenoble, assisted by AEPI. The firm is working with Orange, Nouvelles Frontieres and Grenoble University. In 2008 it reported €600,000 sales with a workforce of 12 in France, and $3.9m in Canada.

Grenoble-Isere biotechnology expertise

AEPI is publishing a brochure on the biotechnology sector which highlights the common ground between information and communications technology, and life science, one of Grenoble-Isere's key assets. Thanks to these convergent disciplines the area has established itself as a centre of expertise in diagnostics, new forms of treatment and drug-delivery technology, and healthcare engineering, three promising sectors for the future.

Grenoble leads the way for public-private partnerships

Grenoble comes top of a nationwide study by the French Ministry of Higher Education and Research focussing on cooperation between public and private research. This is valuable recognition for an area that has been building synergies between teaching, research and industry for over a century and now boasts 21 joint research organizations. The most recent example of this type of collaboration is the launch, at the end of 2009, of a partnership between Renault, AESC (a joint venture involving Nissan and Nec) and France's Atomic Energy Commission (CEA) in batteries and power cells.

> FEATURE <

Soitec betting on PV power

With the takeover of Germany's Concentrix Solar, one of the world's top suppliers of concentrator photovoltaic (CPV) technology, Soitec is joining the booming renewables market. The know-how that Soitec itself has gained in microelectronics substrates, particularly silicon-on- insulator (SoI) could play a key role in boosting the performance of PV cells and certainly complements Concentrix expertise in the production of CPV systems, an approach that substantially increases the output of solar power stations.

With the two firms joining forces it will be possible to offer the market even more attractive solutions in response to growing demand for renewable energy. CPV technology is best suited to countries with plenty of sun. Already used in Spain, Italy, Korea and the United States, it concentrates solar energy on high-yield PV cells with a relatively small surface area, thus reducing the cost of the materials involved. The acquisition will also give Soitec access to CPV technologies developed by the Fraunhofer Solar Energy Institute (ISE), of which Concentrix is an offshoot. ISE still owns a 20% share in the company, alongside its founders and management. The partnership also involves CEA-Leti, which has had an interest in Soitec since its inception.

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Above: a Concentrix-built concentrator photovoltaic array

Opposite: The CEOs of Concentrix and Soitec in Germany on the day of the announcement

Semi Europe–Grenoble Office launched

© AEPI

JEMI France integrates SEMI

Semi Europe-Grenoble Office has just been launched, following the integration of Jemi France as part of Semi, an international organization representing 2,000 firms (of which 11% are located in Europe), mainly suppliers of equipment and materials used in semiconductor production, but also other technologies (photovoltaics, flat screens, MEMS, etc.). Jemi France represented French suppliers to the semiconductor industry.

Located at Minatec, with the backing of local authorities, Semi Europe-Grenoble Office now enjoys direct access to the European microelectronics industry. It will be well placed to promote the industry of southern Europe, in particular France, its undisputed leader, with a leading cluster in Grenoble, home to 15,000 direct jobs in this sector. The start of Semi Europe will contribute to consolidating the industry in Europe. Already represented in the world's main economic centres (from Washington to Bangalore, through Beijing, Tokyo and Seoul), Semi supports industry growth by promoting international standards, lobbying, and organizing trade fairs and conferences.

> SPOTLIGHT <

What's new in software technology in Grenoble–Isere?

For several decades Grenoble-Isere has been a key global player in information and communications technology. It has succeeded in sustaining this dynamic over the years, constantly attracting new skills and technologies to feed the virtuous circle of innovation. The launch of the International Software and Smart Systems Cluster (Pilsi) is a good opportunity to take stock of ongoing developments.

Software technology in Grenoble-Isere accounts for 12,500 private-sector jobs, 2,000 more in public research and 2,200 degrees a year. The presence of firms such as HP, Sun Microsystems, STMicroelectronics, Bull, Orange Labs FT R&D and Xerox, combined with vibrant public research labs and top grade training resources contributes to Grenoble's supremacy in this field. The setting up of Pilsi (see front page) is testimony to this expertise. "The cluster will enable us to reach beyond conventional research projects and attract new talent to bring forward concerted research partnerships between industrialists and academics," explains Yassine Lakhnech, one of the founders of Pilsi.

Innovation in every direction

One of the challenges for software technology is to make digital devices and services more accessible by enhancing interaction between users and the virtual world. The launch of the Human Interaction Laboratories (Hilabs) is a good example of this trend. The start-up is deploying EyElight® technology, a remarkable innovation developed by Grenoble-based researchers which transforms any surface (glass, cardboard, concrete, etc.) into a touch-screen that reacts to movement of the hand. Drawn by the Grenoble-Isere dynamic, the Canadian firm Pyxis, which specializes in "agile" engineering methods and practice, opened an office in Grenoble in 2009 to train companies in how to use this approach to software development. Meanwhile Grenoble's training resources are also doing their bit towards innovation, witness the start of a web-mediated university shared between Grenoble, Bangalore in India and Tomsk in Russia! The system, developed by Grenoble universities in 2009, is a decisive move in preparation for international training in nanoscience for the future.

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Force and tactile feedback from seismic data on a haptic virtual worktop

Looking forward to Green IT

The term "Green IT" encompasses the methods, soft and hard-ware that contribute to reducing the environmental impact of information technology, with measures targeting the whole value-added chain from construction of the buildings which house data centres to the design of their component parts. This is obviously a most promising field, particularly when one considers that for high-performance computing 5% of the energy used is directed towards actual processing and the rest is absorbed by upkeep, cooling and security. "Five years ago computing made no allowance for energy consumption. All that mattered was performance. Today it is a crucial issue," says Lakhnech. The Minalogic competitiveness cluster is fully aware of the problem and has set up a Green IT working group, which already has about 15 projects on its agenda. The French computer firm Bull recently developed bullx, a super-calculator which combines ultra-compact design with one of the highest performance-consumption ratios in the world. Bull and Universite Joseph Fourier have established an emblematic partnership, the first step of which involves building an energy-saving computer room. Over the next three years UJF aims to halve electricity consumption in its server centres.

With an increasingly well organized value-added chain, top quality resources and concerted action by public and private players, strong public demand and a wide range of potential applications, software technology can look forward to a promising future in Grenoble-Isere.

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PC cluster at Inria Grenoble - Rhone-Alpes

Grenoble-Isere breaking new ground in biocomputing

At the crossroads between biology, mathematics and information technology, biocomputing is a discipline which brings together all the technology required to acquire and interpret data on genes, proteins and more largely cell systems. Grenoble boasts exceptional multi-disciplinary know-how in this field.

The Helix project enabled the French National Institute for Research in Computer Science and Control (Inria) to develop methods and tools for modelling and analysing genomic data. This biocomputing endeavour, emblematic of the 2000s, has now spawned two new projects – BamBoo in Lyon and Ibis in Grenoble. It has also produced Genostar, one of France's few start-ups in this field. Ibis is now exploring the biology of systems with a view to modelling and simulating cellular dynamics.

A second major centre of applied biocomputing research has developed around the biology, computing and mathematics laboratory in Grenoble of France's Atomic Energy Commission (CEA). Here the goal is to design and develop methods and tools for modelling and analysing proteins.

Lastly the ongoing Surgimag project is working on a miniature computer-assisted surgery workstation, using magnetic sensors, medicalized tablet PCs and embedded software. It is fuelled by close collaboration between small and medium-sized firms, research laboratories (CEA-Leti and UJF-TIMc) and Grenoble's university teaching hospital.

> TIME OFF <

Grenoble-Isere, congress city


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Embedded System Week, Grenoble, 2009

Every year the Grenoble area hosts an increasing number of international gatherings, particularly in the field of microelectronics and software technology. Last year saw the organization of two major conferences on embedded software: first the Conference on Computer Aided Verification, dedicated to formal methods for analysing hard and soft-ware systems; then the Embedded Systems Week, the world's main scientific event addressing this topic.
Grenoble will soon be hosting two other high-profile conferences for the first time: the Sixth International Nanotechnology Conference on Communications and Cooperation (INC6) will be spreading its wings at the Minatec centre in May 2010, after visiting Japan in 2008 and California in 2009; and Design, Automation and Test in Europe, the European event for electronic system design and test, will be held in Grenoble in March 2011.
Grenoble-Isere thus confirms its reputation as a most innovative venue. Witness the launch, last October, of the Grenoble Innovation Fair, a new international event aimed to encourage partnerships and innovation transfer between industrial firms, start-ups and laboratories. The fair featured 70 Grenoble-born technologies in IT, the environment, biotechnology and nanotechnology. About 500 industrialists, researchers, entrepreneurs and investors attended and the event will be held again in 2010.
The Grenoble development model, based on tried and tested synergy between training, research and industry, has enabled the area to bring forward a steady stream of new projects, while encouraging the exchange and dissemination of innovative ideas. Staging conferences is an essential part of this rationale and helps make Grenoble-Isere a particularly attractive location.

Sustainable development in action


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De Bonne eco-neighbourhood

The De Bonne neighbourhood, now nearing completion in the centre of Grenoble, was selected from among 160 French property development projects for the national EcoQuartier Grand Prix award presented by the Ministry of Ecology, Energy and Sustainable Development. The new neighbourhood covers an area of just over eight hectares and meets key sustainable development criteria: spatial density, ambitious energy targets (all the buildings use renewable energy sources and comply, at least, with French HQE standards). At another level the De Bonne development combines architectural quality with social diversity.
Grenoble has also been awarded a Ruban du Développement Durable award and was picked as France's top sustainable town by the magazine Lyon Capitale, in particular on account of its record on energy management, water quality, public transport, planning and waste management. The paper noted that Grenoble was the first major urban centre to adopt a climate plan, in 2005, an initiative which has already cut greenhouse gas emissions by 6%.

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AEPI is the Grenoble-Isere Economic Development Agency. It provides companies with all the information and assistance they require to set up business in Grenoble-Isere: economic data, offers of building land, offices and industrial premises, meetings with local decision-makers, help with overall project management, notably funding, available grants, etc. Come and contact us.

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