

EDITO

2018 ends with a series of investments that bring the future to our technology cluster and to the entire region.

Companies in the jewellery and watchmaking sectors, medical technologies and industry 4.0 are establishing their growth on new production bases deployed from Besançon on TEMIS. I would like to thank them for their confidence in our region, its skills and its fields of excellence.

With the Region, the Grand Besançon Urban Community will submit a major investment plan to benefit higher education, research and innovation; it will endow our ecosystem with a new university campus, appropriate to the 21st century.

This is because it is our responsibility to invest for the future of our industrial and academic communities.

It is they that educate and create the knowledge and jobs that will enable us to meet the many challenges revealed by the latest technological advances in both digital technology and in the industry or medicine of the future.

Attractiveness and development arise from this synergy between public and private players working together to enhance visibility and competitiveness. That is why we will continue our efforts in this direction.

With this ambitious backdrop, I wish you an excellent holiday season.

See you very soon

Jean-Louis FOUSSERET,
Président de TEMIS

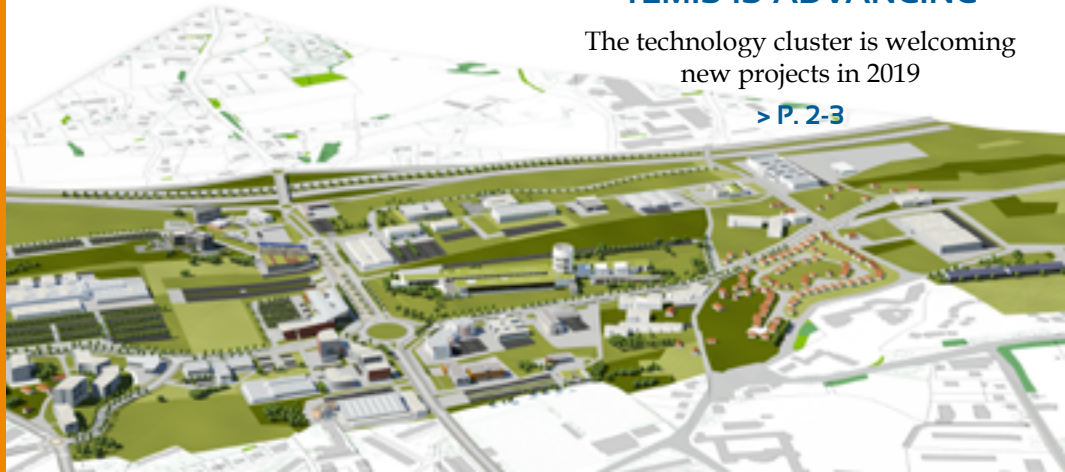


TEMIS
BESANÇON
TECHNOPOLE MICROTECHNIQUE & SCIENTIFIQUE

TEMIS IS ADVANCING

The technology cluster is welcoming new projects in 2019

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CAMPUS PLAN

A development contract to benefit excellence in higher education and research > P. 7

OCS CONFERENCE

Connected healthcare reviews GDPR and data security

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BUSINESS & ENTREPRENEURSHIP

Property projects
Growth



RESEARCH & INNOVATION

Micron d'or – Start-ups
Trophies

McGP

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SONAXIS

The SME will move into new premises at the end of 2019 > P. 3





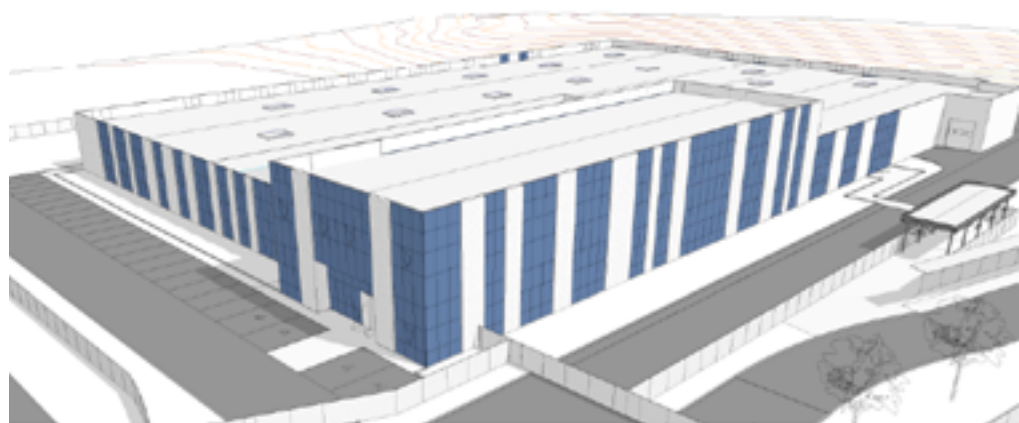
TEMIS IS ADVANCING!

The technology cluster, launched more than 20 years ago at Besançon, is undergoing major developments, always based on industrial excellence in the fields of precision and small-scale technologies. Aeronautics, aerospace, biomedical, industry 4.0, luxury and many more promising sectors are part of regional microtechnology industry. Focus on some investment projects.

NEW PRODUCTION FACILITY FOR THE MCGP GROUP

Specialist in the manufacture of small and large production runs of jewellery parts, the MCGP group is establishing its development in the Watchmaking, Goldsmiths and Jewellery sector, from Besançon, by following an industrial strategy based on the strong growth of skills in the jewellery sector. This includes creating more than 150 jobs at Besançon over 5 years.

The MCGP group took over the top-end Coringer jewellery workshop in Paris in 2010 and in 2012 it acquired the Losange group, better known as Franck & Person.



It currently operates two production sites, one in Chatillon le Duc in the greater Besançon area, the other in Moulins (Allier). MCGP stands out for its mastery of the full range of expertise in the sector, from casting to machining, CAMM, polishing and crimping. Its investment of more than €12m is part of the group's growth strategy, which includes a pilot industrial site equipped with the most modern production tools. MCGP will thus strengthen its position as a leading manufacturer over the entire jewellery range. The 7,000 m² building constructed by Vinci is part of a new environmental approach for an industrial site and is aiming for BREEAM certification while meeting the most demanding standards on both ecological and socio-cultural aspects.

"The MCGP-Losange group's choice reinforces that made by Grand Besançon, the Burgundy-Franche-Comté Region and the Doubs Chamber of Commerce, all united within TEMIS to create a park dedicated to industrial development and innovation through microtechnologies",
Jean-Louis Fousseret, President of TEMIS and Grand Besançon.

Covering more than 2 ha, the new MCGP site will contribute to transforming the park on the rue de Vesoul side, where other industrial projects are also under study. Construction began in October. MCGP will move in during summer 2019.



INNOTECH

The latest achievement of the TEMIS Technology cluster, INNOTECH offers an "industrial and scientific service" concept ideal for hosting high-tech activities. The 2,500 m² micro-nanotechnology building will be delivered in March 2019, for the watchmaker Audemars Piguet, which will base its after-sales service there. Premises remain available for rent. A few hundred square metres are already reserved on the 700 m² modular platform, making it possible to combine offices, laboratories and clean rooms, with technical facilities mounted on the roof.



TEMIS Technology Cluster | contact@temis.org

RELOCATION IN SIGHT FOR SONAXIS



Established in Besançon, the microtechnology capital, since 2002, the company left the Palente nursery in 2008 to set up in the TEMIS technology cluster in the USITECH building, as a rental solution.

This booming SME specialises in designing and manufacturing ultrasonic probes for non-destructive testing, used in sectors as diverse as aeronautics, automotive, nuclear power, energy, etc.

Cramped for some time now in its premises on Rue Sophie Germain, Sonaxis has acquired land on Rue Émilie du Châtelet, a stone's throw away, located between Breitling and IxBlue.

This direct investment will offer the whole team four times as much working space and ideal conditions to better support the company's development, without leaving Temis Park.

The ground has just been broken to begin constructing the first 1,800 m² tranche of the building. A second tranche covering an additional 1,000 m² is already planned. Sonaxis will move into its new premises at the end of 2019.

www.sonaxis.com

ONEFIT MEDICAL & THE AMERICAN MARKET

Created in 2011, the Besançon start-up specialises in designing and manufacturing custom solutions for orthopaedic surgery. In 2013, it joined forces with EOS Imaging, a quoted start-up specialising in medical imaging. This merger gave OneFit Medical the resources to expand internationally.

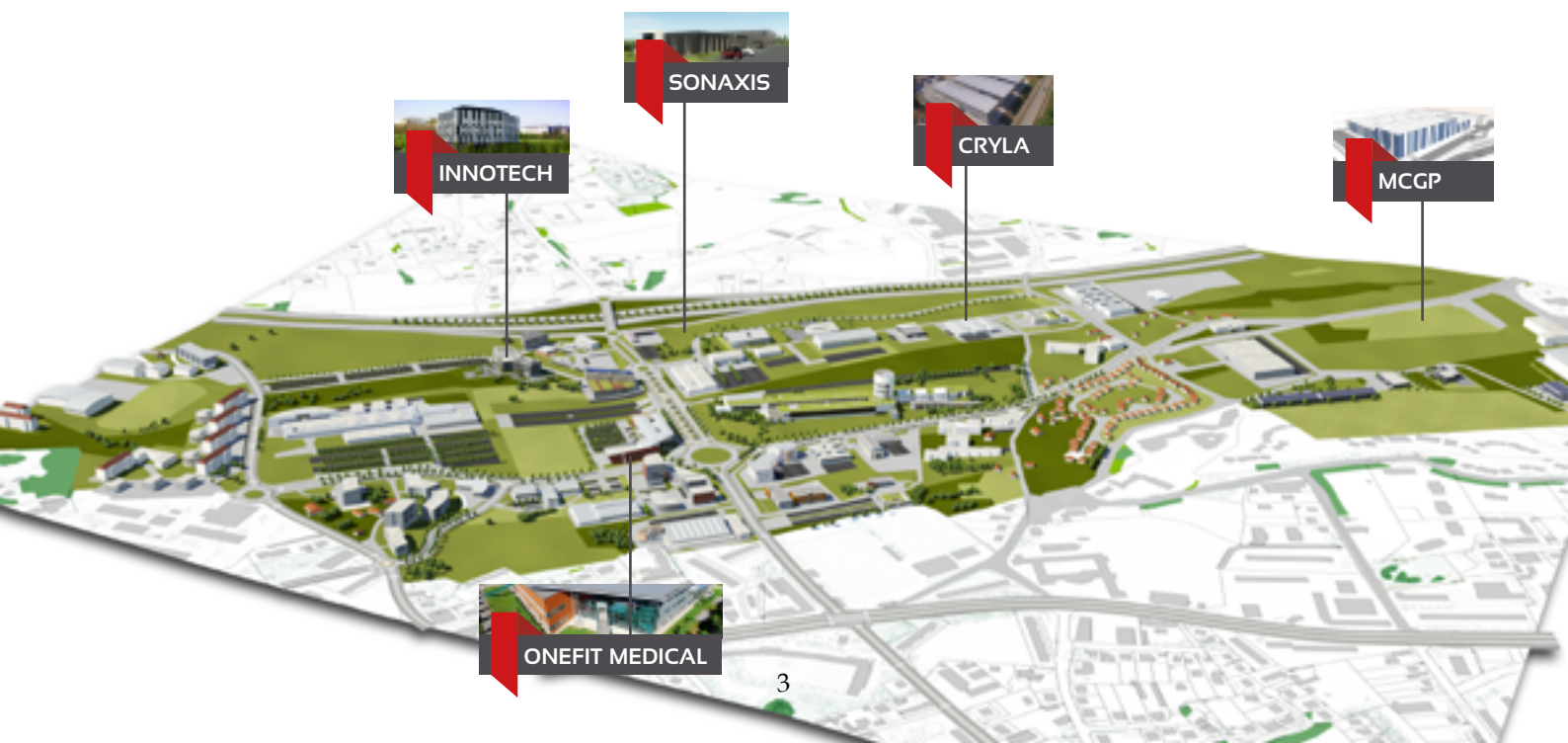
The company's ambitions are reinforced by the appointment of a new CEO to lead EOS Imaging from 1 January 2019. Mike Lobinsky, formerly President for North America, is now leading the group to consolidate growth in its largest market, North America.

www.onefit-medical.com

EXTERNAL GROWTH FOR CRYLA GROUP

Cryla Group is consolidating its position in the microtechnology subcontracting sector with the dual acquisition of Serode (Doubs), a specialist in press tools, cutting thick materials and deep stamping, and Lavoillette SA (Puy-de-Dôme), a specialist in multiple slide cutting and metal wire working. In this way Cryla Group is extending the range of its "cutting" division and its positioning on strategic aeronautics, medical and industrial markets, with the aim of achieving a position as European market leader for intelligent micromechanical components and assemblies within 10 years.

www.cryla.fr





WHEN BESANÇON DOCTORS BECOME BUSINESSMEN

By rewarding the best entrepreneurial initiatives of postgraduates completing their research as well as start-ups arising from academic research, the Challenge des Chercheurs Entrepreneurs recognises the entrepreneurial spirit.

For this 5th edition, several projects from FEMTO-ST and UTINAM laboratories in Besançon stood out, proof of the territorial dynamics in terms of research and emerging start-ups.

DOCTORS-ENTREPRENEURS COMPETITION

During the Burgundy-Franche-Comté regional final, 3 winners were rewarded among the 7 finalists, all three from the FEMTO-ST institute.

Vladimir Gauthier was awarded the regional 1st prize for his "CellSelect" project as well as the national 2nd prize. So he joins the Researchers-Entrepreneurs Club to be put in contact with investors and industrialists. "CellSelect" wants to market a new class of robotic fluidic chips capable of analysing and sorting biological cells. These chips will be able to capture rare, currently undetectable cells and are therefore a key step in developing future therapies and medicine.

In the region, the "Emergence" prize was awarded to Aliyasin El Ayouch, sponsor of the "Metabsorber" project, which offers a technology capable of transforming any material (wood, glass, plastic, etc.) into insulation or soundproofing. The "Jury's Choice" prize was awarded to Romain Viala for his MICAD project, which focuses on developing software to design musical instruments made of biosourced materials.

CONNECTION START-UPS

Fabrice Lallemand, President of AFULudine, won the "Jury's Choice" prize for start-ups. This start-up is developing a complete range of non-oil-based, environmentally friendly lubricants for material forming. The products are suitable for many applications, whether for trade or domestic uses. The start-up was created in September 2016 as a spin-off from the UTINAM Institute and has 10 employees. It has also just won 2nd prize in the major European competition for sustainable development companies.

+ www.chercheurs-entrepreneurs.com
www.femto-st.fr | www.utinam.cnrs.fr

COMPANY TROPHIES

The 6th edition of Franche-Comté Company Trophies named 8 winners last October, including two TEMIS companies: Worldplas in the "Innovation" category and Lymphobank in the "Start-up" category.

WORLDPLAS & SMART CITY

As a subcontractor specialising in plastic micro-injection since its creation in 1997, Worldplas has been able to reinvent its expertise to develop its own products: road signs made from injected thermoplastic.

Its director Denis Gunes plans sustained growth and wants to keep the activity in Besançon, where he already has 6,000 m² on TEMIS. The company stands out by offering adaptable signs (LED lighting, educational radar, broadcasting real-time messages, connected using active and passive sensors that allow cities to control their stock of signs and know their location and working life. The mobile tourist application "Ballade Vauban" reconstructs 12 historical Besançon sites in 3D and suggests a geolocated route using information relayed by road signs.



LYMPHOBANK BIOTECH NUGGET

Eric Robinet chose Besançon to create Lymphobank, where he found a scientific and technical environment conducive to creating his business. Its credo is to recycle "waste" from transfusion products to offer a blood cell bank, allowing CROs (Contract Research Organisation), pharmaceutical companies or public research laboratories (INSERM, CNRS, etc.) to choose the product best suited to their research. Thus, the start-up works closely with Burgundy/Franche-Comté EFS (blood transfusion service) while complying with ethical principles for blood donations. Lymphobank currently employs 4 people. The start-up located on TEMIS Santé in the EFS premises and is already considering transferring to BIO INNOVATION as soon as the platform is available.

+ www.worldplas.com

+ www.lymphobank.fr

MICRONORA'S MICRONS D'OR

Each edition of the International Microtechnology Biennale rewards innovative microtechnology and nanotechnology achievements, presented for the first time as part of the show. The 2018 Microns et Nano d'Or competition, undisputed proof of innovation, focused on 9 organisations that are pushing back the limits of the small and the precise, including 3 located on TEMIS contributing to the development of smart manufacturing.



FEMTO-ST LABORATORY

MICRON D'OR « MICROSYSTEM PROTOTYPES RESERVED FOR RESEARCH ORGANISATIONS »

The miniature robot awarded a micron d'or, designed as the most dexterous existing robot with 7 degrees of freedom, allows micromanipulation and micro-assembly in extremely confined spaces. Its kinematic structure was patented in 2018 and described in a paper published in the Journal of Micromechanics and Microengineering. Developed by the "Automatic and Micro-Mechatronics Systems" department of the FEMTO-ST Institute, internationally recognised for its expertise in the fields of robotics and artificial intelligence, this robot is designed for the industrial sector to handle small products or components quickly, the medical sector to perform minimally invasive surgical procedures, and for applications with tight space constraints such as manipulation in a scanning electron microscope (SEM). Three demonstration units have been built to validate the concept with different technologies and dimensions; the smallest demonstrator measures 1 cm³, also making it the smallest robotic structure in the world with 7 degrees of freedom!

+ Redwan DAHMOUCHE
www.femto-st.fr

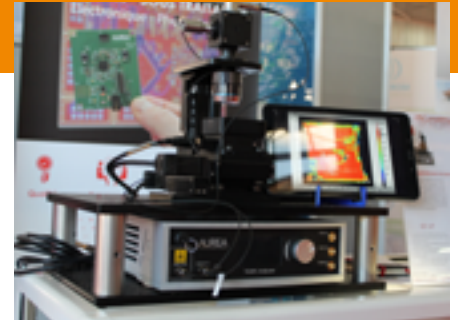


PERCIPPIO ROBOTICS

MICRON D'OR « DEVICES AND SUBASSEMBLIES INCORPORATING MICROTECHNICAL COMPONENTS »

Specialised in producing robotic systems for micro-manipulation and micro-assembly, the Percipio Robotics deep tech company was awarded a micron d'or for its "robotic tweezers" designed to simplify the manipulation and assembly of micro-components in the watchmaking, electronics or medical fields. Designed in collaboration with the Sorbonne Intelligent Systems and Robotics Institute, this "joystick" is a motorised control lever enabling operators to control robots more intuitively. With a patent lodged jointly by the two organisations and granted just before the Micronora show, a pre-industrial prototype was unveiled at the show. It generated much interest for potential uses, many broader than that initially planned, particularly in the medical field, for surgery where tweezers can give the surgeon force feedback and therefore allow better control of the operation. The company is therefore looking to produce and sell this innovation on a larger scale, while pursuing its core business, producing high-tech industrial machinery.

+ David HERIBAN
www.percipio-robotics.com



AUREA TECHNOLOGY THE JURY'S SPECIAL MENTION

Aurea Technology develops, manufactures and markets a new generation of high-performance optical measuring instruments, while offering optoelectronic services. The company was given a special mention by the jury for an optical measuring device consisting of a photon counter and a confocal microscope to characterise fluorescent or photo luminescent nano- and microsystems for their intensity and fluorescence lifetime. In particular, it allows non-destructive testing on solid materials but also on biological matter. This very high-performance instrument is a demonstration of Aurea Technology's expertise in developing and integrating high performance solutions. With its cutting-edge expertise, the company will be attending the Photonics West show from 2 to 7 February 2019 in San Francisco, a global photonics trade show that brings together expert companies in the field.

+ Johann CUSSEY
www.aureatechnology.com

DECA-BFC supports entrepreneurs in their pre-incubation and incubation stages to prepare them fully for the various steps to creating an innovative company.

The incubator currently supports 16 regional projects.

+ contact@deca-bfc.com | www.deca-bfc.org

THE COMPACT, SINGLE OR REPEATED USE μ TAMISAGE KIT



With a doctorate in paleoparasitology, Masoud Nezamabadi is renewing existing microscreening techniques with a solution that increases the speed, capacity and efficiency of the process. His solution is a compact kit adapted to customers and uses.

This kit will find applications in industrial and academic microscopic analysis laboratories in various sectors: medical, veterinary, food-processing, pharmaceutical, geological, etc. Its advantage: the kit can be used by biomedical laboratories to process pathogenic samples.

Masoud Nezamabadi received support from the BGE network, before entering the incubator last September, to refine his market research and business plan, and to produce a functional prototype in collaboration with the ENSMM engineering school and the Museum of Natural History in Paris.

The project won the "Emergence" category in the 2018 Talents des Cités regional competition.

+ Masoud NEZAM

FOCUS ON THE JOURNEY

The incubation period lasts 18 to 24 months, according to recommendations of the selection and monitoring committees.

Start-ups follow the entrepreneurship workshops: almost 120 hours of workshops given by experts to develop the entrepreneurial technical skills, expertise, interpersonal and many other skills needed to shape an entrepreneur.

Supported by a business manager and a sponsor, already the head of a business, the start-up receives funding for external services to back their project (intellectual property, market research, etc.).

DECA-BFC, with its network of regional and national specialists, also identifies the partnership needs linked to the business creation project.

BOOSTVAX MAKES VACCINES MORE EFFECTIVE



With his dual role as a pharmacist and scientist, specialising in vaccines, Philippe Gentine worked in industrial R&D for several years before starting his own business to develop BoostVax technology.

This aims to improve the efficacy of subunit vaccines by chemically modifying peptide or protein antigenic molecules. In this way, vaccines can be "boosted", whether they are aimed against infectious agents (bacteria, viruses, parasites) or cancers, for both preventive and therapeutic purposes.

Collaborations already exist with Joint Research Unit 1098 in Besançon and EA4558 in Montpellier.

Its incubation period will be used for technological and pharmaceutical development. BoostVax will also have to focus on carrying out R&D projects to design and develop candidate vaccines and on providing contract services (modification of vaccine formulations, analyses, technology transfers, etc.).

+ Philippe GENTINE



GRAND BESANÇON

OBJECTIVE: EXCELLENCE

As a campus city, Grand Besançon has 30,000 students spread over 3 campuses: human sciences, engineering sciences and health. These excellence themes are fostered by a strong link with research and the industrial infrastructure.

Synergie Campus is an additional facility supporting higher education and research; it offers a territorial partnership uniting regional socio-economic and cultural bodies, with the aim of increasing national and international visibility of the Grand Besançon Campus.

With shared governance, the Synergie Campus protocol focuses resources and skills, ensuring local policies are effective, particularly in association with the three other higher education centres in the Region: South Burgundy, Dijon and Belfort/Montbéliard.

Across Grand Besançon, the Campus Plan (see opposite) will support development of the TEMIS Besançon technology cluster, associated with the higher education centres.

ULTIMATE NEC CAMPUS

With the Grand Besançon metropolitan development contract signed on 12 November, the Burgundy-Franche-Comté Region is making a very significant contribution to the dynamics of the regional metropolitan belt and to the development of the region.

Between 2018 and 2022, the Region will back 29 projects in the Grand Besançon area with funds of €40.2m, making it possible to undertake projects valued at nearly €156m with the support of their partners!

This backing is resolutely aimed towards higher education and research, strengthening the dynamic of territorial excellence.

ISI FC/RELOCATION AND DEVELOPMENT OF THE BIOMEDICAL SECTOR

Strengthening the Institut Supérieur d'Ingénieurs de Franche-Comté (ISI FC) is planned in the context of strong development of healthcare-related activities. The internationally recognised school of biomedical engineering is the victim of its own success and now cannot accommodate all the applicants wishing to take the courses it offers... even though the clinical and regulatory needs of European MedTech companies are constantly growing.

Growth of the TEMIS Santé technology cluster, with new companies and training centres being established close to the University Hospital and the University health research department (UFR Santé), confirms the interest to support strengthening of this outstanding curriculum with a new site to educate 250 to 300 students.

SPORTS UPFR: AREA SPORT CAMPUS

The Sport campus is requalified in line with the overall project to redevelop the Bouloie campus, the aim of which is to create a 21st-century campus opening up the campus to the city through links with the Montrapon district and the TEMIS technology cluster.

The University encourages playing sport as a component of a balanced and fulfilling student life. Designed at the heart of a project to boost social life in the sector, the Aréa Sport Campus project lays the foundations for an integrated university life that looks to the future and the inhabitants.

CLAUDE OYTANA UNIVERSITY LIBRARY: CREATION OF A LEARNING CENTRE

This project aims to give the Campus a new central focus. This innovative structure, a unifying facility shared by the University and the École Nationale Supérieure de Mécanique et des Microtechniques (ENSMM), will include developments related to digital transition and promote new uses of the university community: co-working, OpenLab and reverse education. It will also be open to the public and businesses and will be linked to the Jardin de la Découverte et des Savoirs (Garden of Discovery and Knowledge).

DEVELOPMENT OF THE SCIENCE GARDEN

A flagship operation to renew the Bouloie campus, this facility dedicated to scientific culture draws on knowledge from the region (especially laboratories) to establish a link between science and society. A future open living site, in the image of knowledge under construction, it should act as a key for entry to laboratory research and highlight its impact on society. Targeting citizens, the general public, schoolchildren and the university community, it will mobilise researchers, doctoral students, students and the University's partners.

REGIONAL HEADQUARTERS OF CROUS

Establishing the regional headquarters of CROUS (Regional Centre for University and Social Works) is intended to strengthen the establishment of university services on the TEMIS-Bouloie site. The headquarters of the CROUS Bourgogne-Franche-Comté will be located close to the UBFC headquarters.

DATA SECURITY, AT THE HEART OF CONNECTED HEALTHCARE

For its 4th edition, the Conference on Connected Objects and Healthcare applications (OCS) reviewed GDPR, which is driving all organisations that process health data to take enhanced security precautions: 230 specialists were gathered together for this feedback.



Around the table, many Data Protection Officers from both public and private organisations, start-ups, and the undisputed authorities in the field: the French association of DPOs, ANSI and CNIL.

Organised by Prof Allaert and the Besançon Patient Health and Rights association, the conference highlighted the great regional expertise in data security and protection, and stressed the importance of raising awareness among teams even before implementing technical solutions. The presence of Ms



To read in December's newsletter: Interview with Professor Allaert

www.ocsbesancon.fr

Carroger, Managing Director of the Besançon hospitals, and Mr Fousseret, President of the Greater Besançon Urban Community, gave a powerful account of protecting citizens' data within the Besançon University Hospital, in connection with the city.

A healthcare innovation laboratory, the Burgundy-Franche-Comté region is at the forefront of developing connected healthcare objects. Proof of this is the launch of the I-diabetes smartphone card planned for January, with support from the Regional President, who will finance free access for patients. This project was born in the region and is being tested there before potentially being rolled out at a greater scale. This project bears witness to synergy in the action of ARS in e-medicine with public involvement such as from the endocrinology departments of Dijon and Besançon University Hospitals and private involvement such as from Cen Connect, but also groups such as the diabetic patients' association, the association of diabetes specialists in private practice and the emergency physicians' association.

The next edition of the conference will also address the theme of artificial intelligence related to the increasing development of telemedicine platforms.

_programme

7-8 February

Paris - France

SYMPOSIUM ON GENE THERAPY FOR RARE MONOGENIC DISEASES

More than 150 participants expected and 20 international speakers from industry, academia and biotech companies, to learn about recent advances and innovations in clinical gene therapy. TEMIS is associated with this event, organised by DIM Gene Therapy. On the programme: conferences with international Key Opinion Leaders, pitches and posters. www.gtrd-event.com.

6-7 February

Paris - France

PHARMAPACK EUROPE

Two days of exhibitions, conferences and innovations focused on pharmacological and biomedical technologies. TEMIS will attend to represent the BIO INNOVATION development centre www.pharmapackeurope.com/fr

5-8 March

Lyon - France

GLOBAL INDUSTRIE

The industrial event that brings together the Industry, Smart Industries, Midest and Toilexpo exhibitions, with a wide range of microtechnical expertise. Some 50 companies are exhibiting on the Burgundy-Franche-Comté regional authority stand (Midest - Hall 5). www.global-industrie.com/fr

12-15 March

Cannes - France

MIPIM

Grand Besançon and Temis will present the major projects in the region and developing business parks (Bio Innovation, Cité des savoirs et de l'innovation, Viotte Centre) to property developers, investors and landowners. www.mipim.com/french/

19-20 March

Besançon - France

GRANVELLE DAYS 2019

These eco-gatherings, organised by Grand Besançon and the Doubs Chamber of Commerce, on the theme "Work of the future, the future of work: deciphering what awaits us" will take the form of a series of conferences, workshops and open business sessions for students and professionals.

Information : www.temis.org | +33 (0)3 81 50 46 95 | contact@temis.org



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