

TEMIS⁵⁶news

MAY-JUNE-JULY
AUGUST 2018
www.temis.org

B E S A N Ç O N - B O U R G O G N E - F R A N C H E - C O M T É - F R A N C E

EDITORIAL

Key progress has been made for our ecosystem since it joined the French Tech "medicine of the future" network, which marked the government's recognition of the entrepreneurial trend in our region.

Currently in the completion stage for TEMIS Santé, from summer 2019, the Bio Innovation development centre will be the breeding ground for innovation in medical devices and blood technologies.

The health open-innovation marathon, Hacking Health Besançon, resulted in ideas and projects to meet the needs expressed by the practitioners, patients and assistants. We will organise it again next October.

The Village by CA celebrated its one-year anniversary and, following the example of the companies of the TEMIS Innovation incubator, will receive support from the ProPulseur acceleration programme, which is now operational.

Innovation also involves promoting the research, the excellence of which in micro- and nanotechnology was once again rewarded. The micro- and nanorobotics developed by the FEMTO-ST institute will serve industry, life sciences, and medical technologies alike. In addition, this research led to a laser microsurgery project and benefits from the leadership and guidance of the DECA BFC.

This dynamic is based on the synergies within each of the components of the ecosystem. The next edition of MICRONORA will be the opportunity to promote and implement this. I therefore invite you to read more about the French Tech collective organised by TEMIS, the Village by CA and the Microtechniques Centre, this time with a dozen companies and project leaders.

See you very soon,
Jean-Louis Fousseret,
Chairman of TEMIS



TEMIS
BESANÇON
TECHNOPOLE MICROTECHNIQUE & SCIENTIFIQUE

BIOINNOVATION

The health development centre, scheduled for mid-2019, is unveiled
> P. 2

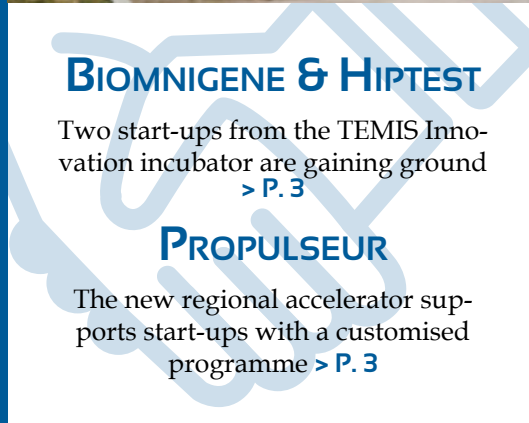


BIOMNIGENE & HIPTTEST

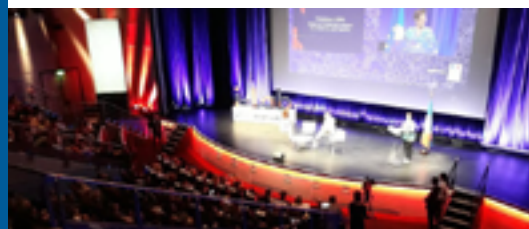
Two start-ups from the TEMIS Innovation incubator are gaining ground
> P. 3

PROPULSEUR

The new regional accelerator supports start-ups with a customised programme > P. 3



BUSINESS & ENTREPRENEURSHIP
French Tech – Micronora Incubator – Accelerator



TALENTS & CAMPUS
Excellence – Training Hackathon – I-Lab

ARCHEON

The start-up which won the I-Lab competition for its emergency medical devices > P. 5

MINAROB

An award of excellence was awarded to Nicolas Andreff, researcher at the FEMTO-ST institute, for his work
> P. 5

HACKING HEALTH

Join us in October for 48 hours of health innovation regarding the problems submitted by the hospital community > P. 7

AMAROB & METABSORBER

DECA BFC welcomes 2 promising new projects with a view to creating a company > P. 6



RESEARCH & INNOVATION
Materials – Surgery Experts – Marathon

BIO INNOVATION 4,000 M² OF RESOURCES TO DEVELOP HEALTH INNOVATION

The Bio Innovation development centre will provide a range of services, expertise, resources and basic equipment adapted to the development and pre-industrialisation of health technologies, to accelerate the transition of research projects to the clinic setting, and for which multi-disciplinarity (engineering sciences, life sciences, microtechniques, etc.) is a key factor for successful market release.

Bio Innovation will host different key components of the project support offer, such as the R&D and pre-incubation unit of the ISIFC, BIOTIKA and the research teams of the EFS, Inserm and the University of Franche-Comté.

In direct collaboration with the teams of the Clinical Investigation Centre of Besançon Teaching Hospital and the key players in the "health" sector, this centre will facilitate and intensify networking, promote project funding and is designed as a "one-stop shop" for services and resources.

The platform will offer a biological technical and research platform, a design, simulation and medical prototyping workshop to facilitate the obtaining and approval of the Proof of Concept, as well as L1 and L2-type modular and flexible laboratories and work spaces to carry out the initial experiments on cells and tissue. It will facilitate access to biological resources such as cell banks and lines and a blood donation unit for blood intended for research rather than medical purposes.

Bio Innovation will be set up at TEMIS Santé, close to the Besançon Teaching Hospital, built on a model of open and collaborative innovation; a host of public and private players will offer a range of services from project definition to Proof of Concept and the analysis of the status of the future product.

A "Blood"-related Biotech, Medtech and Diagnostic focus.

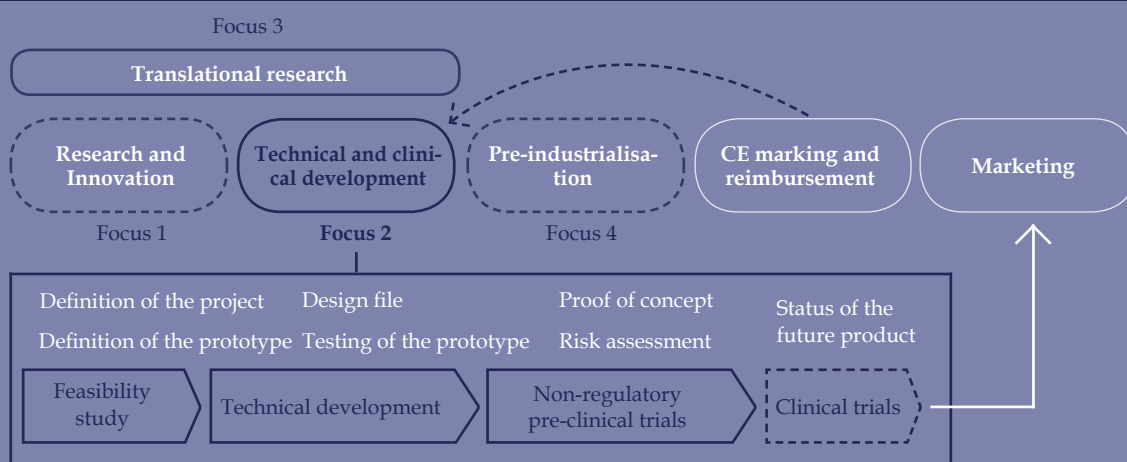
Support "early-stage" collaborations between engineers, clinicians, and entrepreneurs

Accelerate the development and marketing of miniature and embedded medical technologies

Promote the emergence of new diagnostic and therapeutic innovations related to the technologies and products connected to the blood sector

+ Bruno Favier
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The BIO INNOVATION service offer



2,300 m² of offices
700 m² of technological platforms
1 conference space
1 show-room
1 co-working centre

SEDIA Creation
Investors: Grand Besançon & Aktya
With the support of the Region and the Government
Implementation: summer 2019





FRENCH TECH #HEALTH TECH

In July 2016, Besançon joined French Tech's #HealthTech thematic network alongside 24 other players. Two years later, the results are very positive: the objectives set out in the application of April 2016 have all been achieved, namely thanks to the support provided by a circle of company managers (Stemcis, Smaltis Med'Inn'Pharma, Onefit Medical, Biomaneio, Statice), who were themselves supported by the local authorities and TEMIS. The network produced the "Challenge Drinks" and now the ProPulseur accelerator, as well as the support of start-ups at MedFIT, an international business convention, and the organisation of the regional Hacking Health event.... In November 2018 a new "French Tech Metropolis" certification phase will be launched. The stakes are high for the Bourgogne-Franche-Comté region, as obtaining this certification allows them to deploy more schemes for regional start-ups.

+ www.pmt-ih.com



BESANÇON
Bourgogne-Franche-Comté
FRENCH TECH



VILLAGE BY CA BESANÇON CELEBRATES ITS FIRST BIRTHDAY

Inaugurated in March 2017, the Village of Besançon now hosts 10 start-ups, one year after its creation. 15 Start Meet Ups were proposed with a view to promoting innovation in the region, training "start-uppers" and connecting them with national and international networks. The acceleration of start-ups is continuing with the implementation of the ProPulseur programme to overcome obstacles and develop skills.

+ www.levillagebyca.com/fr/village/besancon

MICRONORA

Visitors are invited to discover 12 regional start-ups on the regional French Tech booth, hosted by TEMIS, the Pôle des Microtechniques and the Village by CA. Meet them on Hall C, booths 103-107 and 202-206 :

- Medical sector : AmaRob, Aurea Technologie, Biomaneio, Cisteo Medical, IDC Medical, Iris lab, Lymphobank, Miravas
- Digital economy : Flexio, Livdeo, Morphée +, Shine Research.

+ www.temis.org/micronora-besancon.html



PROPULSEUR THE NEW ACCELERATOR

Applications to join the ProPulseur accelerator are opened as and when throughout the programme offered by the Pôle des Microtechniques. To join ProPulseur, the company must lead an innovative project, be located in the Bourgogne-Franche-Comté region, where it exercises its economic activity. The objective is to accelerate the market release of the company's product or service, by offering them personalised guidance, adapted to their requirements. These are identified through a process specific to ProPulseur, which guarantees the identification of areas of improvement and allows a dedicated and high-level roadmap to be proposed.

+ www.propulseur-bfc.com
acceleration@propulseur-bfc.com

BIOMNIGENE ON THE MOVE



Depuis From the TEMIS Innovation incubator, the start-up offers genome services to agricultural cooperatives, the pharmaceutical industry and to university and hospital research. Alexandre Douablin enlisted 4 partners to create BiomniGene and enter the field of this cutting-edge biotechnology, "complex to understand alone". The team claims to be multidisciplinary and offers a broad range of biotechnology and in vitro diagnostic services. Their strengths: speed and "added service" with a mobile laboratory that is moved close to the customer, bringing a rapid and particularly detailed response. After a one-year phase to mature, BiomniGene can now respond to its first orders.

+ Alexandre DOUABLIN
douablin.alexandre@biomnigene.com

HIPTTEST SUPPORTS THE BESANÇON VALLEY



Founded by 5 members at the end of 2015, the start-up now has a 15-person team and is opening 4 new engineering positions with a view to its development. The concept of Hiptest is simple: offer a platform to web-developer teams where they can test their applications continuously, from the idea up to the production stage. Two key words: automation and collaboration, which have clearly worked as 25,000 accounts have been created worldwide by developers in a variety of areas: Flowbird, Smartbox, Deliveroo, Cisco... Hiptest joined the Smartbear family with the goal of continuing its development internationally, namely in the USA, which still accounts for 50% of the software market.

+ Laurent PY
www.hiptest.com

LUXURY



PHENOMEN

Double or nothing, the managers of Phenomen rolled the dice when they launched a new French luxury watch brand in at Baselworld 2018. Developed in just 1 year, their Axiom mechanical watch caught the attention of visitors, distribution networks, and collectors. Alexandre Meyer chose a daring design, a nod to the driver's watch and his former job as a car designer, and paid particular attention to use and comfort. At his side, drawing on previous technical experience, Sylvain Nourisson was able to overcome a few challenges that add to the originality of the product: double-barrelled movement for 100 hours of battery life instead of the usual 60, retrograde minute and a retrograde, synchronised jumping hour, a variable-inertia balance or 3D curved hands...

The Phenomen watches have a 3 + 2 warranty, an additional quality guarantee still only offered by very few brands. A limited edition of 60 watches shall be offered for each of the 2 editions of Axiom, with the first deliveries in October. Dubai, Singapore and the United States are some of the target markets for this watch, which will meet the demands of exceptional customers.

+ Alexandre MEYER
www.phenomen.fr

EPHJ :

The regional sector was represented by 24 companies, including 13 from the collective organised by the Bourgogne-Franche-Comté International Chamber of Commerce and Industry. Everything needed to discover a sample of the regional know-how, offering solutions across the entire value chain.

MEDICAL

CISTEO MEDICAL

Founded 8 years ago, Cisteo Medical develops and manufactures medical devices under subcontracting agreements, and can create products from A to Z on behalf of clients. With some 60 clients in its portfolio, the company offers medical uses in a variety of fields, and studies all types of projects with the shared theme of microtechniques, and now electronics.

With the move from the incubator to the business service centre, Cisteo Medical was able to rely on the ecosystem to develop under the best conditions. Proof of this is its presence at Medfit as part of the collective, which enabled it to focus on "efficiency through targeted visits".

The company already has 2 projects from this move, and was able to obtain new contacts in Belgium thanks to interclustering actions.

+ Christophe MOUREAUX
www.cisteomedical.com



MEDFIT :

Some fifteen regional players were able to benefit from the collective organised by TEMIS and Innov-Health for the 2nd edition of this business convention, held in Strasbourg, which contributed to the visibility and reputation of the local medtech ecosystem.



AVIATION

EUROSATORY :

The AEROpTECH cluster and 11 companies represented the regional sector, with the two-fold aim of conquering new markets and increasing their export business, in the context of both the GICAT, and the collective organised by the Bourgogne-Franche-Comté International Chamber of Commerce and Industry.



CHRONOTOOLS

Founded in 2017 by David Lam and Nicolas Conche, Chronotools offers cutting tools intended for the manufacturing industries. The company is active in cutting-edge fields such as aviation, medical, automotive, watchmaking, and energy, and stands out by creating very high-quality tools in small quantities. Led by the ambition to reinvent their profession to focus on the customer, the company has taken the time needed to finalise a range of luxury micro-cutting tools. The 3-person company set up its premises in the incubator at the start of 2018, and launched its commercial development in the spring, by presenting its SIAMS offer within the regional collective and in the start-up area of the EPHJ. This event marked Chronotools' arrival on the market, with the opportunity to present its new products to more than 200 contacts. David Lam emphasises that the concept was "met with a great deal of enthusiasm from Switzerland", while he also made contact with prospects in India, Spain and England. Satisfied by this "international showcase", the managers want to repeat the experience next year.

+ David LAM
www.chronotools.fr



MEDICAL DEVICES TRAINING

Besançon has been hosting the key training course in medical devices for 6 years already – not surprising in a region focused on health innovation. For its 6th edition, the “Rentrée du DM” offers 2 intensive days focused on the clinical aspects and inspections and audits of medical devices, most notably with the presence of 5 notified bodies among the attendees. Co-organised by the ISIFC, the leading engineering school, and the microtechniques centre with its health cluster, this edition is also the perfect opportunity for exchanges thanks to the 24 stands at the Exhibition Village, and the networking evening offered on 13 September to meet regional companies and start-ups in the health sector.

+ www.larentreedudm.com

ACTINSPACE BESANÇON KEY FIGURES

1 challenge: reuse space technologies to design applications that can be used in the field during this international hackathon, held in several cities at the same time. 24 hours and 8 teams for this 1st edition in Besançon, organised by the AEROPTeCH cluster and bringing together the regional engineering schools. 11 regional ecosystem experts set out to direct the participants, including Move In Space, the winning team, which offered a “real, carefully designed product, achievable in the short-term”, in the form of giant, self-deploying tents that use space hinges and the concept of origami.

SCIENTIFIC GRAND PRIX FOR NICOLAS ANDREFF & MINAROB

In June, the Charles Defforey Foundation awarded its Scientific Grand Prix to Nicolas Andreff for his research and work on the topic of “Mechanics, robotics and artificial intelligence”. Recognition of the career of an individual who left the industrial robotics sector for the biomedical sector in search of more ambitious and innovative topics, but also encouragement and support for the work carried out by the MiNaRob team he manages. Created in 2012 within the Femto-St institute, the aim of the MiNaRob team (which stands for Micro/Nano/Robotic Biomedical) is to transfer microrobotic know-how to medicine. MiNaRob is developing a scientific activity focused on 4 areas: image-guided surgery, micromechatronic biomedical design, contactless microrobotic guidance and intracorporeal dexterity. The project united a permanent team of 9 people around a common goal: to find how technology can help meet societal health needs. Companies were created from this (Percipio Robotics, Amarob) and original ideas are being developed. All that’s left is for the team to grow, to continue to innovate...



+ Nicolas ANDREFF
<http://teams.femto-st.fr/minarob/>

ARCHEON WINNER OF THE I-LAB PRIZE FOR DEEP TECH

Six months after its creation, Archeon won the 20th I-Lab competition, which recognises start-ups developing the most promising ground-breaking innovations, alongside Nextbiotix and TissuAegis, the 2 other regional winners. Yet more recognition for a real success story: in April 2018, it was awarded the French Tech Emergence certification, and was



Alban DE LUCA +
www.archeon-medical.com



voted Best Start-up by the AFIB Congress in 2017. The start-up develops devices for emergency medicine and first aid, with the aim of bringing cutting-edge tools to the field, which are high-performance, intuitive and require little technical operation. First project underway: a cardio-pulmonary resuscitation device. Archeon was developed from a long, 6-year collaboration between two engineers, Alban De Luca, specialised in biomedical technologies at the Besançon Teaching Hospital, and Pierre-Edouard Saillard, employee at Polycaptil, specialist in embedded electronic systems. Proof of credibility, the I-Lab competition should accelerate the development of Archeon by facilitating networking with investors and commercial partners.



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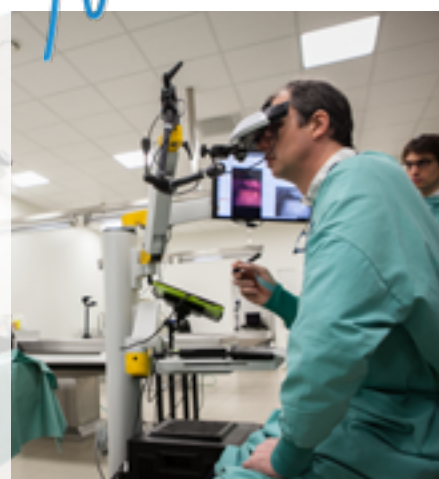


DECA BFC NEWS

The DECA-BFC association (Bourgogne-Franche-Comté academic entrepreneurship programme) was created in November 2017 by the higher education and research institutes of Bourgogne-Franche-Comté at the instigation of the government and the Bourgogne-Franche-Comté region. Working throughout the region, in synergy with innovation schemes and players (SATT SAYENS, development agencies, business accelerators and incubators, etc.), the structure is, in particular, intended to provide customised support through a business manager and company director for innovative business creation projects primarily stemming from or linked to public research. They can be led by doctors, engineers or student winners of entrepreneurship events. Another goal of the DECA-BFC is to manage the network of academic entrepreneurship schemes, in partnership with the higher education institutions, with a view to optimising the flow of innovative projects.

AMAROB IMPROVES VOCAL CORD SURGERY

AmaRob offers a robotic system to carry out intracorporeal laser surgery, and in the short-term, is focused on vocal cord surgery using an endoscope fitted with a micro-robot, which directs a laser during the operation. This device is part of a new generation of instruments that are less invasive for the patient, allowing for less disruptive medical operations. Developed in collaboration with the ORL service of Besançon Teaching Hospital, this breakthrough technology meets a proven clinical need, and will allow for better-quality, safer, and quicker outpatient operations. Born from a European project and developed at the FEMTO-ST laboratory, the project is now aiming for large-scale development through the business acumen of Sergio Lescano. Initially a mechatronic engineer in his home country of Peru, he joined the project as a PhD student, before becoming the leader of the future company. While awaiting the creation of the company, scheduled for the first half of 2019, the project has gained momentum: a French Tech grant (from BPI France) obtained in September 2017 enabled the Amarob trademark to be registered and a new industrial prototype to be developed, while the business plan is being prepared thanks to assistance through HEC's Challenge + programme. Finally, Amarob is supported by DECA BFC, a stage that Sergio Lescano considers "vital" as it provides welcome credibility when entering the market and passing the crucial CE marking phase, which is essential for medical devices.



Sergio LESCANO
sergio.lescano@femto-st.fr

METABSORBER NEW MATERIALS TO PREVENT NOISE POLLUTION



Improving sound comfort and acoustic insulation using metamaterials – this is the objective of the METABSORBER project, led by Aliyasin El Ayouch and Youssef Tejda from the Femto-St Institute, with the support of Labex ACTION. Directed by Abdelkrim Khelif, CNRS Research director, with the participation of Mahmoud Addouche, Lecturer-researcher, the team developed a breakthrough technology known as "acoustic metamaterials" which gives any materials, such as wood or glass, a high level of sound insulation and acoustic comfort. Following the submission of 2 patent applications and a development programme supported by the CNRS and the SATT Sayens, the project requested and obtained the assistance of DECA-BFC in order to create a spin-off. The company firstly intends to develop professional furniture combining function and aesthetics, and will ultimately target high added-value sectors such as the automotive, building, aerospace and aviation markets.



Aliyasin EL AYOUCHE
aliyasin.elayouch@femto-st.fr

HACKING HEALTH HEALTH INNOVATION MARATHON

Just like the first edition, “Hacking Health” identifies problems encountered by healthcare professionals, patients, or assistants in the exercise of their duties or their daily life. These problems, and many other challenges, are submitted to the group of innovators brought together for the “Hackathon” from 19 to 21 October at Besançon’s Saint-Jacques hospital. Over these three days, the participants will form teams that combine a maximum of expertise to prototype viable solutions. The results are presented at the end of the hackathon and a prize is awarded to the most promising concept. 12 projects, out of a total of thirty, can already be viewed online. Like last year, the aim of Hacking Health Besançon is to develop the medical device sector of regional industry, and promote mechanical projects as much as purely digital ones. Engineers, designers, 3D designers, and mechatronic specialists are therefore all sought-after profiles, to integrate projects focused on independence.

The issues are diverse, ranging from the need for better analysis of the symptoms of scabies, to the improvement of the independence of persons using a manual wheelchair or those with cognitive impairment. The greater Besançon area, the Microtechniques centre and the Besançon teaching hospital, the joint organisers of Hacking Health, hope to see the participation of numerous regional companies, who could provide their expertise and know-how to help these great projects succeed. The leaders will be assisted for 3 months after the marathon to facilitate the creation of new activities or companies, even more than last year. Finally, an innovation for 2018: regional start-ups can exhibit their products at the Innovation Showroom, which will be organised alongside the Hackathon.

+ besancon@hacking-health.org
www.hh-besancon.fr



INNOVATION COUNCIL

Recently established by the government, this body will decide on the direction of funding for innovation and industry and will draw up the roadmap regarding national innovation policy, notably for deep tech. Objective: simplify the funding system. The 6 qualified members of the innovation council include Marie Meynadier, CEO of EOS Imaging, the subsidiary of which, OneFit Medical, is established in Besançon; as well as Jean-Michel Dalle, well known within the RETIS national innovation network.

BESANÇON TEACHING HOSPITAL'S INNOVATION DAY

Organised every year since 2011 by the Clinical Investigation Centre at Besançon Teaching Hospital (INSERM - CIC), the Microtechniques Centre and the FEMTO-ST Institute, the purpose of the Innovation Day is to bring together doctors, industrialists and researchers in order to discuss the concrete issues raised by the user and therefore “reinvent the hospital of the future”. Focusing on the topic of “innovation by design” and visits to the obstetrics gynaecology and paediatric and neonatal intensive care departments, once again this year, several proven cases of partnerships between industry and the hospital departments were brought to light. Therefore, following the example of MIRAVAS and its treatment of varicose veins using steam, it was explained how a medical device can be used at the Teaching Hospital. One example of collaboration between



the Teaching Hospital and OneFIT Medical also demonstrated the benefit of closer ties with the Teaching Hospital for industrial validation.

Thomas LIHOREAU
www.chu-besancon.fr/la-recherche/linnovation/evaluation-des-dispositifs-medicaux.html

INNOTECH MORE SPACE FOR MICRO- AND NANOTECHNOLOGIES

With a delivery objective for the start of 2019, INNOTECH, the latest creation from the TEMIS Technology Park, offers an "industrial and scientific service", ideal to host cutting-edge technology activities. Spaces are available.

in_brief



2,500 m² of space dedicated to micro- and nanotechnology is currently under construction at TEMIS to offer a space to grow for companies, namely young start-ups, which, having taken on their market, quickly need to find a bigger space before they feel cramped.

This creation by the architect, Philippe Donzé, allows the development of a customised product, to expand the existing themed building offer within the technology park, following the example of the MICROTECH and USITECH buildings.

At the heart of the technology park, close to the FEMTO-ST institute, INNOTECH offers modular spaces that enable offices, laboratories and clean rooms to be combined, in a particularly smart setting. Technical spaces are also planned on the roof.

While the entire 2nd floor has been reserved by the watchmaker Audemars Piguet, which will use the space for its after-sales service, a serious option is under consideration for the 1st floor, and applicants are already lining up for the ground floor. Some spaces remain available, with a maximum surface area of 700 m² which can be developed and divided as required.

Two formulae are possible: purchase or lease, with spaces offered at competitive prices and low overheads. Applicants for the space are invited to get in contact very quickly...

 **Technopole TEMIS**
contact@temis.org

calendar

Besançon - France

TEMIS Innovation's Breakfasts

18 September - 8:30 am

Presentation of the two latest companies to join the incubator: BiomniGene and Archeon

16 October - 8:30 am

Presentation by the AER of the service offer of their Innovation Centre

contact@temis.org

13-14 September
Besançon - France

RENTREE DU DM

2 days of intensive training in medical devices, organised by the ISIFC and the Microtechniques centre, focused on the clinical aspects and inspections and audits. Networking dinner on Thursday evening, open to all.

www.larentreedudm.com

25 au 28 September
Besançon - France

MICRONORA

Meet at the French Tech stand (Hall C Stand 103-107/202-206) in the middle of the microtechniques room to discover 12 regional health and digital start-ups.

www.micronora.com

From 24 Sept. to 19 October
Bourgogne-Franche-Comté - France

INNOVATION MONTH

More than 40 events offered based on the topic of "Innovative training and teaching methods" during this annual regional innovation meeting. Launch on 24 September from TEMIS Innovation..

www.mois-innovation.fr

19-20-21 October
Besançon - France

HACKING HEALTH

48-hour marathon to solve the problems submitted by patients and practitioners. Registration is open to join the teams, regardless of your skills.

www.hh-besancon.fr

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