

Success Stories
of
Medicen Paris Region



Medicen Paris Region celebrates ten years of activity on 5 October 2016. Since being set up, the business cluster has proven its ability to efficiently facilitate the Paris Region health chain and to turn scientific innovation into therapeutic and economic value.

Medicen is Paris Region's unique meeting point of academics, major industrial groups, SMEs and local authorities around a common objective: innovate and turn innovation into industrial processes.

Benefiting from an ecosystem accounting for almost 50% of the national research on life sciences and from an economic dynamism that makes Paris Region the most important European region, Medicen has become a key player in the health solutions sector.

Medicen's strengths lie in its unique and exceptional network of clinical and academic stakeholders, as well as in the creativity and the dynamism of the SMEs, linked to larger companies.

The «Medicen» brand is built on its ability to drive, finance and bring collaborative projects on the market.

You will find in this brochure several success stories of Medicen Paris Region's activity, as well as the dynamism and commitment of its members.

A decade is a juncture, and in the next 10 years we must clearly step it up. The environment and ecosystem will continue to evolve even faster than before. We will be playing a leading role, as a catalyst and facilitator for scientific, clinical and industrial stakeholders in order to promote the exceptional strengths of our region so as to turn them into economic value and available jobs.

Medicen represents an exceptional tool at the service of all those who have the drive to turn the Île-de-France Region into one of the world's health industry capital.

We are proud of what we have achieved so far and we will continue to rally around to face the new challenges head on.

Christian Lajoux
President, Medicen Paris Region

Table of Contents

**Collaborative projects:
from development
to the final
product**

OSSEOMATRIX - P 20
BIOMODEX - P 22

CREMEC / IMODI - P 8
HECAM - P 10
FLEXMIM - P 12
DEXEOS - P 14
IRIMI - P 16
DOSEO - P 18

**Coaching
for SMEs**

**Appeal
and promotion
of the region**

BMSYSTEMS - P 24
INCUBDAY - P 26

BIOSPRING 2015 - P 28
eHEALTH WEEK 2015 - P 30
DARE AND BOSTON - P 32

**Global level:
"in" and "out"**

Summary:

Medicen Paris Region carries out its activities on several levels:

- > Development of collaborative, multidisciplinary and innovative projects, supporting them to facilitate the marketing of innovative products and the creation of economic value and jobs;
- > Supporting the SMEs, members of its cluster, in managing their growth by offering them personalised or general services;
- > Promoting the wealth of the Paris Region by connecting the innovation stakeholders: SMEs, large companies, clinicians, academics or financial partners;
- > International development focused on 2 pillars: the “in” to promote the appeal of the area, and the “out” to help the internationalisation of its members.

1 > Promoting innovative collaborative projects and turning them into therapeutic and economic value:

The cluster is structured around 5 “strategic fields of action”, within which it allows the development of public/private collaborative, multidisciplinary and multi-technology projects: biological diagnosis, diagnostic and interventional imaging, regenerative medicine and biomaterials, ICT and healthcare, translational medicine.

The objective of the projects supported by Medicen is to create economic wealth: marketing of products or product lines and generation of sustainable jobs.

The projects supported by Medicen have evolved over the years: they have grown in importance and complexity, combining multiple environments partners (pharmacy, medtech and biotech, digital providers, etc.), and now have a broader and more important impact on the medical care. Their funding has also changed. In the beginning, the projects were mainly funded by way of the Single Inter-Ministry Fund (Fonds Unique Interministériel, FUI). Then they were provided with the tools of the Investing for the Future Programme (Programme d’Investissements d’Avenir, PIA), as well as the instruments adopted for the general interest projects, the Competitiveness Clusters Structuring Projects (Projets Structurants des Pôles de Compétitivité, PSPC).

Since 2005, 284 R&D projects have been endorsed and funded by Medicen, accounting for a total investment of more than Euro 1 billion, and 49 innovative products have been marketed for 55 completed projects.

The projects below are a clear illustration of this progress:

- > A FUI project, which evolved into a structuring project (PSPC): CREMEC/IMODI;
- > A project, spawned by the combination of an industrial proposal and a medical need, which caters to the entire pathology management (from the diagnosis to the follow-up): HECAM;
- > A multi-technological and multi-disciplinary project, involving healthcare and ICT professionals: FLEXMIM;
- > Projects leading to the marketing of products, nowadays available on the market to healthcare professionals: DEXEOS, IRIMI;
- > A platform dedicated to radiotherapy training, quality and safety: DOSEO.

2 > Supporting SMEs by offering personalised services to the business cluster’s members:

One of the major roles of Medicen is to support the growth of Paris Region’s SMEs and start-ups: helping them develop their projects, expanding their knowledge, gaining visibility, finding public and private partners and funding.

The services offered by Medicen, implemented with the financial support of the Region and in some case of ERDF, allow SMEs to benefit from personalised training and coaching services in order to develop their knowledge and skills. The offer focuses on 4 different levels: strategic, financing, international, and management.

As part of the financing offer, the business cluster, via the “Entreprise Innovante des Pôles” endorsement, developed with France Innovation, puts SMEs in contact with potential investors. Therefore, since 2011, 26 SMEs have been endorsed as EIP (Entreprise Innovante des Pôles, Cluster Innovation Company). More than half of these start-ups have successfully raised funds.

Medicen shows here 2 SMEs that benefited from these personalised support services: OsseoMatrix and BIOMODEX.

3 > Highlighting the appeal of the Paris region and fostering connexions:

As a leader in the life sciences sector, Medicen plays a unifying role within this ecosystem by facilitating a unique network of providers, SMEs and academic partners, by participating in major regional developing programmes or national and international events. This centre thus generates a “cluster” effect, enabling meetings and opening links to initiate collaborations. Finally, another objective of the cluster is to understand, share and explain the respective roles of the various stakeholders in this ecosystem to improve the coordination of the actions.

Below are two presentations of this axis:

- > Scientific collaboration between Bio-Modeling Systems and CEA;
- > INCUBDAY.

4 > Promoting the international development:

Medicen, a global competitiveness cluster, focuses its activities on an international level along two main lines:

- > The “in”: contribute to the appeal and wealth of Paris Region and promote it to bring foreign companies to open offices here;
- > The “out”: help SMEs grow their business on the international market.

Medicen’s involvement in international events, such as BIOSPRING and eHealth Week, the implementation of the programmes DARE and Boston Soft Landing perfectly highlight these points.

**Encourage the development of innovative collaborative projects:
 > a FUI project, which evolved into a structuring project (PSPC)**

From CReMEC to IMODI, the first national sector dedicated to the development of cancer models to improve treatment personalisation

Thanks to the coordination by the Medicen Paris Region cluster, 54 human colorectal cancer in vivo models have been developed by the members of the CReMEC project between 2006 and 2010, in order to fast-track the development of new therapies. The Experimental Cancer Models Resource Centre (CReMEC) was one of the first Medicen FUI projects. Its outcome led to the creation of IMODI, a «Competitiveness Structuring R&D Project (PSPC)», dealing with the development and characterisation of 9 other types of cancer, leveraging the expertise of 18 partners with an overall estimated budget of €41 million.

CReMEC's objective was to create a platform that would bring together all complementary resources and know-how required to develop a complete clinical, pharmacological, histological and molecular database, and a range of models of human colorectal cancers, representative of the clinical histopathological and molecular diversity, in order to study new cancer therapies.

For the completion of this platform, Medicen brought together 13 partners around Oncodesign, the SME that initiated the project: 3 pharmaceutical groups (Ipsen, sanofi, Servier) et 10 academic teams (Cancéropôle Île-de-France, AP-HP, CNRS, INSERM, Institut Curie, Institut Gustave-Roussy and Université Paris VII Diderot) have also worked on this project. The pooling of skills of the various partners, from the collection of the tumour in the operating room to the models' molecular and pharmacological characterisation, is THE key to the success of this initiative.

The CReMEC project has received in 2006 €2.4 million from the Government as part of a Single Inter-Ministry Fund (FUI) call for funds and funding of €2.5 million as industrial investment. Nine doctoral students and a project leader were recruited to complete this programme.

The IMODI project was first created by Medicen in September 2009 as a follow-up to the CReMEC project. Since 2011, the project received 3 new industrial partners (Pierre Fabre, Transègne, Biofortis) and 12 public partners (research laboratories and hospital centres), the whole being brought together by 5 funding clusters located all over France. In March 2013, Oncodesign, the project initiator, and the Investing for the Future Programme (PIA) led by Bpifrance announced that the new project called IMODI received €13.4 million and was prize winner of the «Competitiveness R&D Structuring Projects - PSPC» call for projects.

The IMODI project, which is still under way, was designed to facilitate the selection of effective treatments against 9 cancer pathologies, by pooling the resources allocated to the development, characterisation and improvement of over 200 experimental predictive cancer models, of a wide range of biological derivative products and of molecule selection tests.

The project also includes the implementation of a centralised biobank of more than 40,000 biological samples and powerful data analysis tools dedicated to the identification of tumour, immunological and microbiotic biomarkers.

IMODI intends to create about 350 jobs over the next 10 years.



«This project is a unique opportunity to fast-track the innovation and identification of cancer therapies and biomarkers, with the implementation of a national sector organised and dedicated to the development of personalised medicine, for the direct benefit of the patients», Philippe Genne, Chief Executive of Oncodesign, during the presidential visit of François Hollande at Oncodesign back in March 2013.

«The IMODI project is one that Bpifrance is proud to have supported on behalf of the Government and as part of the Investing for the Future Programme,» adds Laure Reinhart, Director of Innovation Partnerships, Bpifrance. «The partners' industrial need, synergy, experience and common interest is a guarantee of the sector sustainability and of the creation of economic and scientific value in the area.»

Encourage the development of innovative collaborative projects:
 > a project spawned by the combination of an industrial proposal and a medical need

HECAM, a flagship project of a public-private multi-technological research, to improve the survivability of liver cancer patients

Did you know that hepatocellular carcinoma (HCC), or liver cancer, is one of the most common cancers in the world and its evolution is slow, and often asymptomatic? This is why an early diagnosis can significantly improve the survival rates of liver cancer patients. For an efficient management of this little-known cancer, a multi-technological differentiated and innovative approach is necessary.

It is this observation that the HECAM project addresses, and to give more hope to HCC patients. It is the first time that such an important structuring project was carried out by Medicen Paris Region, from the initial idea to its funding.



The initial idea belongs to Guerbet, one of the founding members of Medicen Paris Region, to develop a health industrial chain offering the medical community a set of solutions incorporating new diagnostic tests (biomarkers, physical measurements and imaging) and new interventional therapies to improve the HCC management.

The HCC project was born after the identification and validation of Paris Region hepatologists and radiologists' clinical needs; the project then became HECAM (HEpatocellular CArcinoma Multitechnological).

The Medicen Paris Region cluster initiated the implementation of a multidisciplinary and multi-technological consortium that would tackle this topic: search for partners by launching a national call for expressions of interest (AMI) among the other competitiveness clusters. Medicen then supported the project initiator (General Electric Healthcare) in implementing and structuring the project, and then endorsed and funded the HECAM project. The cluster continues to carry out its mission of monitoring the HECAM project.

Then the HECAM project benefited from a joint endorsement and funding by the Medicen Paris Region, Atlanpole Biothérapies, Lyonbiopôle and OPTITEC clusters, and has been selected as a Competitiveness Clusters Structuring Projects (PSPC), as part of the Investing for the Future Programme (PIA) with an outstanding funding of €41 million over 5 years.

GE Healthcare, which carried the implementation of the HECAM project, now coordinates all the project R&D activities and will ensure its proper implementation before Bpifrance.

HECAM will allow the short and medium term marketing of the following products:

- > for the monitoring of the population at risk: HCC genetic susceptibility marker;
- > for HCC detection: marker and genetic test for an HCC early diagnosis (circulating DNA or microRNA); marker and protein test for an HCC early diagnosis (circulating proteins);
- > for the diagnosis, prognosis, and therapeutic choice and monitoring: CT and MRI images processing software for a multiparameter characterisation of tumours; integration standard and decision support software tool: organ and tumour "identity card";
- > for the treatment: fluorescence imaging system; ultrasound focused ablation systems (surgical and percutaneous); selective chemoembolisation agent.

The HECAM consortium is led by GE Healthcare and brings together 18 partners: an ETI based in the Paris Region (Guerbet), seven SMEs (BioPredictive, CarThera and IntegraGen in Paris Region, BioSIMS Technologies in Haute Normandie, Intrasense in Languedoc-Roussillon, ADAP TMS France and Fluoptics in Rhône-Alpes), and three academic partners: Gustave Roussy Cancer Campus, the most important European centre in the fight against cancer, Public Hospitals of Paris, with four hospitals: Beaujon, Jean Verdier, Henri Mondor and Paul Brousse, and Institut National de la Santé et de la Recherche Médicale (five Inserm units). The consortium also relies on the CHRU de Montpellier.

«GE Healthcare prides itself in leading this iconic public-private collaborative research programme and in developing, together with its partners, solutions for a better care of the hepatocellular carcinoma patients», François Kotian, Chief Engineer at GE Healthcare.

«HECAM is a reflection of Medicen's great ambitions and know-how: a combining industrial projects and clinical needs to implement ambitious projects from public/private collaborations», explains Béatrice Falise Mirat, Executive Director of Medicen Paris Region.

Hepatocarcinoma, HCC, is the primary liver cancer in men and women, and the 5th and 7th cancer in the world in terms of frequency. A peculiarity of this type of cancer is that develops systematically from a viral hepatitis (hepatitis B and C), alcoholic or metabolic cirrhosis (obesity, diabetes). Despite a slow development of the fibrosis stage to the cirrhosis stage over a period of 20 years, this disease is often asymptomatic and the resulting HCC is especially unfavourable, with a survival rate of up to 5 years less than 30%.

Encourage the development of innovative collaborative projects:
> a multidisciplinary and multi-technological project: medical sciences, digital and telecommunications sectors

FlexMIm, a multidisciplinary collaboration facilitating diagnoses in anatomic-cytopathology

How can we meet a clinical need of a medical speciality, anatomic-cytopathology that simultaneously faces a procedure increase and a demographic decline?

How can new technologies significantly improve the quality, speed and reliability of the diagnoses, which are essential to good patient care? The FlexMIm project answers these questions by combining a cytopathology image digital analysis solution with a semantic analysis tool in order to support the medical decision.

FlexMIm is a fine example of a multidisciplinary collaborative project that involved 6 stakeholders from 2012 until 2015. Supported by Medicen Paris Region, FlexMIm created a tele-pathology platform, which won a call for tenders of the ARS Île-de-France in 2013.

FlexMIm also arose from the request of the AP-HP pathologists and Télépathologie Paris Region network experiencing a decrease in the number of pathologists and an increase in the number of cancer diagnoses and a double reading of the images required by INCa for certain cancers. Moreover, their wish was to have a secure sharing method of pathology images as «virtual slides», allowing to move from a microscope reading to a screen reading in order to have a quick, reliable and remote diagnosis.

The «virtual slide» concept enables telediagnosis, teleexpertise and distance learning for a collaborative and cooperative work.

The tissue and cell microscope examination by pathologists is a fundamental step in cancer diagnosis and it is essential in the personalised therapeutic management of cancers.

Nowadays, innovation in life sciences is more often than not multi-technological, combining the digital and telecommunications world to that of healthcare: technically speaking, the FlexMIm project is a medical image sharing and management platform for remote diagnosis: patient data is digitally stored in the Cloud and the developed algorithms allow to remotely guide exploration and to automatically analyse the images of the virtual slides. The solution assessment was repeated by the doctors of Télépathologie Paris Region, a regional network of 25 anatomic-cytopathology sites.

The highly technical and complex FlexMIm project has brought together a large company, 2 SMEs from the Paris Region, and 3 academic partners: Orange Group, TRIBVN, Pertimm, AP-HP, Université Pierre and Marie Curie (Biomedical Engineering Laboratory), Université Paris Diderot (LIAFA Laboratory).

Medicen has supported the identification of the project partners and has endorsed and funded the project (FlexMIm is also endorsed and financed by SYSTÉMATIc, a digital technologies competitiveness cluster). The project has received funding from the Single Inter-Ministry Fund (FUI) in 2012.



- Successes of the project:**
- > patent filed in 2015 on the contextual image access by Orange Labs
 - > 2 patents filed in 2010 and 2011, the first of which was published in 2014 in Europe and USA, and is currently being studied in China and Japan.
 - > creation in the upcoming months of a start-up, imginIT, in the field of image analysis: this will help circulate these new image quality insurance solutions amongst the pathology and radiology hospital services and the professionals in the fields of imaging.
 - > a subsidiary of TRIBVN is being created for the industrial exploitation of the project results.

«FlexMIm is a very exciting project that allowed, for a manufacturer like Orange, to work not only in a technological but also medical environment, and to contribute to some encouraging results in the field of Oncology.

Beside Orange, this wonderful project has seamlessly brought together multidisciplinary skills and synergies for anatomic-cytopathology and all at the heart of the greatest challenges and issues of the health sector. Finally, a big thank you to all of you, and we wish you success in future projects taking over this one», Laurence Toubiana, Director of Development, Orange Healthcare.

«The platform developed as part of the FlexMIm project facilitated a real-world testing of our image quality automatic analysis solution. The doctors' feedback on its use and the development in partnership with TRIBVN and Orange have allowed us to optimise our solution for use in real time, both for search applications and for a continuous use in a clinical setting and even for satellite imaging, and videos and images stored in the Cloud. We are proud to have worked on this ambitious project at the heart of research in this field.» adds David Ameisen, LIAFA Guest Researcher and Managing Director of imginIT.

«At the end of this project bordering the medical, the digital and the world of semantics, we were able to establish strong partnerships between industrial and academic partners. We were therefore able to measure during these three years both each of our issues and above all the ability to create concepts and concrete achievements. The FlexMIm platform hasn't even begun to reach its potential and we will continue to ensure its implementation. A big thank you to all our colleagues who gave it all! The adventure continues!» Philippe Bertheau, AP-HP - Director of the Department of Pathology, Saint-Louis Hospital.

«FlexMIm has implemented an architecture and tools allowing to transfer the experts' knowledge on interpreting microscopy diagnostic images to treatment and analysis tools, and to validate its purpose by the end-users. TRIBVN is now developing this know-how in its subsidiary, TRIBVN Healthcare, in order to offer a workable solution to the diagnostic structures and to expand its applications in new diagnostic oncology fields», Jacques Klossa, Chief Executive of TRIBVN.

**Encouraging innovative collaborative projects development:
> placing products on the market for better health care**

DexEOS, a public-private collaborative project unlocking new opportunities in the field of osteoarticular imaging

How can we more accurately assess bones fracture risks whilst reducing the exposure doses in order to improve patient safety? The dexEOS project's main purpose is to answer this double question. Medicen Paris Region coordinated the project and its endorsement to achieve its funding.

The fall of an older person is a major public health problem whose importance is increasing with the ageing of the population: about 30% of people over 64 years of age fall at least once each year, presenting fracture risks. Spinal, femur and wrist fractures are the main complications of osteoporosis. The diagnosis of osteoporosis is currently mainly based on local measurements of the bone mineral density (BMD). However, nearly half of the fractures occur in patients with a normal BMD.

The objective of the dexEOS project is to develop a review method and a fracture risk index that take into account all bone micro and macro-architectural parameters in order to improve assessments in older adults. EOS-Imaging, a growing Paris Region SME, the initiator of the dexEOS project, and Med-Imaps (Gironde), as well as public partners, namely AP-HP (CHU Cochin Rheumatology Department), Institut de Biomécanique Humaine Georges Charpak des Arts et Métiers ParisTech et le CHU Pellegrin (Gironde), contributed to the project.

DexEOS is an innovative multi-level project:

- > a Micro Dose feature exposes patients to a radiation level up to seven times lower than the current low dose;
- > a new image analysis method allows the improvement of the osteoporosis diagnosis sensitivity and could detect it in 25-60% of the high fracture risk patients whose bone mineral density (BMD) is insufficient;
- > a density model based on the estimation of the mass and gravity centre of each part of the body is used to calculate the breaking strength, as well as the force on the vertebra, to more accurately assess the fracture risk.

What is the expected result? That a simple review consistent with the clinical practice would eventually allow to quantify the fracture risks on an individual level and identify the most-at-risk individuals who should receive treatment.

In view of its scope, desEOS has benefited from multiple financial support: the Paris Region, the City of Paris, Bpifrance and the Single Inter-Ministry Fund - in the amount of Euro 2 million, for a total budget of Euro 4.75 million.

The benefits are obvious both on a societal level - bringing answers to a scientific and public health issue: three patents filed, 9 scientific publications in peer-reviewed journals, interventions at economic, national, and international conferences, 3 marketed products and 10 direct jobs created.

This project enabled the development of 3 marketable differentiated products (see boxed text), of which two have already obtained marketing authorisation for North America and Europe.



3 innovative products marketed thanks to desEOS

EOS-Imaging: 2 software

release EOS 3.4: Micro Dose application allowing to obtain a spinal stereoradiography with a dose equivalent to a week of natural radiation, compatible with a screening test. This feature has also helped make EOS a must-have in the Pediatric Orthopedic Imaging especially in the USA, where 9 of the major 10 paediatric hospitals are using this technology.

SterEOS 1.6 software: the overall posture assessment and calculation of the relevant clinical parameters used on hundreds of stations in Europe, North America and Asia-Pacific.

Med-Imaps: industrialisation of a calibration phantom with DXA (dual-energy X-ray absorptiometry) and radiography. The performance level is much higher than before. The production cost was divided by 3 and the internal phantom calibration costs have been eliminated. We are expecting to sell at least 150 units in 2016.

«The dexEOS project enabled the support of the research dynamics on the current methods of measuring the bone microstructure. Clinical results are very encouraging in the Radiography field and have been well received by of the radiologists” Christophe Lelong, COO Med-Imaps.

“DexEOS is an example of a technological and medical ambitious project with medium-long term objective combined with short-term benefits, which is the result of a close interaction with the clinicians.” We thank Medicen and all regional and national institutions for their support in the development of these competitive and strongly differentiated solutions», concluded Marie Meynadier, CEO EOS-Imaging.

Encourage the development of innovative collaborative projects:
> marketing new products for better health care

IRIMI, the next generation medical imaging improving services provided to hospitals

The IRIMI project is a very innovative automated and mobile medical imaging system enabling the minimally invasive surgical procedures guidance. Resulting from the work of several partners, Medicen Paris Region was able to support the project, which has been endorsed by three competitiveness clusters: Medicen Paris Region, Systematic, Images and Réseaux, to achieve the financing of the project. The result of this success: a medical device on the market since 2012, which has already generated sustainable jobs.

The purpose of the IRIMI project (Robotic Imagery for Minimally Invasive Interventions) was to demonstrate the feasibility and design of an automatic mobile imaging system to meet the hybrid surgical procedures imaging needs, such as the endo-vascular treatment of aortic aneurysms or heart valves. The developer of this project, GE Medical Systems (Group General Electric Healthcare), has leveraged its network of national and international partners to tackle both clinical and technical aspects. For this project, which combines engineering and life sciences, as many as twelve patents have been filed.

Resulting from the R&D work spanning over a period of 18 months, a dozen of demos and prototypes were developed and tested. A preclinical assessment took place in Q3 2012. In March 2012, the first production of a final version of the robot began in the Centre d'Excellence Mondial pour l'Imagerie Interventionnelle of GE Healthcare, at BUC in Yvelines.

IRIMI generated a robot that is a genuine revolutionary solution in the field of imaging. Unlike traditional angiography systems, it is neither fixed to the ground nor hung from the ceiling, and is fully mobile thanks to a motor-operated base guided by laser that carries the C-arm. This solution facilitates the installation in a clinical setting, offers easier access to the patient and possibilities of unlimited positions, all the while meeting the operating room sterility and safety requirements.

IRIMI is a perfect example of the appeal of the Paris Region and its ability to combine scientific excellence, engineering sciences, industrial feasibility and commercial skills.

Even more so, it is a real economic success thanks to the marketing of the robot and the creation of jobs (53 jobs, of which 37 are sustainable):

> DISCOVERY IGS 730, an automated medical imaging system, produced by GE Medical Systems, with cardiovascular and oncology procedures guidance by endo-vascular and percutaneous way.

> The creation of a BA Healthcare start-up employing 20 people, a subsidiary of BA Systèmes, dedicated to medical applications of non-invasive robotics.

Project partners:

- > **GE Medical Systems**, initiator of the project; in charge of the technical specifications definition, the optimisation of the imaging modes and the completion of the control system.
- > **BA Systèmes and BA Healthcare**: SMEs that co-designed the self-guided mobile base, now produced in a dedicated chain.
 - > **C&K Components**: ETI in charge of ergonomics and human-machine interface studies.
- > **CEA-LIST**: in charge of the study of a completely holonomic solution, able to move in any direction, regardless of its positioning.
- > **L'IRCCyN** (CNRS, Ecoles des Mines de Nantes, Ecole Centrale de Nantes, Université de Nantes): in charge of the study of a wheel driven and steered solution and idle wheels.
- > **Le CR2i** (AP-HP, INRA): in charge of the preclinical assessment of the technologies involved.

«IRIMI is a magnificent adventure, the result of the meeting of creative and determined people who have found in Medicen a valuable partner to make the most of different technologies.

BA SYSTEMS brings our know-how on autonomous navigation, the robustness of its mobile solution as well as our ability to turn a prototype into a serial product, sold all around the world,» adds Julien Cau, Medical Programme Director, BA Systèmes.



Discovery IGS 730

«The interventionists and surgeons who perform minimally invasive complex procedures now have a whole new class of imaging system that revolutionises the field of interventional imaging», François Kotian, Chief Engineer of GE Healthcare France.

**Make innovative tools available to professionals:
> a platform dedicated to radiotherapy training, quality and safety**

DOSEO, a national radiotherapy and imaging reference platform

DOSEO's purpose is to optimise the radiation quantities delivered to patients, both during diagnosis and treatment, and to improve safety in terms of techniques employed at the hospital or clinical centre level. With 200,000 medical radiation treatments provided each year in France, the fight against cancer is a national priority and it involves physicians, researchers and public authorities. DOSEO, part of the Cancer Plan 2 and endorsed by Medicen Paris Region, was selected as an innovation platform by the Single Inter-ministry Fund (FUI) via Direction Générale de la Compétitivité de l'Industrie et des Services (DGCIS) in 2010.

DOSEO is an innovative training and services platform dedicated to radiotherapy and related imagery technologies.

It has the following 4 objectives:

- > **innovate** by developing technology solutions for future systems;
- > **control** radiotherapy systems to guarantee maximum safety to patients;
- > **train** students and sector professionals;
- > **connect** all radiotherapy stakeholders and R&D partners to the industry, and healthcare professionals to regulatory stakeholders.

From the outset, Medicen Paris Region has actively supported the DOSEO project, alongside the founding members, INCa (National Cancer Institute), CEA (Atomic Energy and Alternative Energy Commission) and LNE (Laboratoire national de métrologie et d'essais). The cluster was involved in bringing various stakeholders together and in the implementation stage of this project including co-financing the market study as part of DOSEO project construction stage.

Operational since 1st October 2014, the platform is open to all stakeholders in the radiotherapy and imaging sector. By combining joint research and development projects on radiotherapy and related metrology technology, the technical platform allows providers, researchers and hospital practitioners to use to their benefit the latest research works and technological equipment.

Below are some figures illustrating the results achieved since 2014:

- > 4 major industrial partnerships;
- > 5 funded collaborative projects (ANR, Physicancer, ANSM, IDEX) regarding software and instrumentation developments in order to optimise radiotherapy treatments or the use of imagery: PIM (2014-2016), DEDIPRO (2014-2017), AID-IGRT (2015-2018), QUADOS (2016-2018), and STEREPID (2016-2019);
- > New training modules for the Diplôme de Qualification en Physique Radiologique et Médicale (DQPRM) and for continuous training (CAMARI, PCR and two radiotherapy modules, Stereotaxy and IGRT).

A unique site in France and Europe:

DOSEO is located on 2,400 m² in an open area of the Saclay CEA Centre employing 35 people in several departments: List Institute of CEA Tech for R&D and Dose Metrology (Laboratoire National Henri-Becquerel/LNE-LN-HB), and INSTN (Institut National des Sciences et Techniques Nucléaires) for training.

This platform is the result of an investment of Euro 18 million.



«This project was very complex in terms of implementation.

Medicen Paris Region has enabled the networking of the stakeholders, which was necessary to set up of the platform, and has been an active partner of the project since the very beginning of the adventure», Bénédicte Poumarède, List Institute, DOSEO Platform Director.

Supporting the Île-de-France SMEs:

OsseoMatrix invented the custom bone implant direct 3D printing

A real innovation in fractures, the OsseoMatrix method opens the door to a new generation of implants that will eventually replace the current prosthetic devices. 3D printing is well developed for polymers and metals, but it was necessary to invent it for the direct moulding of materials such as mineral bone. The OsseoMatrix SME did it by developing an original method and patented it for the manufacturing and 3D printing of synthesised custom bone implants. This is a start-up that the Medicen Paris Region cluster has been supporting since its beginning in 2009.

The bone regeneration cannot be done alone above a certain level of bone loss. Based on this observation, OsseoMatrix has designed a process to manufacture custom synthesised bone implants to compensate for the bone loss. The invention concerns a unique laser machine that creates and prints “the missing piece” based on the patient digital data provided by the scanner in order to perfectly adapt it to the bone loss anatomy. The reconstituted bone is made from a special ceramic powder, of the same composition as the mineral bone, and its microporous structure allows its colonisation by the bone cells and blood vessels. After a few months, the natural bone takes the place of the implant which served as guide, thus enabling bone healing.

Given the purpose of this project and its highly innovative nature, OsseoMatrix has been greatly supported since its creation. The company has been supported by several clusters: Medicen, Génopôle and the European Ceramics Cluster. It is also financially supported by several partners including ANR, DGA, the Ministry of Higher Education and Research, Bpifrance, the Paris Region, the Conseil Départemental de l'Essonne.

In particular, Medicen's support of OsseoMatrix is a perfect example of the cluster's offers aiming to speed up the development of life sciences innovative projects: skills development by attending several seminars and workshops (i.e., thematic meetings on the optimisation of its industrial property strategy or on the human resources management as part of the Biotech Santé DEF1 scheme, North America information workshop, fundraising seminar, etc.), or international events to increase its visibility (MedStart-up, BioSpring 2015), EIP endorsement, preparation of its application at the Concours Mondial de l'Innovation.

This support materialised in OsseoMatrix being awarded in 2014 and in 2015 at the Concours Mondial de l'Innovation.

In terms of prospects for future operation, the preclinical results achieved with the OsseoMatrix method confirmed a biological interest in this solution. The next phase, concerning clinical trials on humans, will require a first level of production on an industrial plan and should begin at the end of 2017.



Given the clinical and economic benefits of this invention, OsseoMatrix has successfully participated, since its creation, at several competitions or calls for projects, of which the most important include:

- > Creation of an Innovative Technology Business Competition organised by the Ministry of Higher Education and Research for the Emergence (2008) and Development and Creation (2010) categories;
- > Siemens Innovation Award (2012);
- > Concours Mondial de l'Innovation phase I (2014) and II (2015); winner for a high technological and economic potential of the project in terms of personalised medicine.

«We have been honoured to receive the Concours Mondial de l'Innovation award, which is a recognition of our team's efforts. This comes to show the importance personalised medicine is taking in the bone loss management. This award will allow us to speed up the setting up of the industrial pilot project for the production of implants and to recruit new employees»,
Dr Didier Nimal, founder of OsseoMatrix.



Supporting the Île-de-France SMEs:

BIOMODEX: developing imaging solutions to support surgeons

The close coaching of BIOMODEX by Medicen Paris Region is a good example of the cluster’s offer to its SMEs members. Concrete results: from the implementation of the innovative idea to the creation of the company, a partnership with a large group, access to international markets, endorsement and founding, financing and high visibility at major events.

Based on MRIs or scanners organ biomedical imaging data, BIOMODEX has developed a process that automates the creation of virtual models of these organs, which are then produced by way of 3D printing. This cutting-edge technology has two applications:

- > Surgery and procedures training: provide clinicians with a catalogue of 3D printed pathological organs which allows them to practice on organs, whose biomechanical properties are comparable to real human tissue;
- > Preoperative simulation: replicate a patient’s phantom organ so that clinicians improve the procedure on the eve of the operation (choice of a prosthesis, testing different operating strategies, etc.).

The BIOMODEX technology is a real step forward in terms of improving the safety of surgery operations and procedures, and allows practitioners to acquire knowledge and experience in a simulated environment.

Medicen Paris Region has supported BIOMODEX since 2014 until its creation in 2015, on various coaching and support levels, including:

- > for the acquisition of skills for the project implementation and funding issues: learning about funding methods, participation at information seminars with Bpifrance and Finance Innovation cluster and at a workshop on the optimisation of the industrial property as part of a fundraising and IEP endorsement (Cluster Innovation Company national endorsement).
- > for an international development: COFACE workshop (financial support for businesses’ international development), information workshop on the North American market, immersions in the Israeli medtech ecosystems (DARE programme) and American (Boston), and participation in the Medstartup programme (Galen Foundation) in New York (2015).



Nowadays, BIOMODEX is effectively leveraging this support to accelerate its growth both in France and worldwide. Here are the achievements and the most important success of BIOMODEX since its creation:

At the national level:

- > development in collaboration with Medicen on project Arthrosim, the first arthroscopy simulator with 3D printing and receiver of the 2015 CIN award (Concours d’Innovation Numérique) of Enterprise Directorate General;
- > partnership with Dassault Systèmes allowing access to their 3D Experience Lab in France and Boston (global reference for modelling and prototyping);
- > company accommodation in the Agoranov incubator.

At the international level:

- > Medicen’s selection for the Boston Soft Landing programme, with the key representation of Île-de-France to the “MassMEDIC Show”, the Massachusetts Competitiveness Cluster annual event organised by MassMEDIC in October 2016 in Boston (USA);
- > setting up a first location in Boston;
- > obtaining in 2016 funds of up to \$3.6 million through the Innovation Capital INSERM Transfert Initiative and Kima Ventures to grow on the US territory.

Cluster Innovation Company (EIP) national endorsement.

The EIP endorsement was initiated in 2012 by Medicen together with Finance Innovation, a cluster expert in the financing of Fin Tech innovative companies. This endorsement’s purpose is to prepare the health biotech companies to better report to investors, informing them on the investment capital criteria, whilst working on the content and presentation of their development project, and to enable various networking means with potential investors. The coaching unfolds in stages:

Step 1: Application filing on the Medicen site. This file is thoroughly analysed by Medicen and Finance Innovation who then formulate recommendations to complete the application file, if necessary. A meeting is then held with the directors to write down some notions in the presence of a fundraiser.

Step 2: Short presentation of the company’s development by the manager to the members of the Cluster Innovation Company Committee. Based on this presentation and the file sent upstream, the Committee members also formulate an opinion and recommendations from the point of view of investors.

Step 3: In the case of endorsement, this gives access to networking with investors in the healthcare sector.

«I want to thank Medicen for this close partnership that has enabled us to develop our skills in several fields and to achieve our funding. It is the recognition of our determination to design new training for the surgeons of tomorrow and thus helping reforming the medical professionals’ knowledge and experience acquisition methods. I also want to thank our investors, Innovation Capital, Inserm Transfert Initiative and Kima Ventures that responded positively to our call for help to take on these exciting new challenges that lie ahead», Thomas Marchand, Chief Executive of BIOMODEX.

Medicen Paris Region is very happy to support several of its members to efficiently meet their needs in terms of growth, funding and skills development. «It is our objective to promote the innovation development, the economic growth and the job creation», Béatrice Falise Mirat, Executive Director, Medicen Paris Region.

Promote meetings and collaborations: the «cluster effect»

Bio-Modeling Systems and CEA - Direction de la Recherche Fondamentale: an important strategic scientific collaboration between two members of Medicen Paris Region

Two spin-offs have been created following BMSystems and CEA's scientific collaboration. A success made possible by partnership dynamics, illustrating the «cluster effect» generated by Medicen Paris Region.

In 2003, the owners of the young BMSystems start-up used their own capital to design with its new analytical platform, CADI™ (Computer Assisted Deductive Integration), the world's first model in silico of a complex human disease, validated *in vivo*. They have selected the Creutzfeldt-Jakob disease (human prion disease known by the public due to the contaminated growth hormone and the transmission of the "mad cow" disease), because it is a case study in neurodegenerative diseases and its mechanisms in animals and in humans are equivalent.

At the beginning of the project, the BMSystems managers were looking for a partner to validate their approach and so they turned to the Fontenay aux Roses of CEA - Direction de la Recherche Fondamentale (at the time Direction des Sciences du Vivant), a well-known centre of excellence in the field of prion diseases. This programme could not exist without the open-mindedness of the CEA teams and the will of CEA's managers, in particular Dr Jean-Philippe Deslys, Head of the Prion and Atypical Infections Study Service, to support and contribute to this ground-breaking collaborative project. The public body then agreed to finance the CADI™ model validation stage from its own funds.

This approach and follow-up of the program would probably not have been as efficient and easy without Medicen Paris Region. In fact, these two partners have benefited from a real «cluster effect» thanks to consultative and follow-up meetings within the competitiveness cluster.

At the time, the traditional approach to the Creutzfeldt-Jakob disease was to only check the action of the prion on neurons. However, neurons only stand for about 50% of the brain size. BMSystems therefore focused on the «matter» around the neurons, mainly the astrocytes, which play a role of support/protection/nutrition for the nerve cells. Based on the targets suggested by BMSystems, the CEA team has sought new pathways in such diseases. As some of the results were inconsistent with the suggested theory, the system was revisited to incorporate new data and provided new targets, predicting an important role of the connexins, which are proteins enabling the communication between astrocytes and neurons and between neurons (chemical synapses). The EEG tests (electroencephalography) carried out by CEA on mice revealed in all animals and control animals, a surprising modulation effect of the overall brain activity related to the administration of anti-connexin agents. This modulation particularly allowed to obtain a significant effect on psychoactive molecules (for example, antidepressants) administered in parallel at doses ten times lower than normal.

This discovery therefore opened the way to many therapeutic benefits for humans (decrease in the doses required to obtain a benefit, side effects decrease, ability to render effective molecules not selected due to an unfavourable therapeutic index, increase in the specificity of action of psychotropic drugs).

Beyond this ground-breaking discovery (protected by a joint CEA/BMSystems patent), the strategic partnership resulted in two spin-offs.

The first is a new spin-off of CEA, exploiting this joint patent whose first product has already entered into phase II. The second spin-off is Pherecydes Pharma, the first therapeutic spin-off of BMSystems in phase I/II in the field of drug-resistant infections. The CEA has participated in the scientific validation of the concept, which has strongly contributed to the success of the initial fundraising and has hosted the first research team of Pherecydes Pharma, before its setting up in the Biotech Technology Park (93). All of these companies have created jobs. For example, Pherecydes Pharma generated about ten jobs, not to mention indirect jobs. For more information, please visit www.bmsystems.net

This successful scientific collaboration gained both partners the Bio-IT World Award 2009 for these researches on the Creutzfeldt-Jakob disease - BMSystems is the only European SME to have received this award this year - and in 2010 the European Commission has acknowledged this work as one of the three "best practices" in the systems medicine field.

The same research approach could be applied to many neurodegenerative diseases such as Alzheimer's disease, for which a CADI™ model describes three causal mechanisms that do not correspond to the two «leading thoughts» of the moment.

"This interaction with BMSystems is a perfect illustration of the will and ability of CEA to build partnerships with the SME innovative sector." Thanks to its expertise in biomedical research, Fontenay aux Roses of CEA contributes to the competitiveness of the innovative Paris Region ecosystem», Pierre Chagvardieff, Account Executive of Strategic Partnerships, CEA-Direction de la Recherche Fondamentale.

«Without CEA's support, we never would have made it so far. Nowadays, BMSystems works through collaborations leading to valuations in the form of licences or creation of spin-offs, by performing research under contracts. In either case, the company helps life sciences companies or institutions to find solutions to deadlock situations. In the specific case of health care, we are able for example to determine in men, before its entrance, the probable failure of a molecule. So we think we can greatly speed up the R&D steps in pharmacology." Manuel Gea, Co-founder and Chief Executive of BMSystems.



«The initial objective of this strategy was neurodegenerative diseases related to prions such as the Creutzfeldt-Jakob disease, but the results obtained have led to a much broader concept applicable to many fields in Psychiatry», Jean-Philippe Deslys, Head of the Prion and Atypical Infections Study Service - SEPIA, CEA-DRF-IMETI.

Facilitate and bring together for the first time the Paris Region ecosystem:

Incubday, all of the incubators, technoparks and host sites involved in the health sector in Paris Region

Understanding and sharing the skills and roles of the innovation stakeholders. Understanding the needs of these stakeholders and companies. Establishing cooperation and synergies to improve the coordination and efficient measures to support projects and SMEs. These were the challenges on the Incubday, held on 21 January 2016 in Paris by Medicen Paris Region, with the support of the City of Paris, in the presence of all of the incubators and start-ups involved in the healthcare system in Paris Region. A look back to the highlights of this innovative day.

Faced with a plethora of incubators, accelerators and public and private stakeholder partnerships, a greater professionalism becomes necessary for a better coordination of all these synergies towards one converging goal: push forward the healthcare sector's major issues and promote our territory that has already benefited from important scientific and technical advantages. There are already some twenty development sites in Paris Region with a direct link to health care.

On this day, some observations were highlighted, that Medicen, in order to facilitate the practical implementation of the process of incubation, plans on the following:

- > Simplify and clarify each stakeholder role to avoid any duplication of activities;
- > Measure innovation on the territory through studies, monitoring centres, barometers;
- > Strive to be even more pragmatic and operational in the initiatives developed for companies in order to keep pace with the complexity of the French ecosystem;
- > Better identify any potential research projects on new pathologies on the French territory.

Concrete opportunities have been identified this day:

- > Map and learn more about all of the territorial innovation stakeholders (incubators and other structures) throughout France and better determine the expectations of the start-ups hosted in these incubators;
- > Set up synergies and collaborations between incubators and their partners;
- > Capture the companies' needs to help them in their development:
 - foreign start-ups to develop in France;
 - Paris Region companies to help them internationalise their activities (e.g.: create an Erasmus programme of entrepreneurs, based on a culture of sharing between entrepreneurs from different countries).

Beyond this day, which has demonstrated the cluster's ability to bring together the territorial innovation stakeholders in Paris Region to find avenues for cooperation, Medicen is already working with some incubators to provide services to businesses, thus providing these hosting structures a complementary role.

Examples:

- > Creation of a specific oncology watch for Cancer Campus members
- > Dissemination of a ICT and Health watch to the Boucicaut incubator members
- > Presentation of the services offered by Medicen to SMEs, organised at Biocitech



«Technology and healthcare companies are the main growth drivers in our country. The benefits of our Paris Region ecosystem are many and are evolving, by bringing together our insights, by clarifying the drivers to be developed to increase the appeal of the regional ecosystem and its aspirations on a European and on an international level, and we will develop competitive advantages», Christian Lajoux, President of Medicen Paris Region, during this day.

Focus on the life sciences sector in Paris Region :

Paris Region is the first out of 20 of the most important European regions (based on 2013 GDP):

- 50% of life sciences research projects are carried out in this area;
- AP-HP is the most important European hospital and one of the leading global hospitals;
- major research institutions are headquartered here (Pasteur, INSERM, etc.);
- Paris Region is a place where research on molecules, pathologies and medical technologies, benefiting from the digital technology is ongoing;
- brings together multidisciplinary teams increasingly working without borders: researchers, engineers, doctors, medical staff, etc.
- digital health is at the service of diagnostic and therapy solutions.

Promote the region and the development of SMEs worldwide

BIO-Europe Spring, the annual biotechnology industry European meeting, first organised in Paris in 2015

2,500 participants from 40 countries got together at Bio-Europe Spring 2015, where the Paris Region life sciences sector excellence gathered under the banner of Medicen Paris Region, in partnership with Paris Region Entreprises. A true success of the 2015 event, which was first held in Paris, Porte de Versailles.



Every year, BIO-Europe Spring brings together in a different European city all the life sciences sector stakeholders: biotechnology providers, companies developing diagnostic tests, services providers, pharmaceutical laboratories, academics, and private investors (venture capital and investment funds).

Almost 2,500 people participated on 9 - 11 March 2015 at this business conference to attend the scientific programme.

Medicen Paris Region had a central role in coordinating the French stakeholders by organising a series of high-level conferences on innovative topics suggested by the cluster members, and by setting up two booths, one for the partners and one for the French healthcare clusters.

The session topics of discussion have covered Medicen's strategic areas, namely the major innovation areas: digital health, translational medicine, regenerative medicine or rare diseases (in cooperation with Eurobiomed).

Several original solutions developed by Paris Region entities have also been presented, such as a health crowd-funding platform by My Pharma Company, interventions of OTT&PI, Inserm Transfert, CEA, or even the presentation of CellSpace, a structuring project. Cancer Campus hosted a session on oncology.

Also, 3 innovations presented by SATT Lutec, IDFinnov and OTT&PI drew attention to Medicen Paris Region's booth.

With regards to the trade fair: 2 booths led by Medicen and a work station to facilitate business meetings

> A first joint booth of all 12 partners*: Biocitech, Cancer Campus, Cap Digital Paris-Region, CEA, FIST, IDFinnov, Inserm Transfert, Institut Pasteur, OTT&PI, Paris Biotech Santé, SATT Lutec, Systematic Paris-Region.

* With the support of sponsors: Covance, Genzyme, GlaxoSmithKline, Innothera, Ipsen, LFB, Sanofi and Servier.

> A second booth consisted of 6 French Healthcare Clusters: Alsace BioValley, Atlanpole Biothérapies, Cancer-Bio-santé, Eurobiomed, Lyonbiopôle, Nutrition Santé Longévité.

«Congratulations to Medicen Paris Region for their efforts to offer a friendly space to its members, large and small academics and manufacturers, and all the health-biotech stakeholders, and for their significant contribution to the success of this international event in Paris», Jean-Marc Grognet, Director of Promotion CEA - Direction des Sciences du Vivant.

«Every year, AP-HP participates at BIO-Europe Spring. This year is unusual as, for the first time, BIO-Europe was held in Paris and, also for the first time, the regional offer of healthcare innovations has been jointly presented by three of the main stakeholders of the Paris Region, OTT&IP of AP-HP, Inserm Transfert and SATT IDFinnov. «Present at the Medicen Paris Region booth and at the business meetings, we were able to identify new partners to develop AP-HP's innovations, the most important European medical centre, and to allow the development of new solutions for the benefit of patients», Elodie Acloque, Project Manager Licensing & Economic Development, AP-HP/DRCD - OTT&PI.



“in” and “out”, supporting SMEs’ development on a global level and their setting up in the Paris Region:

Four companies, invited by Medicen Paris Region, honoured at the eHealth Week 2015 event

At the initiative of Medicen and TIC & Santé inter-cluster, a delegation of 4 innovative companies in the digital health sector have participated in May 2015 in Riga (Latvia) at the eHealth Week event. A real chance for these companies to promote their international visibility and foster international partnerships. Medicen plays here the role of a facilitator to bring together stakeholders within the Paris Region ecosystem and to develop meetings opportunities on a global level. MedClinik, a Canadian business delegation, met with partners that have allowed them to expand in France and Europe.

The annual eHealth Week event is co-hosted by the European Union, the public health authorities of the host country and HIMSS (Healthcare Information and Management Systems Society). The goal is to promote sharing practices, business meetings and international collaborations. This event allows the participants to share information on current issues in the field of e-health with international decision-makers. Each year, about 2,500 people attend this conference (public decision-makers, businesses, clinicians, hospitals, and directors of information systems).

Amongst the winners of this delegation is MedClinik, a French subsidiary of 360Medlink (Canada), specialising in digital solutions for patients, which has developed TAVIERX, the first clinically validated InfirmièreVirtuelle™ platform, providing to the patient customised and interactive support in order to improve the treatment use and adherence.

MedClinik has benefited greatly from its presence at the eHealth Week 2015 event. Following the meetings held by its teams, a major European project funded by the EIT-Health (European Institute of Technology) was initiated and a pilot project is now being launched in Germany, Sweden and Belgium.



Medicen Paris Region and the Paris Region TIC & Santé inter-cluster coordinated a delegation of 4 companies at the 2015 eHealth Week with a dynamic programme, subsidised by Medicen:

- > a dedicated place in a joint Medicen/TIC & Santé inter-cluster booth with 4 other companies, for a better visibility and a potential meeting place;
- > networking opportunities during the event with Latvian stakeholders;
- > a French Embassy reception by Medicen and «Bureau» Business France of Riga, during which 4 companies have had the opportunity to present their activities. 80 high-level guests participated, all pre-qualified by Business France based on the profile of the 4 companies. Objective for the 4 companies: informal meetings to initiate business partnerships or potential funding;
- > coverage of the participation costs at eHealth Week (conferences and match meetings).

The 4 delegation winners:

- > **MedClinik**, digital solutions for patients and healthcare professionals in the field of diagnosis, adherence to treatment especially in chronic diseases.
- > **Livanova (formerly Sorin)**, company specialising in the medical field, particularly in the production of cardiac devices for the treatment of cardiovascular diseases.
- > **MAIDIS**, developer of medical information systems software.
- > **Medasys**, first French clinical solutions provider; optimises the clinical processes to improve patient safety and the institutions’ economic performance by reducing costs.

«This week we had the opportunity to increase the visibility of MedClinik in Europe before European stakeholders and we had key meetings during the B2B conferences and the pitch organised at the French Embassy. A joint European project was the result of this support thanks to which we are now expanding our French team», Claire Kamoun, Director, Scientific Programmes and Patients, MedClinik.

Promote SMEs' global development:

Medicen Paris Region, the driving force behind two immersion programmes in Israel and in USA

The two immersion initiatives, in Tel Aviv and in Boston, are facilitated by Medicen Paris Region in order to help businesses develop their visibility and accelerate their development outside of France. The US and Israel ecosystems are well known for their technological innovations and dynamism in terms of R&D. Such programmes that are co-founded and co-hosted by Medicen will soon be replicated: two Israeli and American business delegations are expected in Paris Region in the upcoming months.

Immersion experiences in the Israeli ecosystem to develop this market's appeal and joint R&D projects

Medicen/AFCRO (Association Française des Organisations de Recherche Clinique) delegation in Tel Aviv

In 2014, the first initiative was put forward by Medicen with the immersion of a delegation of companies specialising in the clinical development in Israel. For these CROs (Contract Research Organisations), the goal was to understand the Israeli clinical research ecosystem (environment, chain of innovation operation, procedures, etc.) and to meet with several stakeholders to evaluate the potential of this market for clinical trials.

This experience resulted in the creation of an EIG (Economic Interest Group) at the end of 2014 to consistently address the Israeli market. This EIG now includes 7 French CROs, driven by the AFCROs, and enabled the creation of a VIE location here to represent the EIG and launch the business in Israel.

This initiative demonstrates that innovation allows competing companies to converge towards a common goal.

French-Israeli DARE Programme

Building on this success, the French-Israeli DARE immersion programme was initiated by Medicen, in partnership with Bpifrance, Business France and the Economic Department of the French Embassy in Tel Aviv. Dare is the first initiative endorsed by Israeli French Tech, the 3rd international hub of French Tech after the New York and the San Francisco hubs.

Five start-ups* have been selected for their strong growth potential by a French-Israeli jury including Medicen, and they participated in the first edition of this programme in the spring of 2016.

Likewise, the Israeli business delegation is expected in France in the upcoming months.

In both cases, the programme includes several successive steps for the selected finalists:

- a training day on the regulatory issues and the markets of the two countries;
- a week of immersion in the ecosystem of the visited country, with a personalised programme with individual meetings and collective actions to meet with stakeholders of the ecosystem (investors, researchers, clients, potential partners);
- six months monitoring by one or more mentors, as well as entity partners (incubators, clusters, investors, etc.)

For Béatrice Falise Mirat, Executive Director of Medicen Paris Region: «The DARE programme is an example of the international strategy of our cluster and our actions at the service of SMEs. The involvement of all the partners both in France and in Israel confirms a shared interest in collaborative projects, fostered by their synergies. Everything seems put together so as to have this sharing process materialise soon into projects, and ultimately in concrete innovations.»

2016 Boston Soft Landing programme: targeting the American market

How to find opportunities to present a project to American investors to gain visibility in the USA? How to better understand the peculiarities of the American healthcare system in order to assess one business development potential on this key market in the life sciences field?

The purpose of the Boston Soft Landing programme is to support high-potential innovative companies in answering these questions in order to accelerate their development on the US market.

Eight start-ups* were thus selected for a custom programme that took place in April 2016 in the Boston ecosystem during the MassMedicWeek and the BIOMEDevice Conference. During these 4 days, workshops and conferences (Financing, Market Access, Regulatory Affairs, Reimbursement) and meetings were held with some stakeholders of the local ecosystem, as well as mentoring sessions with French Tech Hub experts.

At the event, and after this week of coaching, a jury comprising French Tech Hub and Medicen, designated 2 companies amongst the 8 start-ups, namely ARCHIMEJ Technology and BIOMODEX, who would have the honour of representing Paris Region at the Salon Annuel des Investisseurs en MedTech organised by MassMEDIC in October 2016 in Massachusetts (USA). For these 2 start-ups, this is an exceptional platform allowing them to meet with providers, investors, and potential strategic partners.

Medicen cannot be prouder of the success of this selective trip: to date, at least three companies out of the eight have already decided to register a first office in Boston to expand on the American market.

A first soft landing pilot project was undergoing in 2015, validating the relevance and interest in this approach.

Further to this sharing programme, a first positive outcome with possibility of a future collaboration between the 2 countries: the emergence of a tele-medicine project between a French and an Israeli company as part of a bilateral French-Israeli call to projects.

*Start-ups having participated in the DARE programme in Tel Aviv in March 2016: MENSIA, DAMAE Medical, IMT Medical, ISONIC Medical, BIOMODEX.



«BIOMODEX is proud and honoured to have been selected as one of the two most promising start-ups to present our solution to the MassMEDIC Show in front of one of the richest Medtech ecosystems in the world. It is a true springboard confirming BIOMODEX as one of the leaders in the field of 3D printing surgical simulators,»
Thomas Marchand, Chief Executive, BIOMODEX.

** The 8 start-ups participant at the Soft Landing Boston 2015 programme: BIOMODEX, ARCHIMEJ Technology, AD Scientiam, Mensia Technologies, Robocath, IMT Intelligence in Medical Technologies, Cardiologs Technologies, Wandercrat

medicen | innovation
PARIS REGION | for
health

3-5 impasse Reille - 75014 Paris
www.medicen.org
+33 (0)1 79 68 10 80
medicen@medicen.org