Inria Centre at the University of Lille

National Institute for Research
in Digital Science & Technology

2021 Report – *2022* **Perspectives**

World-class *research,* technological innovation *and* entrepreneurial audacity *in digital science and technology.*

2021 Report *– 2022* Perspectives

Shared *views*

Mireille Régnier, Director of the Inria centre at the University of Lille & Régis Bordet, Dean of the University of Lille

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In the Objectives and Performance Contract signed in 2019, Inria expressed its desire to increase its involvement in helping French university sites grow.

The framework agreement signed between Inria and University of Lille in November 2021 is part of this objective. Mireille Régnier, Director of the Inria centre at the University of Lille, and Régis Bordet, Dean of the University of Lille, present the key areas of this strengthened collaboration between our two organisations.

Can you tell us about the major themes that Inria and University of Lille have agreed to work on together?

Régis Bordet: Inria has always been involved in University of Lille's evolution in becoming an i-Site, then an experimental public establishment. More specifically, this support has manifested via Inria's commitment in backing our university site's scientific strategy: the HumAIn Alliance is one example of our concerted strategy in terms of research and teaching in artificial intelligence. The Inria project-teams are an essential pillar of digital health at University of Lille and Lille University Hospital. Lastly, the coordinated contribution of our two organisations on the theme of cybersecurity also represents an important area for our collaboration, especially for the research and training axis of the Lille Hauts-de-France Metropole Cyber Campus.

What synergies will Inria and University of Lille be able to develop to give weight to this strengthened partnership?

Mireille Régnier: In 2021, we launched four working groups aiming to establish the points of convergence between our two organisations, to increase efficiency and impact. The first was human resources, with a concrete project around mentorship, in association with the Painlevé and Cristal laboratories. In terms of administration, the sole management mandate awarded to Inria should make it possible to facilitate the creation of joint project-teams, bringing in other academic or industrial partners. For our international activities, our aim is to enhance our cooperation, with University of Lille joining the Inria London Programme in partnership with University College London. Lastly, in the area of innovation and transmission, our two organisations are coordinating their initiatives to raise awareness and support the creation of research-based companies, through our two respective programmes, Inria Startup Studio and Créinnov.

Digital health is one of the University of Lille's areas of scientific excellence. How will Inria contribute?

MR: Digital health is a strong area for Inria as, at a national level, one-quarter of our project-teams contribute to shaping the healthcare of tomorrow, through their research. Furthermore, in collaboration with Inserm, Inria is co-piloting a "Digital Health" PEPR (Priority Research Programmes and Equipment). From this dynamic was born the idea to create a joint project-team bringing together Inria, Inserm, University of Lille and Lille University Hospital on the theme of inflammatory diseases. A junior teaching chair in digital health has also been launched on the same theme.

RB: Inria researchers are heavily involved in innovative and structural digital health projects for the region, like the INCLUDE health data warehouse. But the question of how health professionals will appropriate innovative digital solutions is key. The CAPS'UL project (University of Lille Digital Health Participatory Campus) represents a response to this challenge. It is a consortium bringing together training bodies, research institutes – including Inria – and socio-economic partners to provide an interprofessional response to digital health issues, aimed at students and professionals in healthcare.

For the year 2022, what new collaboration projects are planned?

RB: Europe, continuing education and innovation are some of the themes for new projects being launched by University of Lille in 2022. First of all, for Europe, our aim is to strengthen synergies between all academic actors that partner with our organisation, by creating a joint skills hub to mount European projects. For continuing education, our aim is to support learning above all, by enabling the development of short courses aimed at professionals in particular. Lastly, we wish to bring together innovation actors present in the ecosystem to strengthen the impact of our respective support programmes and encourage innovative start-ups to emerge across the region.

Scientific *excellence*

Our priority research *areas*

Data science

Improving the quality of data, reducing the volume, developing browsing, analysis and visualisation methods for large data sets as well as assessment methods to measure the effectiveness and usability of these visualisations, etc. – Inria's project teams draw on their expertise at the forefront of the data economy to provide input for HPDA (High Performance Data Analytics), which can accelerate artificial intelligence applications.

Software engineering

Along with hardware, software is the cornerstone of computer science. As such, it lies at the heart of the research conducted by Inria's teams. The applications are numerous: programming languages, compilers, operating systems, middleware, databases, AI, high-performance computing, modelling and simulation, security, health, the environment, and so on.

The challenges in software are many, ranging from security and the protection of privacy to interoperability and energy efficiency, not to mention the need for algorithmic transparency given today's strong "open source" and "open science" culture, which Inria has espoused since the beginning.

Cyber-physical systems

Inria provides a response to challenges, acting as the "interface" between the physical and digital worlds:

→ In robotics, particularly in the case of non-invasive precision surgery, which requires advances in the design of new robotic systems (flexible and/or bio-inspired) combining simulation, control and data science;

→ For challenges relating to filtering, transmission and interpretation of data from sensors or help/assistant programmes, monitoring of environmental or biological phenomena, transport, etc.;

→ For issues relating to safety (ensuring smooth functioning of systems, reliability) and security (ensuring protection and preventing system hijacking).

Two key fields for application at Inria centre at the University of Lille:

Digital health

Inria researchers work in close collaboration with the Lille University Hospital, Inserm and University of Lille. One of the main activities of the joint research projects run by our organisations is structuring and processing large volumes of health data from hospitals, while ensuring interoperability and protecting confidentiality. The aim is to improve patient pathways and contribute to the emergence of personalised medicine.

Digital sobriety

Inria supports the development of sustainable and responsible digital technology in France and Europe, and to this end, includes energy-related restrictions and reduction of environmental impact in the design of new software technology.

Sycomores, a new joint project-team

In partnership with the University of Lille and CNRS, in collaboration with UMR 9189 CRIStAL (University of Lille, CNRS & Centrale Lille). The team's scientific project falls under the domain of design and analysis of real-time embedded systems. More specifically, the SYCOMORES team works on design and validation of these systems, by focusing on the scaling up process without sacrificing safety guarantees. *"To reach our objective, we offer an end-to-end approach, by starting with specifications and programming, then compilation and static scheduling"*
Giuseppe Lipari, head of the Sycomores project-team, Professor of IT at University of Lille.

↘ MODEL OF AN F1/TENTH AUTONOMOUS CAR, OPERATING WITH A REAL-TIME SOFTWARE ARCHITECTURE , DEVELOPED BY THE SYCOMORES TEAM

The Inria London Programme bringing French and British research closer

Launched in 2019 with University College London (UCL), the Inria London Programme is an international research partnership based around machine learning and artificial intelligence. In 2021, this partnership was strengthened with the possible creation of a joint project-team. *"Our scientific project is focused on the idea of generalising machine learning, aiming for better theoretical understanding of the foundations of artificial intelligence, to develop learning algorithms that are efficient in terms of data and resources, with a sustainable environmental approach. This research is based on PAC-Bayesian theory."*
Benjamin Guedj, Research Fellow.

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↘ BENJAMIN GUEDJ, INRIA RESEARCHER.

The centre's active participation in mounting PEPRs (Priority Research Programmes and Equipment).

Inria centre at the University of Lille is involved in setting up five acceleration PEPRs: cybersecurity, agoecology and digital technology, cloud technology, digital health, and artificial intelligence. These programmes aim to create or consolidate French leadership in scientific domains related to technological, economic or social transformation. Exploratory PEPRs are targeted at emerging sectors and explore scientific fields with multiple areas of impact. Our centre steers two: O2R (Organics Robotics) and eNSEMBLE (future of collaboration).
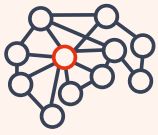
CornelIA: *a dynamic born out of Alliance HumAIn*

The CornelIA project draws on Alliance HumAIn to structure a value chain around data, going from fundamental research to socioeconomic applications. The SILECS and ROBOTEX platforms are at the heart of this programme, aiming to establish the theoretical foundations to develop ethical AI.

Among the objectives of this project:

→ To support the integration of responsible and sustainable AI in embedded systems (sensor networks, robotics, etc.) in response to societal challenges;

→ To develop applications in connection with a network of regional partners at the intersection of other disciplines (health, electrical engineering, industry 4.0, logistics, transport, environment, cultural and creative industries, etc.);

→ To build academic/industrial collaborations to contribute to making AI technology mature, with the aim of social and economic impact.

Engineering support and training at the highest level are at the heart of this project.

Project budget: €12.6 million, with 5.4 million funded by the CPER.

Launch in 2022, end of project in 2029.

Incentive programs *to stimulate scientific risk-taking*

Scientific incentive programs allow researchers to explore a new approach or application that is not necessarily in the project-team's main objectives. These actions are targeted and aim to have a large impact on specific challenges, or present a certain risk due to their subject.

Two Inria Challenges completed in 2021 involving project-teams from the Inria centre at the University of Lille:

The Fun and Modal
project-teams

ROAD-AI project

The integrated management of heritage infrastructure is an approach aiming to combine long-term challenges with short-term constraints and operational considerations. The aim is to offer safer, more sustainable and resilient transport infrastructure through efficient, cost-effective and responsible management. The ROAD-AI challenge aims to overcome scientific and technical obstacles to design the heritage management of the future and benefit road operators: (i) build a "digital twin" for the road and its environment at the scale of a full network; (ii) define the "laws" of the road's behaviour; (iii) instrument bridges and tunnels at the system level and exploit data in real-time; (iv) define strategic planning methods for investments and maintenance.

The Inocs and Spirals
project-teams

OVHCloud project

This challenge involves five Inria project-teams (Avalon, Inocs, Myriads, Spirals, Stack). It aims to explore new solutions for cloud services that consume less electricity and have reduced environmental impacts. Three areas of research will be studied by the Inria and OVHCloud teams: software eco-design for services and applications, drivers of efficiency, and impact reduction and support for cloud users. Seven specific sub-projects, mainly involving two Inria project-teams and an OVHCloud team, will be run in parallel as part of this joint challenge.

This project is supported by the "France Relance Plan".

Two exploratory actions were selected for our centre in 2021:

The Rmod
project team

Distilling VMs – A Generative Approach to Virtual Machine Construction

Virtual machines are onnipresent in every laptop, server and smartphone. Industrial-level virtual machines use highly detailed optimisation techniques, often hand-designed by experts and difficult to reproduce, replicate and modify. These optimisation techniques mainly aim to improve speed and are incompatible with the significant space and energy efficiency constraints present in the IoT or robotics. The AlaMVic project proposes to tackle the design of virtual machines by using a holistic generative approach, unlike existing approaches that only concentrate on speed or components such as the JIT compiler.

*This project is led by Stéphane Ducasse, head of the Rmod project-team.*

The Modal
project team

PAtient paThways in Hospital contexts (PATH), in partnership with the Lille University Hospital.

Many healthcare establishments have access to large volumes of data related to patient pathways. The current challenge is to be able to undertake specific analysis of this data, in order to understand and optimise the healthcare system in its entirety. However, classic statistical analysis cannot be applied directly to this data, as it represents a mix of extremely heterogeneous and versatile quantities. The PATH exploratory action aims to establish the first general milestones in order to perform practical statistical processing on these complex objects.

This project is led by Sophie Dabo, researcher in the Modal project-team.

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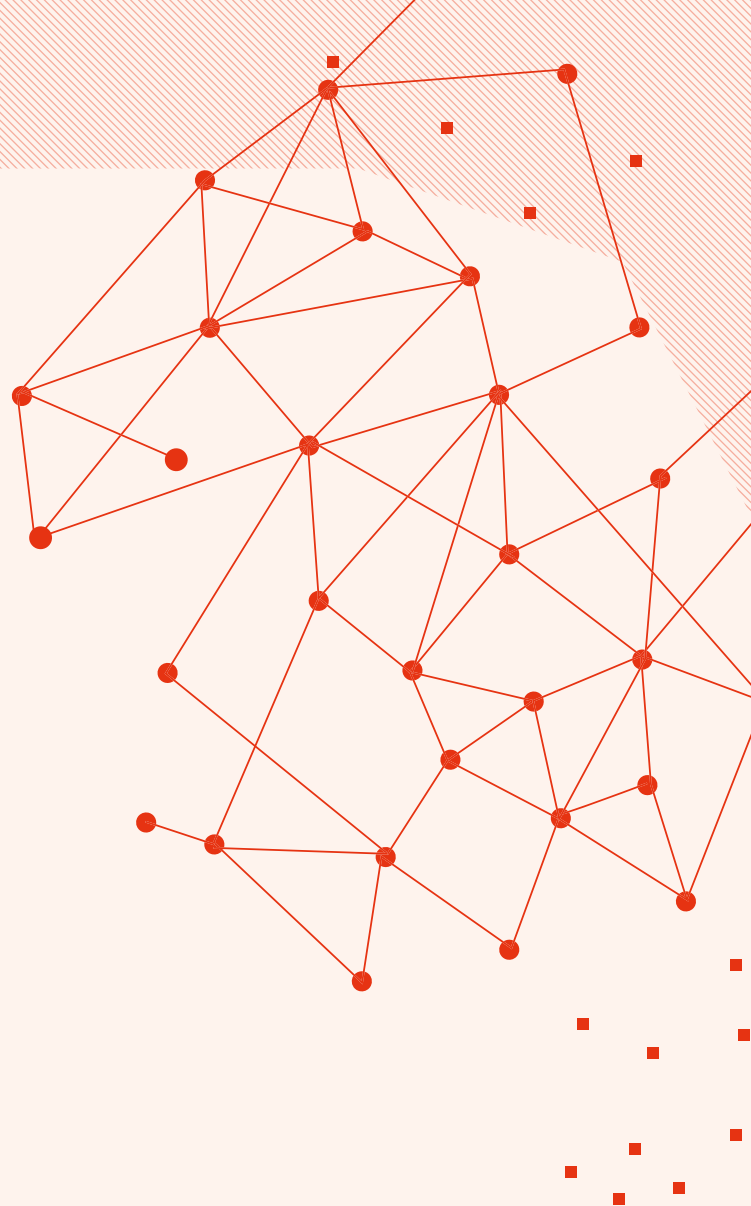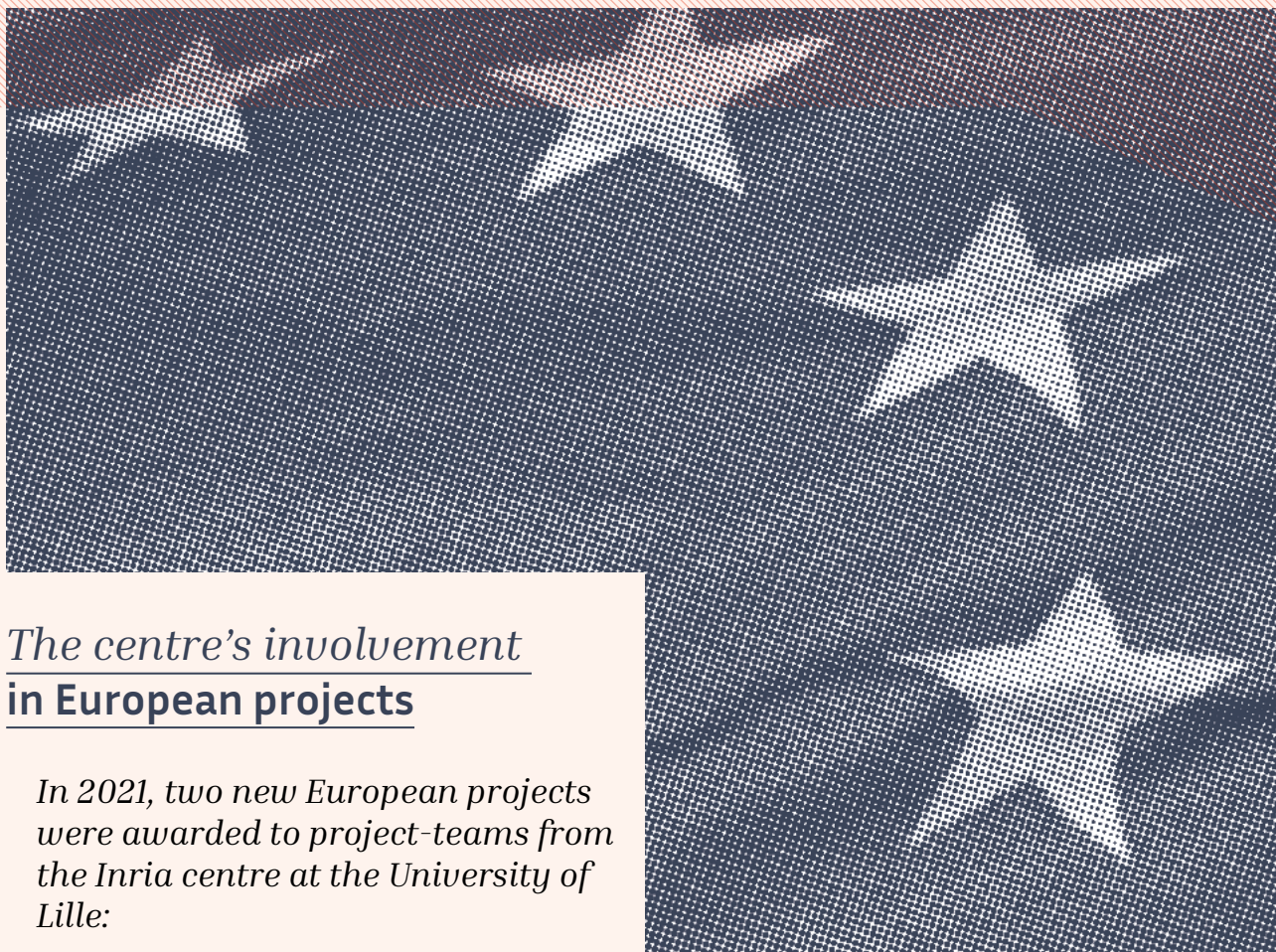
The centre's involvement
in European projects

In 2021, two new European projects were awarded to project-teams from the Inria centre at the University of Lille:

CYBERSANE

The objective of the CyberSANE project is to secure "critical" communication infrastructure, i.e., vital for the functioning of a society or economy (e.g., in the medical or energy domain). The Fun project-team is working to secure the wireless part of communication infrastructure, as it is easier to attack.

SIMCARDIOTEST

This is an international consortium of ten partners, including the Defrost project-team for the Inria centre at the University of Lille. The aim of the project, granted €8m of funding by the European Commission, is to speed up the use of digital simulations to design cardiac medication and medical devices.

Creating conversation
between art and digital sciences

What connections can we make between the art of origami and robotics research?

The Defrost project-team, specialised in design, conception and control of deformable robots, hosted Brussels-based origami artist Dewi Brunet for a three-month residency, for a collaboration in oribotics, a discipline born from the combination of origami and robotics. This residency was made possible thanks to the AIRLab program (artist in research immersion in a laboratory), organised by the University of Lille.

Dewi Brunet's project, titled *"Plantoid-ori"*, questions the delicate borders between a living organism, a human being and a robot, drawing inspiration in particular from the plant kingdom to create a folded piece in movement. The residence led to the creation of an artwork, an exhibition and scientific outreach events.

PODCAST   www.inria.fr

Inria *and its regional ecosystem*

A strengthened partnership with University of Lille

Inria collaborations with companies

The emergence of Inria start-ups

Active support for public policy

© MAXIME DUFOUR

A strengthened partnership *with University of Lille*

In November 2021, University of Lille and Inria signed a strategic partnership framework agreement setting a number of joint actions aiming to increase their synergy in terms of research, innovation and training. This strengthened collaboration is reflected in the Inria Centre's change of name to the "Inria centre at the University of Lille", marking this strategic alignment and sharing joint programmes for a greater impact.

Our two establishments committed to a series of joint actions:

→ Increased presence in our respective governance bodies;

→ Closer ties between our two establishments, allowing for more efficient functioning, sharing resources for work on major projects and making the procedure to create join project-teams more fluid;

→ Enhancing research-training connections with Inria scientists participating in the University's courses through Inria Starting Faculty Positions and opening Inria and University of Lille courses to staff, scientists and engineers from the two establishments;

↘ JEAN-CHRISTOPHE CAMART, FORMER DEAN OF THE UNIVERSITY OF LILLE, AND BRUNO SPORTISSE, CHAIRMAN & CHIEF EXECUTIVE OFFICER OF INRIA, AT THE SIGNING OF THE FRAMEWORK AGREEMENT ON 30 NOVEMBER 2021.
PHOTO ©UNIVERSITÉ DE LILLE

→ Sharing awareness and support initiatives for entrepreneurship with the opening of the Inria Startup Studio programme for digital DeepTech start-ups in the University laboratories;

→ Better interaction between our two establishments for transmission and innovation around digital sciences and technologies to make the site more attractive;

→ Sharing internationally oriented programs for strengthened partnerships;

→ For Inria, in connection with University of Lille, strengthened interdisciplinary themes, in particular in the areas of engineering and health.

Forming a first-rate science and digital technology site to serve research, higher education and innovation.

Inria collaborations
with companies

Strengthening the economic impact of research is necessary to contribute to the revitalisation and sustainability of a French and European industrial base using and developing digital technology.

Established on a scientific foundation of the highest level, Inria contributes to digital transformation and expertise in companies, while increasing the impact of digital technologies developed in its research teams.

Strategic partnerships created with companies of all sizes

Inria has set the priority of forming bilateral agreements with French industrial partners and companies developing a base of jobs in France and Europe more broadly. Scientific risk-taking is supported, specifically through interdisciplinarity and industrial partnerships.

As part of the "France Relance" Plan, five projects in association with industrial partners to protect R&D jobs were launched in our centre in 2021.

The Rmod
project team

partnership with Berger Levrault BL

Inria and the company Berger Levrault have defined a road map with three flagship initiatives, including the creation of a joint project-team. This project-team will concentrate on designing tools to help software teams manage technical debt. Though many tools are available on the market to design and implement new and updated software, there is still only a limited number of methods and tools to handle existing code. However, legacy code management and maintenance of existing software represents a very important activity on the software market. This is especially the case for management software, which often must be maintained for multiple decades.

↘ RMOD AND BERGER–LEVRAULT KICK–OFF EVENT 18 NOVEMBER 2021

The Spirals
project team

partnership with orange OVHcloud DAVIDSON CONSULTING

The DISTILLER consortium, made up of Inria, OVHCloud, Orange and Davidson Consulting, is giving a kick start to the PowerAPI software for measuring software energy consumption. *"The objective of the consortium is to advance fundamental research in the area of eco-responsible digital technology and its applications, especially in the cloud. It will support the emergence of new tools to accompany developers in adopting best practices in designing their software."* Lionel Seinturier, Professor at University of Lille, head of the Spirals project-team.

The Inocs and Spirals
project-teams

partnership with OVHcloud

This project is part of the Inria x OVHCloud Challenge and involves studying the environmental impacts of the constantly growing uses of digital technology, and more specifically, its impact on related energy consumption. The aim of this project is not only to make all stakeholders in the value chain responsible (operators, service providers and general public) for the environmental impact of digital technology, but also to develop a set of best practices around implementing more virtuous digital services. More specifically, the aim is to determine the incentives, such as new pricing, that could modify customer behaviour so that they help reduce the energetic impact, while maintaining a good quality of service.

The Modal
project team

partnership with adeo

This collaboration is related to the "Predicting Sales by Grouping Low-Rotation Products" CIFRE thesis and proposes an estimation of sales for product groups, whether identical or different, coming from one or multiple stores.

↖ Lionel Seinturier, Professor at University of Lille, head of the Spirals project-team.
PHOTO © C.MOREL

The Modal
**project team**

partnership with alicante

The Modal project-team and the company Alicante have set up the Clinmine project, a joint laboratory on the theme of optimising patient treatment at hospitals. The Clinmine project aims to develop innovative methods to analyse pathway types, using data available at hospitals. A multidisciplinary approach will be proposed, then various case studies will be evaluated to validate the approach. The final developed product will be a functional software platform, based on open-source products.

Contributing to the revitalisation and sustainability of a French and European industrial base using and developing digital technology.

The emergence of **Inria startups**

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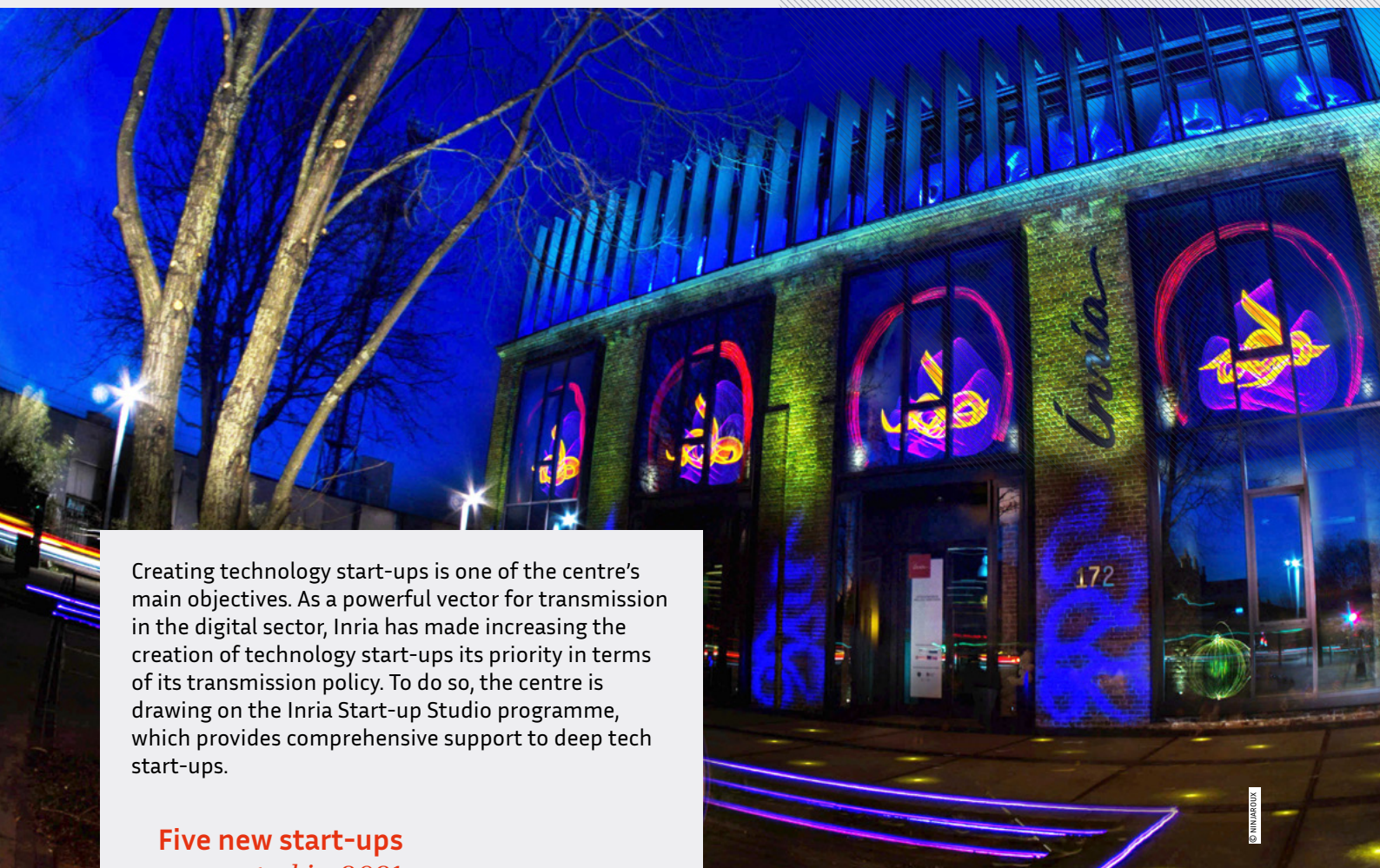
Creating technology start-ups is one of the centre's main objectives. As a powerful vector for transmission in the digital sector, Inria has made increasing the creation of technology start-ups its priority in terms of its transmission policy. To do so, the centre is drawing on the Inria Start-up Studio programme, which provides comprehensive support to deep tech start-ups.

Five new start-ups
supported in 2021

→ **Auréax:** this start-up offers cyclists a navigation wristband based on haptic technology. The innovation, adapted to safe urban cycling, is aimed both at private individuals and bike delivery companies.

→ **Axiome** *i-PhD winner* : this start-up proposes a smart pedagogical assistant offering maths teachers a digital tool to change their teaching methods and allowing students to overcome their difficulties and develop their skills.

→ **Nijta:** based on research from the EU project COMPRISE, Nijta is a start-up that provides clients (call centres and public services) with voice anonymisation software. The aim is to protect the identity and privacy of users of voice applications, from phones to voice assistants.

→ **Optimo:** this start-up is reinventing journey planners to make traffic more fluid. The solution calculates optimal routes, spreading out travellers to reduce congestion, which causes pollution (road network) and reduced comfort (alternative transport methods).

→ **Smart 4 IoT:** this start-up is developing an IoT solution to connect historic industrial machines to IoT platforms. It is based on the expertise of the Rmod project-team, specialised in software engineering.

As a powerful vector for transmission in the digital sector,
Inria has made increasing the creation of technology startups its priority in terms of its transmission policy.

Inria & Euratechnologies:
two complementary actors to allow start-ups to scale up

Our areas of collaboration:

→ Raising awareness among scientists and showcasing research undertaken at Inria via support for start-up creation;

→ Increasing the deep tech potential for start-ups incubated at Euratechnologies, thanks to Inria technology;

→ Undertaking joint actions aiming to bring together the science community and economic actors.

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A successful 2nd edition of hackAtech,
an open innovation project to spark the creation of deep tech startups

Structured in four phases, from ideation to concrete support for projects, the hackAtech aims to strengthen deep tech potential and validate the technological and business viability of projects sourced throughout the year.

The final sprint of the hackAtech, which took place from 25 to 27 November 2021 at the Lille Chamber of Commerce, was an opportunity to spark new startup projects based around the technology and expertise of Inria and its partners, including University of Lille, CNRS and Centrale Lille. 120 participants with diverse profiles (project leaders, researchers, engineers, business profiles and students) came together to accelerate 11 deep tech startup projects during the 2nd edition of the hackAtech. The Ava Maritime, Nijta and Dyjest projects were the winners of this edition.

hack A tech
Shake science. Shape innovation.

54 hours	**120** participants
11 projects	**3** winners
15 tech references	**20** innovation boosters

*Spotlight on
the three winners of this edition:*

Ava Maritime

Ava Maritime responds to the issue of shipping containers that fall into the sea. This innovative technical solution is based on a network of interconnected sensors positioned on each container. Paired with algorithms developed by Inria, it will make it possible to identify the fallen container's registration and immediately inform the ship-owner and relevant authorities.

"The hackAtech was an opportunity to collaborate technologically on an initial model made up of nine sensors and to carry out a first precision measurement campaign for the system. Furthermore, the encounter with multiple business developers brought out some key points for the commercial success of our solution. We were therefore able to shed light on our roadmap for the year 2022."

Florian Lebrun, leader of the Ava Maritime project

Nijta

Vocal data, which is stored in large amounts by voice assistant manufacturers and call centres, reveals sensitive, personal information (identity, age, gender, emotion, etc.). This data is crucial for companies to improve their performances, but citizens' right to privacy must be protected. Nijta offers an anonymisation service based on cutting-edge research, with assistance from project-teams Magnet (Lille) and Multispeech (Nancy), to erase biometric identity from voices and allow for legitimate processing of vocal data.

"The hackAtech spint allowed us to create a passionate, motivated team, concerned about our universal right to privacy. We achieved certain technical objectives, like testing our solution's ability to evolve for multiple languages and designing a brand image and marketing platform, and interactions with the Innovation Boosters helped us design the right strategy to explore the mar²ket."

Brij Mohan Lal Srivastava, leader of the Nijta project.

Dyjest

Irritable bowel syndrome (IBS) is a condition that affects 11.2% of the world's population, and can be extremely disabling in the most serious of cases. There are no treatments, doctors are powerless and patients generally find themselves left to handle it alone. Dyjest offers a virtual assistant, in the form of a mobile application, which helps patients reduce the intensity of their symptoms, by allowing them to precisely identify and sustainably change the behaviours (diet, activities, etc.) that do not contribute to their wellbeing.

"The sprint format forced us to advance on our business model, and our ideas were challenged by the actors in the start-up ecosystem (Euratechnologies, Eurasanté) as well as by the Inria researchers.

During the weekend, we also had an excellent opportunity to collaborate with a participant working in the pharmaceutical industry."

Mehdi Douch, leader of the Dyjest project

A strong relationship with **local authorities**

The Inria centre at the University of Lille supports the territory's public policies and enjoys support from local authorities, such as the Métropole Européenne de Lille. The Hauts-de-France regional council offers invaluable support to the research centre, which was formalised in 2022 with a renewed framework agreement. These resources are implemented by the centre to contribute to the territory's development and resolve issues through digital technology.

The fight against Covid-19

Project-teams from the centre were involved in multiple research projects undertaken in France and Europe to fight the pandemic, specifically:

→ **Covidom:** the Scool project-team was involved in developing algorithms to predict the aggravation of clinical symptoms as part of telemonitoring application Covidom.

→ Participation of Inria in the Lille-based **Covid-19 task force**

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Cybersecurity

Inria is supporting the creation of the **Hauts-de-France Lille Métropole Cyber Campus.** The **Hauts-de-France Lille Métropole Cyber Campus** is the first regional campus certified by National Cyber Campus. This project is operated by EuraTechnologies and funded by the Métropole Européenne de Lille and Hauts-de-France regional council. The aim for this 3,000 m² campus is to become one of the biggest centres for cyber innovation in Europe.

The four missions of the Hauts-de-France Lille Métropole Cyber Campus:

→ To prevent and react to attacks, in particular for SMEs/ETIs and local authorities. Multiple investments are planned, such as a cyber range (attack simulation platform to train teams) and hosting a Computer Security Incident Response Team (CSIRT);

→ To support innovative cybersecurity projects, whether they come from start-ups, companies, or academic actors;

→ To raise awareness and train future talents by drawing on partnerships with university courses. The campus will also host the Ministry of the Interior's National Centre for Cyber Training (CNF-Cyber);

→ To bring together and animate the regional cybersecurity ecosystem.

Sustainable development

→ **The Biodimeter:** measuring and analysing the state of biodiversity in an area

The Biodimeter is a participatory system designed in collaboration with Soreli (urban planner for the Rives de la Haute-Deûle eco-district), which allows residents and visitors to the district to collect data on fauna and flora through a mobile application. This data, completed by a number of sensors placed in the water and air, is then scientifically processed by Inria.

The Biodimeter represents a way to both collect data on biodiversity, and inform and raise awareness among citizens on these topics, which are extremely important nowadays.

START-UP CORNER

Dialogue between *science, technology and society*

Inria is committed to a mission to decipher science that feeds into digital technology and raises awareness of science among citizens, from a young age.

Scaling up advances in scientific and digital technology research to a socioeconomic level is a challenge that Inria is responding to:

→ By raising awareness of science and digital technology among school-age audiences from a young age, to develop their love of mathematics and computer science;

→ By training teaching staff in new approaches to mathematics and computer science, to refresh their teaching practices through content enriched and inspired by the Institute's research;

→ By contributing to training new generations of researchers and engineers, with the challenge of improving the attractiveness of research careers in the digital sector with particular emphasis placed on girls;

→ Thanks to the Interface space, an interactive and living tool to concretely illustrate the Institute's research and show the importance of science and digital technology for society.
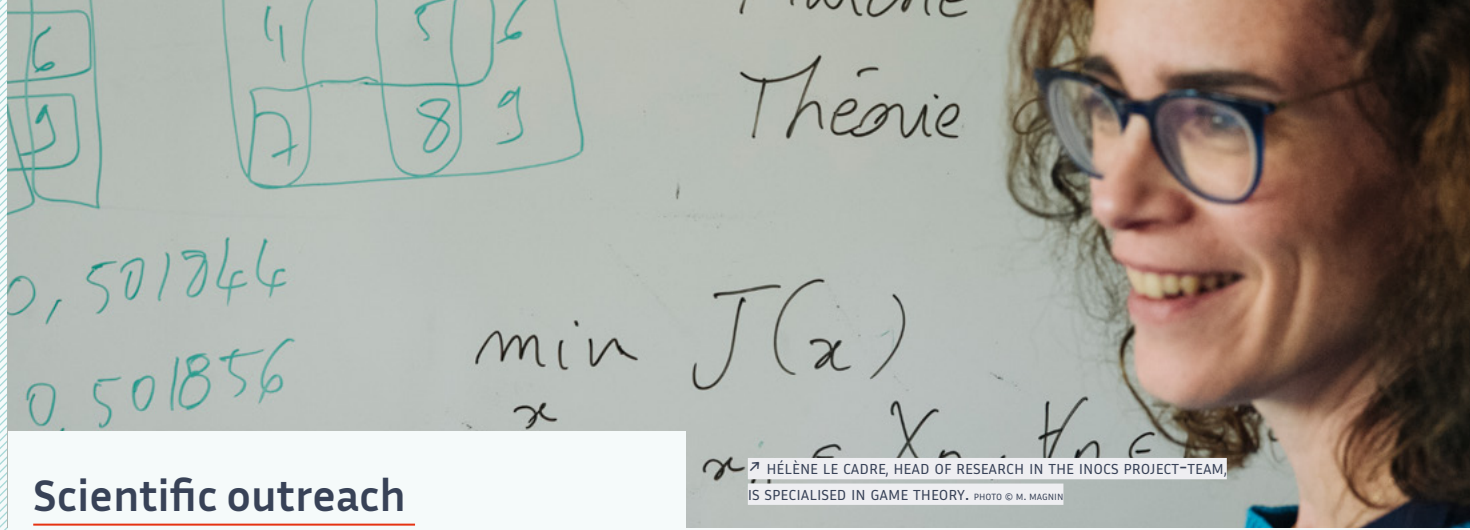
Scientific outreach
to decipher science and digital technology

The Inria centre at the University of Lille offers multiple kinds of events and frameworks for exchange, to show the research practices that take place within project-teams and encourage dialogue for better understanding and appropriation of digital technologies. The "1.45pm" and "30 mins of Science" conferences are an example of regular monthly events that offer scientists an opportunity to present the fruit of their work.

1:45pm

A monthly event open to all, with content accessible even to non-scientists. Researchers propose a concrete application from their work.

30 mins of Science

A monthly event for scientists aiming to promote knowledge from research performed by teams. The scientific presentation lasts 30 minutes and is done in English.

"1 scientist - 1 class: Chiche!" *illustrates research in the digital sector and its impact for society*

Led by Inria and the Ministry of National Education, this programme involves scientists visiting Year 11 classes. The aim is to raise awareness of the opportunities offered by sciences, particularly in the digital sector.

Interface

Located in the heart of Euratechnologies, Interface is a showcase for the centre's research, through demonstrators that embody the results of high-level work. It represents a support tool to transmit research carried out at Inria. It also features a presentation space for start-ups born out of the centre.

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