



HIGHLIGHTS

KEY EVENTS

2020

RESEARCH AND INNOVATION

| FEBRUARY |

RENEWAL OF 2 CARNOT ACCREDITATIONS FOR LABORATORIES AT IMT GRADUATE SCHOOLS

Carnot Télécom & Société Numérique and Carnot M.I.N.E.S, both of which have been accredited since 2006, once again received this precious label that recognizes the quality of their partner-based research. This label aims to encourage partnership relations between public research laboratories and companies in order to develop R&D, technology transfer and innovation.

Carnot Télécom & Société Numérique is led mainly by IMT: IMT Atlantique, Institut Mines-Télécom Business School, Télécom Paris and Télécom SudParis along with its subsidiary Eurecom.

Carnot M.I.N.E.S is led, alongside Mines Paris, in particular by IMT Atlantique, IMT Lille Douai, IMT Mines Albi, IMT Mines Alès and Mines Saint-Étienne.

| MARCH |

CONTRIBUTION TO THE NATIONAL EFFORT BASED ON RESEARCH CAPACITY

See focus: 2020, COVID-19,
INSTITUT MINES-TÉLÉCOM ACTIVE
ON ALL FRONTS!

| JUNE |

INSTITUT MINES-TÉLÉCOM FOUNDING MEMBER OF GAIA-X, AN INITIATIVE TO CREATE A SOVEREIGN, INTEROPERABLE EUROPEAN CLOUD

Through this initiative, research professors from IMT will share their expertise in AI, Big Data, cybersecurity as well as data ethics and governance. IMT will work alongside a wide range of stakeholders: cloud providers, IT service companies, SMEs, industry and sector organizations.

As the French academic partner in the initiative, IMT will contribute to the joint establishment of new European standards for data sharing between companies.

| OCTOBER |

12TH IMT SCIENTIFIC SYMPOSIUM: MATERIALS FOR THE ENVIRONMENTAL TRANSITION

The latest research conducted on materials of the future by research professors from IMT graduate schools and its partners was presented by video conference over the first four Thursdays of October.

Following an initial conference by the national leaders in the matter, José-Marie Lopez-Cuesta from IMT Mines Alès and Denis Delagnes from IMT Mines Albi, who presented an overview of the work carried out at IMT, and a guest presentation by the Yves Bréchet, Scientific Director of Saint-Gobain, three sessions were held on the following themes: materials for the energy transition, system obsolescence and life cycle management and high performance materials with low environmental impact. They were hosted by Jean-François Hochepped (Mines ParisTech), Chung-Hae Park (IMT Lille Douai) and Florence Delor-Jestin (Sigma-Clermont) respectively.



EDUCATION

| FEBRUARY |

RANKINGS OF ENGINEERING SCHOOLS IN “L'ÉTUDIANT” AND “L'USINE NOUVELLE”: A STRONG PERFORMANCE FOR INSTITUT MINES-TÉLÉCOM!

All of the IMT graduate schools saw their rankings improve in comparison to the 2019 rankings by “L'Usine Nouvelle” and “L'Étudiant”. The highest-ranked IMT school by “L'Usine Nouvelle”, IMT Atlantique, rose 11 places to be ranked 7th. And Télécom Paris was ranked in the top 3 schools by “L'Étudiant”.

RESULTS OF AN EXCLUSIVE IMT STUDY: IN-COMPANY TRAINING: CHALLENGES AHEAD

This study looked at the challenges that lie ahead for in-company training and was conducted by Institut Mines-Télécom as a continuation of its participation in the “Dare to Enter the Industry of the Future” project led by the Alliance for the Industry of the Future. It was aimed at all professionals in the training sector in order to better understand the current developments in this field and explore the evolution of professions and skills and how to prepare for these changes through training.

CONTINUITY OF EDUCATIONAL ACTIVITIES AND A NUMBER OF MOOCS RE-OPENED

See focus: 2020, COVID-19, INSTITUT MINES-TÉLÉCOM ACTIVE ON ALL FRONTS!

| APRIL |

MOOC “DARE TO CHOOSE A PROFESSION FOR THE INDUSTRY OF THE FUTURE” MOOC 465

This MOOC, intended to help students think about their higher education plans, presents the industry of the future through its various facets and employment opportunities. The content presented in the program was originally produced for the “Dare to Enter the Industry of the Future” project. This MOOC makes the content available to a wide range of learners who can benefit from the useful information and practical takeaways.

| JUNE |

INSTITUT MINES-TÉLÉCOM COURSES TO SUPPORT THE ECOLOGICAL TRANSITION 385

While educational, digital and ecological transitions have been underway for several years at IMT schools, it was students' turn to take action by proposing a common core at each school in alignment with the sustainable development goals set by UNESCO.



INSTITUTIONAL



| MARCH |

OLIVIER HUARD APPOINTED CHAIRMAN OF THE BOARD OF DIRECTORS OF INSTITUT MINES-TÉLÉCOM

Appointed by a decree of the president of the Republic dated 2 March, Olivier Huart, a former student at Télécom Paris, the CEO of TDF, took over as chairman of the board of directors of Institut Mines-Télécom.



| JULY |

CLAUDE IMAUVEN, NEW PRESIDENT OF THE BOARD OF DIRECTORS OF THE FONDATION MINES-TÉLÉCOM

The board of directors of the Fondation Mines-Télécom appointed Claude Imauven as its new President. Claude Imauven, President of Orano, previously chaired the Board of Directors of Institut Mines-Télécom from February 2016 to February 2020.

| SEPTEMBER |

INSTITUT MINES-TÉLÉCOM AND THE FONDATION MINES-TÉLÉCOM UNVEIL THEIR NEW ANNUAL BROCHURE: “DIGITAL TECHNOLOGY: INDUSTRIAL CHALLENGES AND ECOLOGICAL IMPERATIVES”

This 12th issue focuses on two major transitions in which the issues at stake are inherently related: digital technology and the environment. Academic and industry experts share their nuanced views and provide insights into avenues to explore to reconcile ecological imperatives and socio-economic issues.

CREATION OF AN “INDUSTRIES & ENERGY 4.0” FUND IN PARTNERSHIP WITH BPIFRANCE AND REVITAL’EMPLOI

Building on the success of its “IMT Digital” Fund, Institut Mines-Télécom and the Fondation Mines-Télécom teamed up with Bpifrance and Revital’Emploi to launch a second fund dedicated to the sciences of energy, materials and processes. It will grant interest-free loans to the most promising start-ups developing innovative industrial projects.

| DECEMBER |

IMT ACADEMIE DES SCIENCES AWARDS

The 2020 IMT Académie des Sciences awards ceremony was entirely virtual. The Grand Prize was awarded to Gaël Richard, Research Professor and Head of the “Image, Data, Signal” Department at the Information Processing and Communication Laboratory (LTCl) at Télécom Paris. He is a specialist in audio signal processing. The Young Scientist Award was granted to Etienne Perret, Research Professor at the System Design and Integration Laboratory, Grenoble INP. He is recognized for his work on chipless RFID sensors.



FRANÇOIS DELLACHERIE, NEW DIRECTOR OF TÉLÉCOM SUDPARIS

Appointed by a decree dated 19 November 2020, François Dellacherie took over as director of Télécom SudParis on 1 December 2020. He will be tasked with continuing the school’s development based on its fields of excellence. He will contribute to implementing IMT’s overall strategy and to helping build Institut Polytechnique de Paris.

INTERNATIONAL

| JANUARY |

IMT AT CES LAS VEGAS

10 IMT start-ups, selected through the Bercy-IMT Innovation Awards, took part in CES Las Vegas at the IMT stand. On this occasion, IMT rewarded 2 Bercy-IMT Grand Innovation Awards to start-ups PacketAI and Meyko at the French "Convergence Innovation Awards" evening organized by IMT, Business France, La Tribune and Le Village Francophone. The Fondation Mines-Télécom also rewarded "Coup de Cœur" awards from its 4 sponsors: Bouygues Telecom, Deloitte, Engie and Safran.

| MAY |

3 IMT SCHOOLS RANKED IN THE THE (TIMES HIGHER EDUCATION) "IMPACT RANKING 2020" A NEW RANKING BASED ON THE UNITED NATIONS' SUSTAINABLE DEVELOPMENT GOALS

IMT Atlantique, IMT Mines Alès and Mines Saint-Étienne earned their place in the "Impact Rankings 2020". This new global ranking measures the performance of universities around the world based on the 17 Sustainable Development Goals (SDG) set out by the United Nations.

IMT Atlantique was ranked between 300 and 400th place, while IMT Mines Alès was one of the top 400 institutions. Mines Saint-Étienne was ranked between 400th and 600th place worldwide.

| JULY |

IMT'S INTERNATIONAL STRATEGY SUPPORTED BY ERASMUS +

This year, IMT schools received nearly €1.6 million in funding from the European Commission to finance international credit mobility (ICM), i.e. mobility between schools and countries outside the EU. In terms of volume, this is the largest grant obtained by a group of French engineering and management schools through this Erasmus+ program call for projects. The funding will allow 130 students, research professors and administrative staff to move to and from Indonesia and Vietnam, two target countries for IMT's collective international activity.

| OCTOBER |

INSTITUT MINES-TÉLÉCOM/ SUP DE CO DAKAR BACHELOR'S BEGINS ITS SECOND YEAR

The "Innovation, Management, Digital Technologies" Bachelor's program offered by IMT and Sup de Co Dakar, combines engineering sciences and management and is strongly focused on the local economy. It welcomed its second cohort of students. The Bachelor's classes are held at the Sup de Co Dakar site, while project-based lessons are held at Edulab IMT, an educational training and experimentation site.



2020, INSTITUT MINES-TÉLÉCOM ACTIVE ON ALL FRONTS!



EDUCATIONAL CONTINUITY

Research professors, staff from the registrar's office and administrative staff took action to ensure educational continuity and maintain the same quality of teaching starting with the first lockdown. Research professors were able to rely on the COMETE network (IMT teaching support staff), which quickly took a number of steps to boost the transformation of teaching methods already underway and adapt them to distance learning during the lockdown.

The schools placed special emphasis on maintaining a connection with students. In addition, a 24-hour help and mental health support line was opened for students.



A NUMBER OF MOOCS RE-OPENED TO SUPPORT LEARNING FOR EVERYONE DURING THE SPRING LOCKDOWN

Institut Mines-Télécom made some thirty online training modules (MOOCs*) offered by IMT schools available in response to the emergency situation. The MOOCs were available for free on the public platform FUN – France Université Numérique (along with the Coursera and edX platforms). Half of these modules were re-opened or extended on an exceptional basis in response to the emergency situation, open to an unlimited number of learners.

Of particular interest is a set of courses on how companies are changing in response to digital technology, including the "Digital Transformation and Business" SPOC** which was offered for free on an exceptional basis, open to an unlimited number of learners. The program brought together 6,700 learners, two-thirds of whom were working professionals or job-seekers.

*Massive Open Online Course

**Small Private Online Course



CREATION OF A COVID-19 SOLIDARITY FUND IN LATE MARCH TO HELP STUDENTS FACING FINANCIAL HARDSHIP

In order to mitigate the impact of the pandemic, Institut Mines-Télécom moved quickly to set up a special Covid-19 Solidarity Fund at the beginning of the crisis to respond to the urgent needs of students facing social and financial difficulties. Individual donations made to the Fondation Mines-Télécom added to the fund. Between the months of March and August 2020, a total of over €100,000 was distributed to 133 students facing financial difficulties. The Solidarity Fund remained active throughout the year.





CONTRIBUTION TO THE NATIONAL EFFORT BASED ON RESEARCH CAPACITY

CERTIFICATION OF MASK EFFICIENCY, RECYCLING

Following the actions requested by the Prime Minister's office in March 2020 within an interministerial framework, Mines Saint-Etienne and IMT Atlantique worked with the DGA, the DGE and ANSES* to measure mask filtration capacity*.

This resulted in a set of two complementary measurement benches:

- a bench developed by IMT Atlantique (through the GEPEA laboratory), which measures the filtration capacity in the physical sense and therefore represents a first stage of assessment;

- a bench set up jointly by Mine Saint-Étienne's Centre for Biomedical and Healthcare Engineering and its partners at Jean Monnet University, which measures the filtration capacity for infectious agents. This test bench was the first facility accredited by the French National Agency for Medicines and Health Products (ANSM) to validate the filtration efficiency of surgical and general-use masks for infectious agents (and remains the only public facility out of the two accredited facilities in France). Manufacturers who were developing new mask production chains were then able to have them validated by this bench and subsequently affix the CE marking. The bench therefore provided a key contribution to expanding national production and supplying masks to the healthcare system in particular.

As an extension to this work, research is being carried out at Mines Saint-Étienne and IMT Atlantique on the possibility of replacing single-use (EN14683:2019 type) surgical masks by reusable cloth masks, in connection with government departments. The goal is to establish validation capacity based on the two stages mentioned above.

* The French Directorate General of Labor (DGT), the French Directorate General of Health (DGS), the French Directorate General for Enterprise (DGE) and the French Defense Procurement Agency (DGA), the French Agency for Food Health & Safety (ANSES)

KNOWLEDGE MOBILIZATION

Teaching and research staff contributed their scientific knowledge to help respond to the many challenges posed by the health crisis. Researchers at Mines Saint-Étienne's Centre for Biomedical and Healthcare Engineering made their digital simulation tools dedicated to hospital logistics available to the healthcare system. At IMT Mines Alès, a team is working on detecting the Covid-19 virus in wastewater, which would make it possible to implement health measures at the neighborhood or building level.

The impacts of measures on territories were also studied. IMT Mines Albi worked with the Prefecture of the Tarn department on a mapping and decision support tool to optimize the allocation of volunteers and their routes based on local fragility levels department-wide. The Silent Cities project in which IMT Atlantique took part studied changes in uses and biodiversity in cities during lockdown.

In the field of digital security, algorithms (based on statistical learning) for detecting fake news related to Covid-19 were developed by EURECOM to provide automated fact-checking. And Télécom SudParis' expertise in cybersecurity helped gain an understanding of the cyber-threats posed by new uses of information technology.

Scientific knowledge from IMT schools also provided insight into the societal implications of the crisis. Different schools studied the impacts of new working arrangements on social relationships at work (video conferences, remote work, work/life balance) and the effects of health measures on certain jobs and business models. As such, researchers at IMT Lille Douai focused on the consequences of outsourcing cleaning and disinfection duties. Last, but not least, at Télécom Paris a team of sociologists is working on understanding how encyclopedic knowledge related to the pandemic is built on Wikipedia.





IMT SCHOOLS AND STUDENTS PITCH IN TO SUPPORT OTHERS THROUGH A WIDE RANGE OF INITIATIVES

IMT schools, faculty, staff and students mobilized to support healthcare workers by providing them with masks, gloves, disposable gowns and other needed items.

The schools also produced face shields and respirators using 3D printers that were sometimes brought to faculty members' homes during the lockdown.

Students also provided educational support and tutoring and helped middle school and high school students think about their higher education goals.

In addition, they supported companies in urgently setting up remote work solutions and developed location-based web platforms to connect volunteers with people who need help.



€1.6 MILLION INVESTED BY INSTITUT MINES-TÉLÉCOM IN IT INFRASTRUCTURE AND EQUIPMENT AHEAD OF THE NEW ACADEMIC YEAR

IMT graduate schools are constantly transforming their teaching models to prepare students and professionals for the challenges of today's world, while at the same time incorporating new uses of technology. As such, there has been an increased cross-over of in-person and distance teaching methods over the years. They were rolled out on a large scale during lockdown to ensure continuity of learning with the same educational quality. IMT upped the pace of this transition through its exceptional investment to acquire equipment and strengthen its IT infrastructure to ensure that the new academic year would get off to a successful start regardless of the health guidance at that time (number of individuals allowed in a given space, lockdown measures). This investment has made it possible to build on the experience gained in the spring through more permanent initiatives, such as sharing resources on the teaching resources library.



ENROLLMENT UP AT THE START OF THE 2020 ACADEMIC YEAR DESPITE THE HEALTH CRISIS

Despite a drop of 1.5 percentage points in foreign students recruited, overall enrollment was up 5% in 2020.

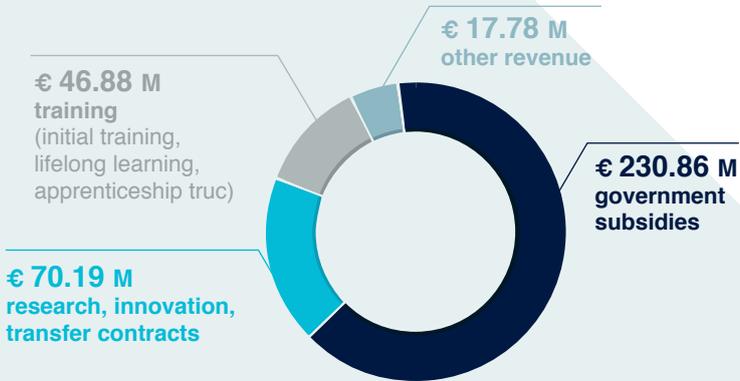
Moreover, in light of the high quality of training that is valued by companies, the 2,600 apprentices at Institut Mines-Télécom graduate schools were able to obtain an apprenticeship contract very quickly: 95% of the apprenticeship contracts were drawn up several weeks before the start of the 2020 academic year, and 100% of apprentices from IMT schools had signed an apprenticeship contract with a company by the start of the 2020 academic year.



KEY FIGURES

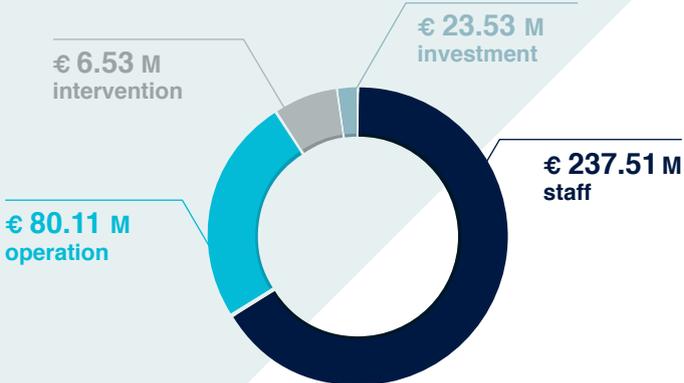
REVENUE

€ 365.71 M



EXPENDITURE

€ 347.67 M



NUMBER OF STUDENTS

13,250

- ▶ **9,090 engineering students**
Including **2,580** apprentices
- ▶ **1,190 management students**
Including **200** apprentices
- ▶ **1,150 PhD students**

NUMBER OF STAFF

3,810

including more than **2,180 professor-researchers, professors and research engineers** + doctoral and 1 post-doc students excluding CIFRE scheme



Institut Mines-Télécom is a public higher education and research institution, under the authority of the French Ministry for the Economy, Industry and Digital Affairs. It groups together 8 graduate schools, 2 subsidiaries and a network of strategic and affiliated partners. Its activities in the fields of engineering sciences and digital technology support the education of engineers and managers, partnership-based research, innovation and economic development. Always attentive to the economic world, IMT combines strong academic and scientific legitimacy, close corporate relations and strategic positioning in the key transformations of the 21st century: digital technology, industry, energy and ecology, and education. IMT is a founding member of the Alliance for the Industry of the Future and co-founder of the Franco-German Academy for the Industry of the Future with Technische Universität München (TUM). It is recognized by 2 Carnot Institute certifications for the quality of its partner-based research. Each year, IMT trains over 13,000 students, concludes more than 70 million research contracts, and hosts some 100 start-up in its incubators.

- IMT Atlantique
- IMT Lille Douai
- IMT Mines Albi
- IMT Mines Alès
- Institut Mines-Télécom Business School
- Mines Saint-Étienne
- Télécom Paris
- Télécom SudParis
- EURECOM
- InSIC

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