



CentraleSupélec

université
PARIS-SACLAY

ANNUAL REPORT 2020

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2020 will be remembered as an extraordinary year in so many ways.

On the 1st January, CentraleSupélec realised a long-term strategic project with the co-founding of Paris-Saclay University with four major partners, thus creating an institution that was immediately ranked 14th globally in the prestigious Shanghai rankings, and 1st in continental Europe. In the process, the international jury definitively validated the IDEX label (Excellence Initiative), thus acknowledging both the quality of our research and the potential of our ecosystem. We have turned a new page in our history. Indeed, with the inclusion of the University's "Engineering and Systems Sciences" Graduate School, CentraleSupélec has taken on a new dimension. It is now up to us to show that the new whole exceeds the sum of its parts, in terms of research as well as in teaching and in innovation.

Another prestigious ranking, the Times Higher Education, more specifically recognised the quality of our engineering programs, with CentraleSupélec taking 1st place in France in 2020, and 22nd place worldwide for graduate employability, judged by businesses around the world. While professional integration appears uncertain for young people, this result bodes well for our students who, throughout the pandemic, have proven their solidarity, dynamism and adaptability: qualities particularly sought after by recruiters.

Despite the pandemic, CentraleSupélec continued the roll out of its strategy. Of the many projects that have come to fruition in 2020, we give particular mention to the new 3rd year of the unified curriculum, the in-depth reorganisation of teaching departments to better respond to new challenges, the signing of an "ESA_Lab" in partnership with the European Space Agency, and the launch of Cap Prépa. Cap Prépa is a summer training course developed in partnership with ESSEC and designed for final year high school students from disadvantaged backgrounds who are applying for preparatory science classes.

In addition, the consolidation of CentraleSupélec's finances allowed the School to recruit 940 students to the first year of the engineering cycle (compared to 895 in 2019, and 804 in 2018), thanks to the high resilience of its international sectors and to additional recruitment to the university from outside the traditional scientific "prépas" channels, as well as via a new course opened in 2020 in Metz for students coming via Agricultural and Veterinary Science "prépas" (BCPST).

For their part, the Rennes and Metz campuses have performed excellently, in terms both of the standing of engineering students in the curriculum, and of specific projects. While welcoming the class of students from Agricultural and Veterinary Science "prépas" for a specially tailored first year, the Metz campus celebrated its 35th anniversary by announcing its repositioning with a new focus on a "Transitions Workshop". Meanwhile, the arrival of the metro at the gates of our Rennes campus, and the high profile of the field of cybersecurity have combined to give this campus renewed dynamism and enhanced

potential. Finally, the Pomacle Biotechnology Chair, backed by the confidence of its sponsors and renewed at the start of 2020 on the basis of the quality of its results and its scientific outlook, was able to embark on a new and highly ambitious project.

Despite the scale of these achievements, they cannot obscure the major impact of Covid on CentraleSupélec in 2020. At times of crisis, strong characters stand out. And this crisis has revealed the quality and strength of the School's teams.

The abrupt switch to distance learning at the very beginning of the first confinement underscored the perfect preparedness and performance of the information systems, as well as the commitment of the teachers who were able to continue teaching their courses, maintaining educational quality and close operational follow-up. The fluidity of this almost instantaneous shift was widely praised by students.

While continuing to maintain the "vital" functions of the School, Operations Management and Administration oversaw the implementation of health protocols at all levels and throughout multiple changes as the pandemic evolved, ensuring the safety of staff and students. Despite the difficulty of face-to-face interactions, the Department of Corporate Development coped admirably in maintaining links with our partners in the business world. Similarly, Executive Education was able to partially offset the withdrawal of companies by significantly increasing the activity of Specialised Masters.

The Communication team faced particular challenges given the reduction in face-to-face interactions, but ensured that the most intense digital exchanges in the school community were maintained. Meanwhile, the Department of International Relations assumed overall responsibility for French students abroad, as well as for international students on our campuses, who were particularly vulnerable in the face of practical and psychological difficulties. And despite restricted access, laboratory activities continued to a considerable extent, including experiments and scientific production.

The admissions team in charge of recruiting students from preparatory schools was fully aware that the slightest incident could have extensive consequences. Working to an exceptionally tight schedule that was established at short notice, they managed to organise a uniquely complex application procedure (due to the number of exam centres and the health protocols to be respected) that was adapted to the circumstances.

Lastly, we must pay tribute to the many acts of student solidarity, both outside the School, and in support of the most vulnerable students. Student associations made major contributions to maintaining and developing the social ties which are so essential to student wellbeing, sometimes demonstrating a degree of agility in reinventing their operations that that would be the envy of many businesses. The Alumni Association generated similar dynamism for the benefit of the alumni community.

Ultimately, and despite the challenges that none of us could have anticipated, the School had a good 2020, thanks to the dedication of the entire community. While Covid contamination levels remained low for both students and staff, 2020 leaves other scars: team fatigue due to the efforts expended, but also the distress of many students, despite the recognised quality of the support provided by both the School and by a very active Foundation.

The following pages look back in detail at this atypical year, during which the Covid crisis revealed the best of the School: the human qualities of its community, and the strength of its collective values rooted in a long tradition. Appropriately perhaps, the year ended with the completion in late December of a book titled "CentraleSupélec inventeur d'ingénieurs" (*CentraleSupélec: Inventing Engineers*), which traces the history of its two constituent schools. It shows that there has been no shortage of crises, and yet development and success have continued regardless.

May these historical examples feed our optimism, and inspire us together to write the next chapters of this long history, and welcome the promising opportunities before us.



MAJOR EVENTS



PARIS SACLAY UNIVERSITY: EXCELLENCE IN ACTION

More than ten years after the subject was first discussed, Paris-Saclay University was officially created on the 1st January, 2020 (decree n° 2019-1131 of November 5, 2019). It replaces the Paris-Sud University and the "Paris-Saclay University" Community of universities and establishments, and integrates as component institutions AgroParisTech, CentraleSupélec, ENS Paris-Saclay and the Institut d'Optique Graduate School (all of which retain their legal status), as well as the Institut des Hautes Études Scientifiques.

It brings together, by agreement, the University of Versailles-Saint-Quentin and the University of Évry as associate members, with a view to merging by 2025. CEA, CNRS, INRA, Inria, Inserm and ONERA have confirmed their strengthened partnership with the new Paris-Saclay University.



First appearance in international rankings

The Paris-Saclay University thus created entered the world rankings. It made a grand entrance, taking **14th place worldwide** in the **2020 Shanghai Ranking**, which lists the best institutions in the world in terms of research. It thus becomes the **top French establishment** in this classification.

This excellence is also reflected in the Shanghai thematic rankings, published in June 2020, in which the University is ranked:

- Number 1 university in the world for mathematics, ahead of Princeton;
- Number 1 university in Europe for physics (9th worldwide);
- Number 1 university in France in 12 disciplines (engineering, medicine, agriculture, etc.);
- In engineering sciences, the university ranks among the best universities in the world, especially in automation and control (29th) and telecommunications (23rd).

IDEX confirmation

On the 5th November, 2020, Frédérique Vidal, Minister of Higher Education, Research and Innovation, and Guillaume Boudy, Secretary General for Investment, announced the confirmation of the Initiative d'Excellence (IDEX or Excellence Initiative) for Paris-Saclay University.

In line with the jury's proposal, the State has therefore decided to continue its annual support for this initiative.

This confirmation opens a new chapter for the University, which can put all its energy into its students and its research. In particular, it will guarantee the development of the Graduate Schools, (and thus our masters degrees, doctorates and our shared research policy), and the development of Paris-Saclay University, which is responsible for a significant proportion of undergraduate degrees.

“ This recognition speaks to the quality of our students, our laboratories and our researchers. A real success in terms of our profile, highlighting what we do and making our community proud. But we must not be blinded by this recognition: we must continue to show that the whole is greater than the sum of its parts.

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ROMAIN SOUBEYRAN

President of CentraleSupélec in *le Monde des grandes Écoles*

2020: MAINTAINING PERFORMANCE DESPITE THE CORONAVIRUS PANDEMIC

For two years, CentraleSupélec has been using an Annual Performance Project (PAP) to help steer its operations. This dashboard is based on the strategic axes determined in 2018 during the Institution's evaluation by the HCERES (High Council for the Evaluation of Research and Higher Education) and is validated each year by the Board of Directors. It sets annual objectives and measures their progress daily.

2020 was characterised by teleworking and successive lockdowns, and showed clearly how important it was that all departments share this tool in order to stay the course and guarantee the overall performance of the Institution.

Given the very difficult circumstances, CentraleSupélec has refocused on its priorities, delaying some of the new projects planned for 2020 but confirming its commitment to education, research and service to companies.

However, not all departments were affected equally by the pandemic.

The International Relations Department, which was the most affected, had to postpone most of the new programs it had planned for 2020. But the flow of international students was managed, with an incoming class of 20%, against 24% in 2019. And preparation is ongoing for the new International Bachelor degree planned with MacGill University and scheduled to launch in 2022.

Paris-Saclay University, co-founded by CentraleSupélec, was created on the 1st January, 2020 and has kept its first promises

by obtaining 14th place in the Shanghai ranking this year, at the same time taking first place among continental European universities. The Engineering and Systems Sciences Graduate School was created, overseen by CentraleSupélec, and in 2020 we were able to finalise its structure and the scope of its activities.

The rollout of the new CentraleSupélec engineering curriculum was completed with the opening of the new third year in September 2020. Over 400 new courses were offered by an exceptionally dedicated faculty, despite the pandemic; a success supported by the Metz and Rennes campuses, which hosted 20% of second- and third-year classes. Without the commitment of these campuses, CentraleSupélec would not be able to cope with the increase in enrolment, with nearly 1,000 students having joined the first-year course in September 2020. Among them we observe a significant increase in those admitted via the university admissions process (around fifty), as well as, for the first time, eleven admitted via BCPST preparatory classes (Biology, Chemistry, Physics and Earth Sciences): two improvements to recruitment diversity that were requested by the establishment's Board of Directors.

2020 has, above all, demonstrated the resilience and robustness of the CentraleSupélec ecosystem with its stakeholders and partners. The Department of Corporate Development (DREV) exceeded its objectives on the collection of the apprenticeship tax and corporate sponsorship; proof, if needed, of the loyalty of our partners despite the crisis. Along with the Research Department, DREV also recorded a

record number of Chair creations and renewals in 2020, worth over €17 million, including the Photonics Chair in Metz, the Biotechnology Chair on the Pomacle research campus, and the Industrial Chair on Risks and Resilience of Complex Systems.

But one of the most remarkable points to remember from 2020 is the success of the Digital Institute and Information Systems (DISI), whose work over the past few years allowed the School to switch to fully digital operations in less than 24 hours, without any reduction in efficiency, either for our teleworking staff or for our remote-learning students; a quality of service and innovative tools that the School will be keen to further develop in the years to come, and which was endorsed by a user satisfaction rate of close to 90%.

The extraordinary year that we have just completed has also given us the opportunity to think about the future. As a result, three new strategic axes were launched, all integrated into the 2021 Annual Performance Project.

The first concerns important societal challenges to which CentraleSupélec wishes to respond. Themes addressed in 2020 include sustainable development, equal opportunities, and openness to all forms of diversity, ethics and deontology, with advisers nominated to oversee CentraleSupélec's increasing commitment to these areas. These are developments that we have also highlighted by refocusing the Metz campus as a "Transitions Workshop", a place for real educational experimentation and research on these subjects.

The increase of entrepreneurship, with several incubation and start-up acceleration programs launched this year, is also one of 2020's priorities, now listed explicitly in the 2021 Annual Performance Project.

Finally, new sectors and topics are available to our engineers today. We have thus defined and named advisers for multiple roadmaps on health, artificial intelligence, cybersecurity, the factory of the future, biotechnology and life sciences. These are all topics of which we have high expectations, which also now feature in the 2021 Annual Performance Project.

We'll check back in a year ...



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**PHILIPPE
DUFOURCQ**
Vice President of
CentraleSupélec

CELEBRATING 35 YEARS OF THE METZ CAMPUS, WITH A NEW FOCUS ON SUSTAINABLE DEVELOPMENT

On the 8th October, the Metz campus celebrated its 35th anniversary. Various activities were organised, bringing together internal and external audiences. The School's President, Romain Soubeyran, spoke in front of an impressive panel, announcing the campus' new focus on sustainable transitions; a theme of the future which promotes the campus' strengths and environment. The panel included Delphine Ernotte, President of the board of directors, and senior political figures from the region: Jean Rottner, President of the Grand Est region; P. Weiten, President of the Moselle department; F. Grosdidier, Mayor of Metz and President of Metz Métropole; the French Ambassador to Luxembourg; and the Vice-president of PSA Trémery.



Standing at a crossroads between communities and businesses, combining regional roots and international openness, the CentraleSupélec Metz campus is currently developing its excellence in a variety of cutting-edge areas: imaging, transmission, data backup, photonics, etc. For the past two years it has also been innovating by recruiting students from increasingly varied backgrounds (apprentices, students from Agricultural and Veterinary Science preparatory schools, etc.). In 2020 there are 150 students on the Metz campus.

The Transitions Workshop campus: one of CentraleSupélec's strategic projects, centred on responsible sustainable development

Looking ahead, CentraleSupélec has chosen to focus its Metz campus on the development of these issues, which are now essential for all private and public players, both in education and in research. Younger generations are increasingly sensitive to these issues, keen to give meaning and social utility to their studies and their professional careers.

Ensuring responsible and sustainable development requires our companies to make transitions in multiple areas:

- **Technological transition** (new modes of production, distribution and storage of energy, use of digital technology, biotechnologies, etc.);
- **Economic transition** (circular, social and solidarity economy, location of industry, etc.);
- **Social and societal transition** (change in lifestyles, behaviours and customs);
- **Transition in public policies** (water and waste management, health, etc.)

The goals of the **Transitions Workshop** on the Metz campus can be further broken down as follows:

- Contributing to educating engineers and executives who, with their scientific and technical background, are able to stimulate and lead these transitions, to understand them in their entirety and to bring these questions to decision-making spheres;
- Raising awareness of technological issues among students, professionals and decision-makers;
- Working with all actors concerned, private and public, on concrete solutions, in direct connection with the campus' research and development activities.

An ambitious refocusing that draws on the very essence of the School and on its environment

- Its scientific excellence, since CentraleSupélec is co-founder of Paris-Saclay University, 14th world university in the Shanghai ranking;
- The cross-border approach made possible by the Metz campus' geographical location;
- The campus's extensive experience of the links between technology and people.

CentraleSupélec is embarking on a new scientific, educational and societal journey to build the areas of development made necessary by the urgent environmental and human challenges of today.



From left to right: Sylvie Retailleau (President of Paris-Saclay University), Marc Sciamanna (Professor and holder of the Photonics Chair) and Delphine Ernotte (President of the CentraleSupélec Board of Directors)

A YEAR OF RESILIENCE, DEALING WITH THE COVID CRISIS

As soon as the first confinement was announced, the School successfully shifted its administrative and technical staff and its faculty members to remote working within a matter of days. Students did not suffer, with online teaching provided from the first day of lockdown, including teaching an entire class (950 students).

During those months, the Department of Heritage and Property Management (DPIET) and Operations Management on the Metz and Rennes campuses in charge of building management, demonstrated great agility, adapting their operations to cope with new constraints, while guaranteeing the access and management systems of the buildings, the organisation of classes and even the very limited associative life.

All measures taken have been recorded in the Business Continuity Plan, which is regularly updated and available to all staff.

In the libraries, remote services were immediately put in place to facilitate the access of reliable, high-quality information.

Uninterrupted teaching continuity

Teaching continuity and student monitoring have been the School's priority.

This is why support for teachers was provided throughout the year, comprising technical assistance from the DISI (Digital Institute and Information Systems) and support from the Teaching Cluster.



Thanks to the dedication of the teams involved, all the educational activities of the curriculum (classes, projects, languages, workshops, options, business evenings, etc.) were maintained. Faculty members invested heavily in adapting their courses and devising appropriate teaching methods. Laboratory activities in the curriculum were maintained, thanks to the virtualisation of lab sessions in physics on both the Metz and Paris-Saclay campuses.

Academic staff also worked hard to facilitate communication with students, providing personalised responses to questions about their next steps: international semesters, collaborating with the International Relations Department, postponed internships, exam and timetable management, second- and third-year assignments.

Extra support for students

A variety of measure were taken by the School, and more specifically by the Student Support Department, the mental and physical health services, the International Relations Department, the social events manager, the CentraleSupélec Foundation and the Césal residence:

- Creation of an emergency fund to help students affected by the situation;
- Establishment of a new aid system based on one part of the CVEC (Contribution to Student Life on Campus);
- Local support in the Césal residence: technical services and a psycho-social risk prevention unit. Students repatriated to the Paris region and without accommodation were accommodated immediately;
- Support and follow-up of international students who remained on campus, including during vacations.

Maintaining research activities

All of the research teams successfully maintained their activities. During the first lockdown, the presence of laboratory staff allowed experiments in progress to continue uninterrupted. For the second lockdown, all activities were carried out, in compliance with social distancing guidelines including the limits on numbers.

Research teams were involved in Covid-19 research. Thus, the STOIC project, led by AP-HP (Cochin), with the Gustave Roussy Institute and CentraleSupélec, used artificial intelligence (AI) for reading chest scanners. The project focused on training AI on 10,000 scanners to assist with diagnosis and the appropriate level of care.

For its part, the School's Digital Vision Centre coordinated with two hospitals (Gustave Roussy and Bicêtre), the CNRS, Inria, Inserm and Owkin (a start-up), combining clinical, biological and imaging data in an AI-based prognosis project.

Reorganised admission process

In light of the exceptional situation, CentraleSupélec, in coordination with the other schools that operate under the auspices of the SCEI (the Engineering Schools Application Service or "Service de Concours Écoles d'Ingénieurs"), postponed its written admission examination by more than two months, to the end of June. The number of writing centres was increased from 59 to 82. It was decided not to schedule oral tests, and to make offers solely on the basis of written tests. CentraleSupélec also committed to reimbursing part of candidates' exam fees, to reflect the reduction in expenses.

Despite the disrupted conditions, recruitment remained excellent.

Staff news

From the start of the first lockdown, the DISI also focused its support on administrative staff, providing laptops for staff who needed them, and training in the use of Microsoft Teams for meetings.

With the development of teleworking, already widely practiced within the School, specific support was provided for staff and managers. The Human Resources Department has increased monitoring of isolated people and those facing psycho-social risks, working with managers and health services (psychological unit, preventive medicine). It has also set up HR Cafés dedicated to staff on the one hand and managers on the other.

Staying connected with staff was also a central priority, resulting in dedicated internal communication: regular information notes; a dedicated area on the School's intranet; and the President's online lectures.

CentraleSupélec students and staff take action against Covid-19

A new student association called "HelpOut" was created in response to the pandemic. It put together an inventory of the different ways in which students could get involved with various associations.

The association organised pickups from students, as well as deliveries of masks and hand sanitiser gel.



3D4Care: a symbolic project

The 3D4Care project was the spontaneous result of various individual initiatives. Between late March and late May it brought together staff from different establishments⁽¹⁾, to produce 17,500 protective visors for over 300 hospital departments, using 3D printing. The visors were distributed to caregivers in Paris hospitals and health workers in the inner suburbs of Paris through a logistics chain involving student volunteers. CentraleSupélec, through its fab lab, "La Fabrique", coordinated logistics and communication for the project.

The group's activity has gradually extended to other technical devices, in particular with product variations adapted for paediatric and geriatric care. They were able to achieve this, thanks to donations and financial support from the Paris-Saclay University and CentraleSupélec Foundations.

⁽¹⁾ URB2i Laboratory (UR 4462) of the Universities of Paris and Sorbonne Paris Nord, Centre de simulation iLumens Paris Diderot, PARCC Inserm, Paris-Saclay University



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**THE YEAR
IN EVENTS**

01/20

15th January

Lecture by François Hollande

The Symposium association welcomed François Hollande, former President of the Republic, to the Paris-Saclay campus to talk about his new book "Répondre à la crise démocratique" (Responding to the Democratic Crisis).

16th January

New scientific Chair created with Lusion

Lusion and CentraleSupélec joined forces to create a Research Chair in "Artificial intelligence in payment fraud detection and trading".



20th January

"Bouge la Science" Forum

This event, organised by members of the student association "Espérance en Béton", aims to increase middle school students' awareness of scientific options.

27th January

Inauguration of ATOMA

The Soil, Structure and Materials Mechanics Laboratory (MSSMAT) inaugurated its new transmission electron microscope (MET) as part of the ATOMA project (Analyses and observations: from micrometre to angstrom).

02/20

5th February

Launch of the Steering of the Circular Economy Chair

This Chair is a result of collaboration between three laboratories of the School and Vale NC (Vale Mining in New Caledonia), and aims to develop optimised and sustainable extraction strategies.

10th February

Lecture by Alexis Le Quoc

Alexis Le Quoc gave a lecture during Start-up Week. Le Quoc is an engineer and co-founder of Datadog, a company specialising in IT application performance management.

12th February

2nd place in L'Étudiant ranking

CentraleSupélec took 2nd place in the 2020 L'Étudiant's ranking of engineering schools.

12th February

Lecture by François Molins

François Molins, Attorney General at the Court of Cassation, was invited by the Symposium student association to give a lecture on justice and security issues. Mr. Molins looked back on the wave of attacks that has hit France, and the role that magistrates can play when faced with such dramatic events.

19th February

Launch of ESA_Lab @CentraleSupélec

CentraleSupélec has joined forces with the European Space Agency to launch ESA_Lab@CentraleSupélec, with the objective of developing interest in and knowledge of peaceful space exploration activities and the resulting transversal applications, such as climate monitoring, Earth observation, security, sustainability, risk management, space economics ...



19th February

Night and day

The prologue to the CentraleSupélec "Raid" took place in the Chevreuse Valley and was attended by competitors from *grandes écoles* and businesses.

21st February

Night of the Troubadours

La Nuit des Troubadours is a festival organised by students who are passionate about music, concerts, shows, street art, fire, music and alternative arts.

03/20 **2nd March** **1st place for CentraleSupélec Junior Enterprise**

For the second year in a row, the JCS was ranked best Junior Enterprise in Europe.

3rd March **CentraleSupélec engineering students top of the Thalès Tech Challenge**

A team of 1st year engineering students from CentraleSupélec won the Thalès Tech Challenge innovation competition at the national level with their Scan Ocean project.

12th March **Launch of the PRISM precision medicine centre in oncology with the Gustave Roussy Institute**

CentraleSupélec, in collaboration with Inserm and Paris-Saclay University, joined forces with the Gustave Roussy Institute, launching the National Centre for Precision in Oncology. PRISM will conduct large clinical studies and develop molecular analysis technologies and data analysis methods.

16th March **1st day of lockdown**

CentraleSupélec immediately switched all of its courses to distance learning.

30th March **Manufacture of safety visors for nursing staff**

La Fabrique, the School's fab lab, worked with the "3D4Care" consortium of universities and hospitals to supply around twenty institutions with protective visors made using 3D printing techniques.



04/20 **3rd April** **Support fund created for students experiencing financial difficulties due to Covid-19**

The CentraleSupélec Foundation working on behalf of students, the School, research and the material production to face this unprecedented crisis situation. The Foundation created a support fund for students experiencing financial difficulty as a result of the current epidemic. A call went out for contributions to the fund.

16th April **Faculty member Jacques Palicot honoured with the CNFRS-URSI France medal**

Jacques Palicot, a faculty member at the Institute of Electronics and Telecommunications of Rennes (IETR), is the 2020 winner of the CNFRS URSI-France medal which rewards a scientist who contributes to exceptional advances in the field of radio sciences.

27th April **"Challenges" magazine recognises two start-ups co-founded by graduates of the School**

"Challenges" listed start-ups "Buster.AI" and "Logora", founded or co-founded by engineers from the School, in their 2020 top 100 start-ups to invest in.

29th April **End of the campaign for donations to help Public Hospitals of Paris (AP-HP Assistance Publique - Hôpitaux de Paris)**

05/20 €15,500 raised by associations and students of the School.

15th May **Solidarity CentraleSupélec**

In light of the coronavirus pandemic, the Foundation created an emergency fund for students and doctoral students, donated €25K to the STOIC program (chest scanner for diagnosing pneumonia linked to coronavirus) and donated €30K to help manufacture visors for caregivers.

22nd May – 17th June

Covid-19: Screening and diagnosis through data analysis

Public Hospitals of Paris (AP-HP), the Gustave Roussy Institute, TheraPanacea (founded by Professor Nikos Paragios) and CentraleSupélec used statistical and deep learning to design an algorithm that delivers a prognosis flagging severe cases. The prognosis is considered more reliable than a panel of three radiologists.

06/20

11th June

Publication of the QS 2021 ranking

The QS 2021 ranking, which lists the best universities / higher education establishments in the world, ranked CentraleSupélec 138th worldwide, and 7th for employer reputation. Ranking by subject: 59th for "Engineering & Technology" (2nd French institution); 69th for ranking of graduate employability.



15th June

Engineering students engage in machine learning to fight the pandemic

A team of engineering students was selected following the Ministry of the Armed Forces' call for projects to combat Covid-19. Hopia was one of 37 projects selected with the aim of finding innovative solutions for combatting the epidemic.

15th June

ScanCovid IA: Artificial intelligence predicting infection severity

The OPIS project team, made up of researchers from Inria and the Digital Vision Centre laboratory (CVN), and the Gustave Roussy Institute are working together on predicting the severity of Covid-19 infections using AI analyses of patients' 3D chest scans.

17th June

Medical research: a new avenue for immunotherapy

A scientific article on the impact of immunotherapy was published by a team of researchers from the Digital Vision Centre and by Baptiste Kas, a second-year engineering student, in collaboration with members of the Gustave Roussy Institute.

27th June - 1st July

Centrale-Supélec admission exam

Given the exceptional circumstances of the Covid-19 pandemic, the Centrale-Supélec admissions exam board decided not to schedule oral exams and to make offers solely based on written exams.

29th June

Machine learning for insects

Léonard Boussioux, Brice Rauby and Emmanuel Jehanno, researchers and entrepreneurs from the Charles Kantor School, won 1st prize in the student branch of IEEE, a global research organisation. With their algorithms, citizen science can be combined with technology for the conservation and understanding of biodiversity.

07/20

1st July

Georges Chodron de Courcel named new President of the CentraleSupélec Foundation

Georges Chodron de Courcel, who graduated from Centrale Paris in 1971, joined BNP in 1972. He was Head of Corporate and Investment Banking at BNP Paribas, then Deputy Managing Director of BNP Paribas from June 2003 to June 2014.

8th July

Shanghai thematic rankings

Paris-Saclay University ranked 1st in the world in maths, 9th in physics and 1st in France in 12 other disciplines.

16th – 30th July

Live online sessions for candidates

Students and teachers from CentraleSupélec organised live online sessions to introduce candidates to life at the School, looking at clubs and associations, space, IT, health, the environment ...

17th July

Corine Dubruel elected new President of CentraleSupélec Alumni

The CentraleSupélec Alumni Board of Directors, elected by its members at the end of the General Assembly on the 9th July, 2020, elected the members of the board.

08/20

15th August

2020 Shanghai ranking: Paris-Saclay University enters the ranking taking 14th place worldwide

Paris-Saclay University was eligible for consideration in the ARWU (Academic Ranking of World Universities) for the first time, following its creation in January 2020, and became the top French institution in this ranking. It also ranked 14th globally.

24th – 28th August

Virtual CAP PRÉPA, the summer school for equal opportunities

CAP PREPA, a summer school organised by ESSEC and CentraleSupélec, was organised online and allowed nearly 90 school leavers with bursaries - including 31 scientists - to prepare their entry into preparatory classes.

26th August

Inter-school cooperation in public health

CentraleSupélec and six other higher education establishments in Rennes signed a declaration of inter-school cooperation in public health.

31st August

New 1st year class of engineering students starts at CentraleSupélec

948 engineering students began their 1st year as the Class of 2023.



09/20 1st September

Back-to-school lecture by François Villeroy de Galhau hosted by Symposium

Symposium welcomed François Villeroy de Galhau, Governor of the *Banque de France*, to talk about the current economic situation and the financing of ecological transition.

2nd September

Term starts on the Metz and Rennes campuses

Pupils in apprenticeship returned to the Metz and Rennes campuses. The Metz campus welcomed 1st students admitted via BCPST preparatory classes.

4th September

Vive la recherche! (Let's hear it for Research)

An event held on the Paris-Saclay campus aimed at informing 1st year engineering students about research.

5th and 6th September

Integration weekend

The Integration Weekend for the new class was held in strict respect of the current health protocols.

7th September

Prime Minister and the Minister of Higher Education, Research and Innovation visit Paris-Saclay University

Prime Minister Jean Castex and Frédérique Vidal, Minister of Higher Education, Research and Innovation, visited the University campus to pay tribute to the exceptional results obtained in the latest Shanghai ranking.

18th September

Launch of a Chair for safety and performance in the construction industry

The OPPBTP, the CentraleSupélec Foundation, Vinci Construction Terrassement, Eiffage Génie Civil and the School launched the "Prévention et performance dans le BTP" chair.

23rd September

Lecture by Stéphane Bancel

The Symposium association welcomed Stéphane Bancel, CEO of Moderna, to talk about their anti-Covid-19 vaccine.

24th September

**Data Sciences and Business Analytics
MSc ranked #3 worldwide by QS**

The Master in Data Sciences and Business Analytics, in partnership with ESSEC, took 3rd place out of 97 programs ranked around the world in the latest QS rankings, maintaining 1st place in Europe.



10/20

2nd October

Science Festival

CentraleSupélec participated in the *Fête de la Science*, online this time.

2nd October

**Kenyan Minister of Foreign Affairs visits
Paris-Saclay University**

Raychelle Omamo, Kenyan Minister of Foreign Affairs, discussed renewable energies and the links between education, research and business. While at Paris-Saclay University, the Minister visited CentraleSupélec's Process and Materials Engineering laboratory and talked with researchers.

6th October

**Launch of the "Research for Health"
podcast**

CentraleSupélec is shining a spotlight on its research activities in artificial intelligence and data applied in medicine by launching a series of podcast reports. The first episode presents the PRISM project, coordinated with the Gustave Roussy Institute, Paris-Saclay University and Inserm.

6th October

Final seminar of the 3D4Care project

The seminar, organised by CentraleSupélec, reported feedback from 3D4Care, promoting conversation and discussing collaborative projects on the subjects of Health / Engineering / Industrialisation.

7th October

**CentraleSupélec supports innovative
start-ups in the fight against Covid**

Following its call for projects in partnership with the CentraleSupélec Foundation, the School chose five laureates on subjects related to the challenges created by the Covid crisis and using artificial intelligence or data science.

8th and 9th October

**The Metz campus celebrates its 35th
anniversary**

To celebrate this anniversary, the Metz campus unveiled its innovative positioning with the "Transitions Workshop", a CentraleSupélec strategic project focused on responsible and sustainable development. The School's Board of Directors met in Metz for the first time.



13th October

**French Tech Paris-Saclay back-to-
school conference**

French Tech Paris-Saclay (FTPS) had its annual conference in partnership with CentraleSupélec and the community of the Paris-Saclay agglomeration.

13th October

C³, cybersecurity skills centre

Rennes academics plan to create C³ (C-Cube), an inter-establishment tool whose mission will be to strengthen training, research and innovation in cybersecurity in the region.

13th October

Discovering the SKA project

The Square Kilometer Array (SKA) project concerns a giant radio telescope which will be the largest telescope in the world, with an effective collecting area of 1 km². Researchers from the L2S laboratory are involved in this project.

15th October

BIM - Model In Use certified for the Bouygues building

SOCOTEC auditors certified the BIM Model produced by Bouygues Énergies & Services for the optimisation of the operation and maintenance of the Bouygues building.

16th October

Cyber security forum on the Rennes campus

The 3rd recruitment forum for students specialising in cybersecurity was held on the Rennes campus.

16th October

Manufacture of a low-cost CO₂ measurement tool

La Fabrique launched a new project: the manufacture of a CO₂ measurement tool to combat the spread of Covid-19 by aerosol.



21st October

Gaëlle Rondepierre laureate of the 2020 L'Oréal-UNESCO Young Talents Prize for Women in Science

Gaëlle Rondepierre, who graduated in 2016, was one of 35 winners of this award. Her work focuses on the study of oil / solid wetting in water in the presence of surfactants, a key issue for wastewater treatment in particular. She is also very involved in the "Femmes & Sciences" association (Women in Science).

28th October

Using AI to anticipate Covid-19 severity

Doctors and researchers (Gustave Roussy Institute, AP-HP, CentraleSupélec, University of Paris, Paris-Saclay University, Inserm, Inria, TheraPanacea) established a digital signature of biomarkers that predict the evolution of Covid-19. The results were published in the journal Medical Image Analysis.

11/20 5th November

Confirmation of Paris-Saclay University IDEX

Frédérique Vidal, Minister of Higher Education, Research and Innovation, and Guillaume Boudy, Secretary General for Investment, announced confirmation of the Excellence Initiative (IDEX) for Paris-Saclay University.

5th November

GeePs laboratory doctoral student wins Chancellery prize

Simon Meunier, a doctoral student at the GeePs laboratory, received the University Chancellery prize for his thesis on a methodology for the optimal design of photovoltaic water pumping systems for rural communities.

9th – 13th November

CentraleSupélec celebrates the centenary of Boris Vian, alumnus of the School

On the centenary of the birth of Boris Vian, CentraleSupélec paid homage to this exceptional student and offered a discovery trail of his work: lectures, testimonies, concerts, reading circles, exhibitions and book presentations.

10th November

2020 Alliance Day

The European University EUGLOH, of which Paris-Saclay University is a partner, organised Alliance Day, an online forum for interactions on research and teaching activities in the field of global health.

13th – 14th November

CentraleSupélec wins the Metz edition of ActInSpace

The Metz campus student team won the benchmark international hackathon in the field of space applications, held in Metz for the first time.



17th – 19th November

CentraleSupélec Forum: fully online

In full respect of the current health constraints, an online version of the Forum was organised by the hard-working and exceptionally responsive team in charge. Elie Girard, CEO of Atos, was the guest of the honorary conference.

19th November

CentraleSupélec ranked top French establishment by Times Higher Education

The School took 22nd place (44th in 2019), thus becoming the top French establishment in this ranking. Overall, France ranks 2nd globally with 18 ranked institutions.

23rd – 27th November

17th annual Arts week

This event, which the Arts Bureau organises on campus every year, went online in 2020, becoming “Ap@rtés confinés” (Lockdown Ap@rtés).

27th November

Danielle Attias, professor at CentraleSupélec, guest on France Culture

Danielle Attias, professor at the Industrial Engineering Laboratory, participated in the France Culture podcast "Entendez-vous l'éco" (Can you hear the Eco) on the clean car market.

30th November

1st annual Pitch & Burger

The Entrepreneurship team and the Génius CentraleSupélec association organised their first online Pitch & Burger with guests Teddy Pellerin, founder of Heetch, Thibaut Arnould and David Atlan, co-founders of ROB.

2nd December

Lecture by Cédric Villani

The Symposium association welcomed Cédric Villani, mathematician and Member of Parliament, who spoke about engineers in politics.



7th December

A new distinction for the School's Junior Enterprise

The School's Junior Enterprise won the Alten Prize for Best Business Development Strategy at the JEX organised by the National Confederation of Junior Enterprises.

7th December

Urbanisation and mobility seminar: past, present and the future

The seminar, which is organised by the Anthropolis Chair and the IRT System X, looked at how urbanisation and urban mobility influence and shape each other.

7th – 11th December

EUGLOH organises Social Entrepreneurship 4 Health

This course is designed for students of all fields and levels of study who are interested in solving global health problems, and is provided by the European University Alliance for Global Health (EUGLOH), of which CentraleSupélec via Paris-Saclay University is a partner.

15th December

“Risks and Resilience of Complex Systems” Chair launch

CentraleSupélec via the Industrial Engineering Laboratory, EDF, SNCF, Orange, the EDF - Institut de France - Académie des Sciences Science and Education Program and the CentraleSupélec Foundation launched the “Risks and Resilience of Complex Systems” (RRSC) Chair.

16th December

2nd place for CentraleSupélec in the Le Figaro Étudiant 2021 ranking

Le Figaro Étudiant published its 2021 ranking of engineering schools.

17th December

2020 Sébastienne Guyot scholarships

The CentraleSupélec Foundation, with the support of partner companies, awarded three Sébastienne Guyot scholarships. Specifically for young women, these scholarships are named in honour of one of the very first female graduates of Ecole Centrale who achieved an exceptional career.



upélec

▼
EDUCATION

2020 ACADEMIC YEAR: CONTINUING DIVERSITY IN RECRUITMENT

The new class of engineering students, which arrived on the 31st August, 2020, comprises nearly 950 students spread across the three campuses (compared to 915 in 2019). This increase in enrolment compared to last year reflects the School's desire to open up to different backgrounds.

Thus, for the first time, eleven students from Agricultural and Veterinary Science preparatory classes - seven female and four male students - began the first year of the School's engineering cycle. These students are based on the Metz campus for one year, benefiting from a year's focused teaching (extra maths and engineering sciences) before joining the rest of the class in the second year. Their decision to apply to CentraleSupélec can be explained by the general quality of the teaching, the School's reputation, its international openness and the breadth of courses offered.

The increase in the number of students holding a 3-year university degree continues, with 50 such students recruited this year (an increase of 13 compared to 2019).

The apprenticeship sector also saw excellent recruitment, with 46 apprentices from DUT, ATS (11 students) and from PT and TSI preparatory classes.

This policy reflects the School's desire to attract applicants from outside the traditional recruiting pools.

International students: a rocky start to the school year

The health measures and travel restrictions imposed by some partner countries and universities had a major impact on the arrival of international students on CentraleSupélec campuses.

Of the 118 students expected this school year for double degrees, accelerated courses or exchanges, only half were able to reach their place of study. Exchange students, being predominantly European, found it relatively easier to come to the School (74%). The same was not true for double degree and accelerated students, only 40% of whom were able to join us. Thus, the majority of Chinese students did not arrive, and only a third of expected Brazilian students are present on our campuses.

“
We believe strongly that recruitment diversity is an asset for the education of our students; it also responds to a demand from companies, who are looking for a variety of backgrounds to reflect the diversity of society.
”

▼
**ROMAIN
SOUBEYRAN**
President of
CentraleSupélec

FOCUS CLASS OF 2023 IN NUMBERS

- 948 students including 46 apprenticeship students in Rennes and Metz
- 50 students from the university stream (L3) and 11 students from IUTs
- 11 admitted from Agricultural and Veterinary Science preparatory classes
- 29 students from ESSEC and ESCP
- 20% international students representing 33 nationalities
- Nearly 20% women

A NEW 3RD YEAR FOR THE ENGINEERING CURRICULUM

The CentraleSup lec unified curriculum, the first year of which was introduced in 2018, was fully rolled out at the start of the September 2020 school year with the launch of the new third year.

Based on the Paris-Saclay, Metz and Rennes campuses, the 3rd year is structured in a matrix fashion around:

- 8 Majors, which segment the sectors in which graduates are called upon to practice upon leaving school. Each Major is itself sub-segmented into two to four Concentrations (scientific specialisations);
- 8 Professional Focus Options, which segment the professional sectors in which graduates will work on leaving school:
 - Research (Paris-Saclay, Rennes, Metz);

- Innovation and Intrapreneurship (Paris-Saclay, Rennes, Metz);
- Complex System Conception (Paris-Saclay, Rennes);
- Large-scale Project Management (Paris-Saclay);
- Operational Management (Paris-Saclay);
- Business Analytics (Paris-Saclay);
- Sales and Business Development (Paris-Saclay);
- CentraleSup lec Entrepreneur (Paris-Saclay, Rennes).

A total of 738 students are taking this new 3rd year, including 110 joining directly from the 2nd year.

As in previous years, some students have also chosen to take a double degree: 101 as part of a dual engineering-other program, 154 as part of an international program.

FOCUS ON MAJORS

CIVIL ENGINEERING AND TRANSPORTATION

- *Construction Sciences & Engineering (Paris-Saclay)*
- *Aeronautics, Space and Transport (Paris-Saclay)*

ENERGY

- *Energy Resources (Paris-Saclay)*
- *Energy Networks (Paris-Saclay)*
- *Energy Efficiency (Paris-Saclay)*
- *Sustainable Energy Systems (Rennes)*

LARGE-SCALE INTERACTIVE SYSTEMS

- *Control Engineering (Paris-Saclay)*
- *Design and System Sciences (Paris-Saclay)*
- *Supply Chain and Operations Management (Paris-Saclay)*

COMPUTER SCIENCE

- *Software Development (Paris-Saclay)*
- *Artificial Intelligence (Paris-Saclay)*
- *Information Systems Architecture (Paris-Saclay)*

- *Cyber Security (Rennes)*

MATHEMATICS AND DATA SCIENCE

- *Mathematical Modelling and and Financial Mathematics (Paris-Saclay)*
- *Data and information Sciences (Paris-Saclay et Metz)*

PHYSICS AND NANOTECHNOLOGY

- *Photonics and nano-systems engineering (Metz)*
- *Quantum Engineering (Paris-Saclay)*

COMMUNICATING SYSTEMS AND CONNECTED OBJECTS

- *Intelligent Systems and Networks (Paris-Saclay)*
- *Connected Objects and Embedded Systems (Rennes)*
- *Mobile Communicating Systems (Paris-Saclay)*

BIOTECHNOLOGY AND ENVIRONMENTAL ENGINEERING

- *Sustainable environment and production (Paris-Saclay)*
- *Healthcare and Biomedical Services (Paris-Saclay)*

ALSO IN 2020...

Trialling Covid-compatible lab sessions

Laboratory-based activities are the essential cornerstone of learning to be an engineer.

The Metz campus has decided to face the Covid-related challenges by offering its students lab sessions that fully respect Covid restrictions. They were quick to develop real remotely-piloted lab sessions for five courses: in the 1st year (Coding Week), the 2nd year ("Semi-autonomous drone navigation", "Smart Photonics Systems for Control and Measure", set up in collaboration with the Photonics and GDI-Simulation Chair, Connected wheelchair) and the 3rd year (Big Data).

This trial is part of a global project aimed at providing engineering students with lab sessions in educational scenarios in which most or even all lab sessions are handled remotely. The trial has received funding from the Ministry of Higher Education, Research and Innovation, with support from the CentraleSupélec Foundation and the School.

Example: Challenge Week in the 2nd year Engineering Challenge Term "Semi-autonomous drone navigation" (October 2020).

27 students, supervised by three faculty members from the campus, were able to carry out their lab-based activities by developing image processing and piloting algorithms and by testing them on real drones inside the Metz campus, via images taken in real time from the multiple cameras installed for this purpose.



Thanks to the development of the Data Centre for Education, DCE (<https://www.dce-cs.fr/>, originally funded by the Grand Est Region), students were able to control drones by connecting to a remote desktop installed with Linux (NoMachine solution), and work collaboratively while benefiting from the help of supervisors.

In this way, the CentraleSupélec Metz campus has developed expertise in setting up and carrying out remote lab sessions, earning credits internally (ongoing training modules for example) and externally (support for external organisations).

ALSO IN 2020...

120 STUDENTS
APPLIED FOR DIGITAL
TECH YEAR,
60 WERE
SELECTED.
DIGITAL TECH YEAR
IS AN INTENSIVE
TRAINING COURSE IN
DIGITAL INNOVATION
THAT OFFERS
STUDENTS FOUR
ENRICHING
EXPERIENCES IN ONE
YEAR, THREE WITH
FRENCH COMPANIES
AND ONE IN
COLLABORATION
WITH AN
INTERNATIONAL
START-UP. FRENCH
COMPANIES SUBMIT
THEIR NEEDS FOR
NEW PRODUCTS
WHICH ARE
PROTOTYPED BY THE
STUDENTS.

Educational innovation: supporting change and preparing for the future

The Teaching Cluster works to support teachers, helping them enrich their teaching practices and contributing to their development within their respective academic communities.

The goal of the Teaching Cluster is to support teachers not only in their daily practice, but also in the development of ambitious educational projects and quality teaching allowing them to share their expertise with students.

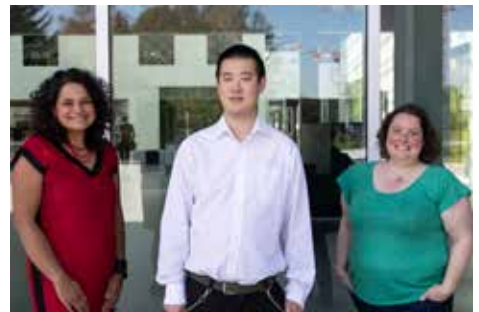
The team was completely renewed in September 2020 and now has three permanent members. It works on the following projects:

- **Course operation:** working with the DISI to provide support for teachers;
- **Course design:** professional development for teachers, welcoming new lecturers, offering training courses for teachers (in conjunction with the HR Department) with the network of educational engineers in the Paris-Saclay ecosystem;
- **The structuring of large-scale educational development projects** such as the piloting of new online assessment

tools, the development of the Eiffel studio and the development of anti-plagiarism tools;

- **Partnerships in educational projects:** currently involved in three European, education-related projects at CentraleSupélec (ASSETS +, Alliance4Tech and EUSL Energy) *Bienvenue en France*, as well as the relaunch of the School's partnership with Coursera.

For 2021, the Teaching Cluster will launch a network of pedagogical advisers within the teaching departments.



SPOTLIGHT ON EVALMEE, ONLINE EVALUATION TOOL

EvalMee is a cloud-based solution for evaluating students either in class or remotely while minimising the risk of fraud. Since September 2020, 520 students have responded to at least one evaluation on Evalmee and 7 professors have already tested it (out of 2,618 formative / certification evaluations returned).

Top ranking education

In the French rankings of engineering schools, CentraleSupélec continues to rank among the top three engineering schools:

- By maintaining its 2nd place in the “Figaro Étudiant” ranking;
- By ranking 2nd in the “Usine Nouvelle” ranking;
- By taking 2nd place in the “L’Etudiant” ranking.

All of these rankings have underscored the School’s close ties with businesses.



In addition, in the latest QS ranking, the Master in Data Sciences & Business Analytics, which is offered in partnership with ESSEC, comes 3rd out of 97 programs ranked worldwide, and retains the top spot in Europe.



CentraleSupélec engineering students win the Thalès Tech Challenge

THALES Tech Challenge Global Final



Supported by [Logos of partner institutions] in 2020

A team of 1st year engineering students from CentraleSupélec supervised by three faculty members won the Thalès Tech Challenge innovation competition at the national level with the Scan Ocean project. This is an autonomous underwater drone equipped with highly efficient passive sonar using machine learning. Scan Ocean will participate in the global challenge final scheduled for April 2021.

1st year student in the Research Track wins prize for best communication in an international conference on crystallography

In late August, Yoann Launay, a student then in his 1st year of the Research Track, won the prize for Best Communication in Poster Form in the international online conference "Quantum Crystallography Online Meeting 2020", which attracted about forty posters from around 120 participants representing 20 nationalities. He is carrying out his research project at the SPMS laboratory under the supervision of J.M. Gillet. His paper is titled "N-Representable one-electron reduced density matrices reconstruction at non-zero temperatures".

CONTINUING EDUCATION UNDERGOES ACCELERATED TRANSFORMATION

CentraleSupélec Executive Education reorganisation

In January 2020, CentraleSupélec Executive Education reorganised into a Business Unit. The reorganisation was in response to the growing differentiation of product lines and the need to relaunch growth by giving employees a transversal vision. The new structure puts the product and the customer at the heart of concerns and decisions, and promotes the overall vision of a business by developing communication between business lines and between project teams.

Thus, three "Business" departments have been created: The Inter-Company Programs Department; the Custom-Made Programs Department; and the Specialised Master® (SM) Programs Department. Their role is to manage day-to-day activity on a product line and to make suggestions to Management regarding the strategy in order to develop it. In addition, four "expert" departments – Marketing, Education & Innovation, Administration & Finance, and Information Systems & Digital - provide support for initiatives undertaken by the Business Unit Departments.

2020 also saw the appointment of Céline Précis as Executive Director. Returning to the School in October 2011 to work on the pedagogical responsibility of the Specialised Master® and the rollout of marketing initiatives,

Céline Précis joined CentraleSupélec Exed in 2014 as pedagogical manager for four Specialised Master® training courses. She initially worked on transversal educational missions and on the deployment of new training courses. In October 2019, she became Director of the SM Programs Business Unit.

Transformations accelerated by the coronavirus crisis

Beyond the impact on the daily activity of continuing education, on its customers and on its students, the pandemic has required the teaching teams to constantly adapt.

Following the example of the School's policy, CentraleSupélec Exed has shown itself keen to maintain the pedagogical continuity of its teaching, by transforming face-to-face sessions and SM courses into remote learning and by training its lecturers in the use of Microsoft Teams. The premises of the Paris training site have also been adapted to accommodate participants while respecting the evolving health protocols.

To maintain pedagogical quality, lecturers were invited to attend two webinar tutorials: the first on educational engineering adapted to distance learning and the operational organisation of courses to facilitate interactivity; the second on the formatting, production and distribution of content.

IN NUMBERS

The CPF (Personal Training Account or "Compte Personnel de Formation") is the mechanism that gives private sector employees access to training. It can be used by any employee, throughout their working life, including during periods of unemployment, to undergo qualifying or certifying training. CPF replaced DIF (individual right to training).

All training courses that qualify for funding are referenced on the MonCompteFormation platform. Since the last quarter of 2020, the platform has allowed participants to evaluate their training. CentraleSupélec Exed obtained a score of 4.9 / 5

CPF platform: 4.9 / 5 (Average grade assigned by trainees)

207 Files / 148 Files in progress / 59 files closed over the year

80 fully remote special lockdown training courses

The teams were also quick to create a fully online catalogue. Within two weeks programs for the five main themes were developed in consultation with the managers of the fields: Information systems & digital technologies; Soft skills, Management & Leadership; Project management; Operational Excellence, Industry 4.0 & Supply chain; and Technologies & Systems, Electronics & Systems Engineering.

80 distance training courses were thus developed during the lockdown. These training courses (from one to seven hours) could be financed under the FNE-Training funding mechanism.

Very positive results for Specialised Masters® enrolment

With 457 students enrolled at the start of the 2020 academic year, the number of students in Specialised Master® education has increased by 133%. This success is the result of increased communication and marketing initiatives, but also of young graduates choosing to delay their entry into the job market by furthering their education.



Multiple in-house training contracts

In 2020, CentraleSupélec Exed won several contracts with large groups, developing specific aspects:

- A contract with Société Générale on Big Data designed for data scientists, to accelerate transformation by mastering data throughout the value chain. The approach was based on hands-on learning with 30% theory and 70% focused exercises and concrete projects. This course offers certification;

- A contract with BPI auto on Project Management, designed for heads of small businesses that are more than three years old. The aim was to accelerate the growth and internationalisation of these small auto companies. Intensely interactive and practice-based, open to the industry of the future, the program has been tailor-made to respond to the specific issues faced by this rapidly changing sector;
- A contract with Alstom on Lean Six Sigma - Operational Excellence, designed for operational managers and technicians and quality managers, with a view to developing, deploying and certifying a Lean Six Sigma Black Belt course. During this training, the existing Green Belt course was reinforced, thanks to Exed's expertise. A Black Belt course focusing on the particularities of the company has been developed and adapted to the context of the pandemic. This global project was designed for all the company's entities (India, United States, Brazil, Europe, Africa);
- A contract with Egis rail, on Soft Skills and Leadership, to encourage, structure and develop the role of Egis Rail experts. Designed for the company's experts and technical specialists, this 24-month course offers certification at the end of the course via group projects on subjects of the company's choosing.

Implementation of the SmartCertificate platform

CentraleSupélec Exed has chosen SmartCertificate for sending certificates and diplomas electronically. This platform, recommended by the CGE through partnership with CVTrust, allows us to meet a growing need to issue official documents (diplomas, transcripts, certificate presence and success...) in a verified, secure manner, while respecting individuals' right to privacy.

SmartCertificate allows the recipient to share their success on social networks and also to share authentic documents directly with recruiters.

617 diplomas and certificates have been issued since the service was created.

SPOTLIGHT ON

EXECUTIVE CERTIFICATE IN ONLINE MANAGEMENT OF COMPLEX PROJECTS

This certificate, launched in 2019, is the first completely remote training course offered by CentraleSupélec Exed. The course is focused on leading complex projects by learning the fundamental processes, methods and reflexes of project management, and attracted 34 participants in 2020.



▼
RESEARCH

3D view of poplar scanned at 0.4 μm resolution with the Pomacle Biotechnology Chair nano tomograph (UltraTom from RX-solutions).

CENTRALESUPÉLEC'S BIOTECHNOLOGY CHAIR: A NEW APPROACH TO BIOECONOMY

The CentraleSupélec Biotechnology Chair, created in 2011, responds to the major challenges of our transitioning societies: reducing our impact and creating value by enhancing agricultural and forestry resources.

Since its creation in Pomacle, the Chair has focused its attention on lignocellulose, a raw material for second-generation biofuels and biobased materials, on biotransformation using microorganisms and on separation techniques, in particular the purification of biogas and syngas.

The French High Council for Evaluation of Research and Higher Education (HCERES), which evaluated the activity of the Chair at the end of 2019, confirmed the originality and relevance of the digital twin concept applied to the bio-economy, an ambitious project with high potential for industrial applications.

Supported by this evaluation, the Chair was renewed in 2020 for a new, seven-year term. It is co-financed by the Department of Marne, Grand Reims, the Grand Est Region and the European Union via FEDER (le "Fonds Européen de Développement Régional European" or Regional Development Fund) for Champagne Ardenne. During this period, the Chair will develop its staff, its patents, its cutting-edge equipment and its industrial partnerships, in conjunction with the other Chairs present at the CEBB (European Center for Biotechnology and Bioeconomics) in Pomacle (15 km from Reims).

The ambitious project, worth €23 million, including €15.3 million from local authorities, will assemble a team of over 35 people on the Pomacle site, with, on average, fifteen scientists (including three professors), six support staff (including a program manager), five post-docs and ten doctoral students. The project also provides for nearly €2M of specialist equipment, experimental tools essential for the digital twin concept: small-scale characterisation (microfluidics, microscopy, nano tomography, analytical chemistry, automated micro-bioreactors, etc.) and validation in our pilot plant (extrusion / reaction, manufacture of bio-based materials, production bioreactors and photobioreactors, separation pilots, etc.).

The Chair, backed by the Process and Materials Engineering Laboratory, ensures a close link between the supervisory establishment (CentraleSupélec) and the economic and academic players in the region, by putting its R&D expertise at the service of innovative projects. CentraleSupélec, with its high-level generalist engineering curriculum, has significant expertise in modelling applied to (bio)process engineering and (bio)materials. In addition to experimental approaches, the Chair's three thematic axes are therefore naturally based on fundamental skills in modelling, simulation & visualisation more particularly oriented towards the modelling of living organisms and the transition to an industrial scale.

“

In any project that we set up, we endeavour to bring together academic, industrial and R&D partners, giving priority to those in the region. Beyond the scientific project, this new contract is also a formidable human adventure with many facets: development, innovation, societal issues, popularisation, civic initiatives and even an Arts and Science project.

”



PATRICK PERRÉ

Professor and holder of the Biotechnology Chair

ARTIFICIAL INTELLIGENCE AT THE HEART OF HEALTH PROJECTS

Launch of the PRISM Centre for Precision Medicine in Oncology with the Gustave Roussy Institute and Inserm

CentraleSupélec, Inserm and Paris-Saclay University have joined forces with the Gustave Roussy Institute (IGR) to create PRISM, the National Centre for Precision Medicine in oncology. The mission of this second-generation precision medical centre is to model cancer on an individual scale by creating digital avatars of tumours. The objective is to identify patients with the most aggressive cancers very early in the disease, without waiting for relapses, in order to offer them the most appropriate treatment from the start of treatment, using the immense volume of available clinical, biological and molecular data and their analysis by artificial intelligence.

Two CentraleSupélec laboratories are involved in this project:

- The MICS laboratory (Mathematics and IT for Complexity and Systems) which has worked on new methods and new reasoning for data processing via algorithms;
- The CVN laboratory (“Centre de Vision Numérique” or Digital Vision Centre), which operates primarily in medical imaging and radiology, notably through the use of deep learning.

ScanCovid IA: Artificial Intelligence for predicting infection severity

For several years, the OPIS project-team (CVN, INRIA, CentraleSupélec) has been working with the Gustave Roussy Institute on issues related to learning and artificial intelligence and their contribution to medical imaging for the diagnosis, prognosis and the follow-up of cancer patients.

The IGR team contacted OPIS at the beginning of March 2020 to launch a collaborative project: working to predict the severity of a Covid-19 attack, using AI analyses of patients’ 3D chest scans.

COVIPREDS project: using Artificial Intelligence in the fight against Covid-19

This project, carried out at the Signals and Systems Laboratory (L2S), in partnership with AP-HP (public hospitals of Paris) and INRIA, focuses on the characterisation and prediction of the occurrence of severe or lethal forms of Covid-19 using data from the AP-HP.

COVONCO project: impact analysis in the Covid-19 context

The Industrial Engineering Laboratory, in partnership with AP-HP, is studying the impact of the Covid-19 pandemic on the care of AP-HP patients with cancer, and their care pathways (screening, diagnosis, treatment).

IN NUMBERS

CENTRALESUPÉLEC RESEARCH IN 2020

- 17 laboratories and research teams, and a Mathematics federation
- Research addressing 9 strategic issues: Aeronautics & Space; Biotechnologies; Cybersecurity; Energy, Transport & New Mobility; Environment & Sustainable Development; Industry of the Future; Networks & Telecommunications; Health & Life; Data Science & Artificial Intelligence
- 18 research and teaching Chairs
- 540 permanent staff (Faculty members, researchers, administrative & technical staff), 500 doctoral and post-doctoral students
- Almost 1,100 A-ranked publications referenced in *Web of Science*

CENTRALESUPÉLEC'S EVOLVING RESEARCH CENTER

New LuMin laboratory, Light Matter and Interfaces Laboratory

The **Light, Matter and Interfaces Laboratory** research unit (FRE2036) was created on the 1st January, 2020 under the tutelage of Paris-Saclay University, ENS Paris-Saclay, CNRS (INSIS) and CentraleSupélec. It has around thirty permanent members. Its research activities focus on the interaction between light and matter on different scales (atoms, materials, devices, living systems) and it has multidisciplinary applications. It offers new and original synergies at the frontiers of optics and quantum physics, device technologies, as well as the in vitro and in vivo exploration of fundamental biological processes for a better understanding of the pathogenesis of cancers and diseases of the brain.

The main activity of this laboratory depends on a wide spectrum of skills in optics (lasers, nonlinear optics, quantum physics, plasmonics), with application developments for the design and development of materials, micro- and nano-photonic devices, microfluidic circuits, and for the study of biochemical phenomena in cells, tissues and living organisms. Its multidisciplinary and multi-scale research program addresses major societal issues such as the processing and storage of information, sustainable development and alternative energy sources, as well as health issues.

SPOTLIGHT ON INAUGURATION OF THE ATOMA PROJECT: ELECTRONIC MICROSCOPE IN TRANSMISSION

The ICMMO, CentraleSupélec, LCP, ENS Paris-Saclay, ISMO and IASOSUPS inaugurated the MET (Electronic Transmission Microscope) which they acquired with support from the *Île de France* region, Paris-Saclay University, Labex CHARMMMAT and LaSIPS and the CNRS.

The ATOMA (Angström Micrometer Analysis and Observations) equipment project consists of the acquisition of a transmission electron microscope (TEM). This instrument will allow imaging from the micrometre scale to the sub-nanometric scale (less than 0.00000001m) and will be used by different scientific communities: chemistry, chemistry-physics, materials science, chemistry-biology, pharmacy- medicine, mechanics, physics, astronomy, etc.

Merger between GeePs and L2E (Sorbonne University)

Following an audit in the field of electronics, it was decided to merge the L2E (Laboratory of Electronics and Electromagnetism) and GeePs.

Since 2017, L2E has functioned vis-à-vis the Sorbonne University as a 4th pole of GeePs. It has since been a matter of preparing for the merger in 2020.

Following approval of the merger project from HCERES, the merger was confirmed by the four supervisory authorities.

On the staffing front, L2E had 24 permanent staff and around 20 doctoral students. GeePs now has close to 200 people, including 120 permanent staff, making it a leader in the field.



RESEARCH HIGHLIGHTS

Jean-Christophe Pesquet, director of the CVN, wins an ANR IA Chair

The *Bridgeable project*, presented by J.C. Pesquet, is one of 40 winners of the 2020 ANR call for projects for "Research and teaching Chairs in Artificial Intelligence". This project offers the mathematical analysis of neural networks and the explainability of the functioning of these black boxes.



The IETR (Institute of Electronics and Telecommunications of Rennes) in the spotlight

Ronan Sauleau, the laboratory director, is one of the twenty-two winners of the 2020 CNRS silver medal. The CNRS silver medal rewards researchers for the originality, quality and importance of work that is nationally and internationally recognised.

Jacques Palicot, professor at IETR, is the 2020 recipient of the CNFRS URSI-France medal. This medal, awarded under the aegis of the Academy of Sciences, honours a scientific figure who has contributed, over at least the past six years, to remarkable advances in the field of radio science.

Christophe Laux (EM2C laboratory) named "Fellow" by AIAA

Each year, the American Institute of Aeronautics and Astronautics (AIAA) recognises individuals for notable and valuable contributions to the arts, sciences and technologies of aeronautics and astronautics by naming "Fellows". In 2020 they honoured Christophe Laux, professor in the EM2C laboratory (Molecular and Macroscopic Energetics, Combustion, CNRS UPR 288). He is the only European faculty member to be honoured this year.

Doctoral student from the EM2C laboratory wins Student Excellence Award

Nicolas Minesi, a doctoral student at the EM2C laboratory (CNRS, CentraleSupélec) was presented the "Student Excellence Award" at the 73rd Gaseous Electronics Conference for his paper "*The Ionization Mechanism of Thermal Sparks*".



Doctor from the GeePs laboratory receives Chancellery award

Simon Meunier, a doctor from the GeePs laboratory (Electrical and electronic engineering of Paris) and assistant professor at the School since the 1st December, 2020, was awarded the Chancellery of Universities prize for his thesis on the development of a methodology of optimal design of photovoltaic water pumping systems for rural communities, combining technical, economic, environmental and societal aspects: application in the village of Gogma in Burkina Faso.

AN ACTIVE CHAIR POLICY



Chair for Safety and Performance in the Construction Industry with OPPBTP, EIFFAGE and VINCI

The Chair for Safety and Performance in the Construction Industry comes out of the findings of a study conducted by the Organisation for Prevention of Occupational Hazards in the Construction Industry (“l’Organisme Professionnel de Prévention du Bâtiment et des Travaux Publics” or OPPBTP) which shows the positive impact of accident prevention on the economic performance of companies. It has three objectives:

- Strengthen the academic base of work on links between safety and performance within companies;
- Offer them an appropriate safety tool;
- Understand the related sociological issues.

The Chair, which was inaugurated in September 2020, is funded by the OPPBTP, EIFFAGE Civil Engineering, VINCI Construction Terrassement.

Creation of the Complex Systems Risks & Resilience Chair

CentraleSupélec, EDF, SNCF, Orange, the EDF-Institut de France-Académie des Sciences Science and Education Program and the CentraleSupélec Foundation established the Complex Systems Risks and Resilience Chair (RRSC or “Risques et Résilience des Systèmes Complexes”) on the 15th December, 2020. Its aim is to advance the modelling of complex systems, the analysis of the risks they face and

the optimisation of their resilience, with the dual objectives of scientific excellence and transferral.

Creation of the Circular Economy Steering Chair

The Chair, launched in February 2020 in partnership with the Paris-Saclay Community, the Louis Bachelier Institute, the SIOM Vallée de Chevreuse and VALE NC, aims to establish circularity indicators to assess the impact of production on the environment. Given the current pressure on resources, geopolitical tensions, increasing population and urban concentration, it seeks to respond to the following challenges: diagnosis, characterisation of projects, production of performance indicators, methods and analytical tools, given new production models and managing the circular economy.

Photonics Chair renewed

The Photonics Chair, established in 2017 on the Metz campus within the LMOPS laboratory, is, to date, the only Chair in France dedicated to photonics, i.e., science and technologies relating to light. It has been renewed for two years thanks to support from GDI Simulation as well as the State, and support from the Grand Est Region, the Moselle department and Metz Métropole.

Armand Peugeot Chair renewed

The Armand Peugeot Chair, which is supported by the Industrial Engineering Laboratory and the Paris Electrical and Electronic Engineering Laboratory, in collaboration with ESSEC, addresses the complex transformation of the automotive industry given the development of electromobility which will lead to a complete disruption of supply and demand. The automotive industry is driven by environmental considerations and increasingly incentive-based public policies, and is at the start of a key shift towards low-carbon mobility. This translates into high targets for the deployment of electric and plug-in hybrid vehicles, as well as the related charging infrastructure.

The Chair, established in 2011, was renewed in 2020 for a second time.

OTHER HIGHLIGHTS

“ Good writing is undeniably one of the sharpest tools in a scientist's toolkit. With the number of scientific publications increasing every year, mediocre writing can hold a brilliant idea hostage - with the idea sometimes never finding an audience and years of work being laid to waste in the process. When written well and written in an engaging style, the same idea will find a broad audience and have a real impact.

”

▼
DIVYA MADHAVAN
Coordinator
Academic Writing
Center

The Academic Writing Center: first anniversary

The Academic Writing Center (AWC) is a department of the Research Department that provides a service to all doctoral students and researchers from CentraleSupélec laboratories. The AWC helps scientists become better writers, developing their English language science writing skills so they can write better papers without relying on external language support. This in-depth work, based on in-house editorial expertise, starts in the first year of a doctorate through training in academic and scientific English.

The AWC has just celebrated its first anniversary, with 350 hours of one-on-one counselling, 30 hours of workshops and 45 hours of summer and winter schools within the EUGLOH network.



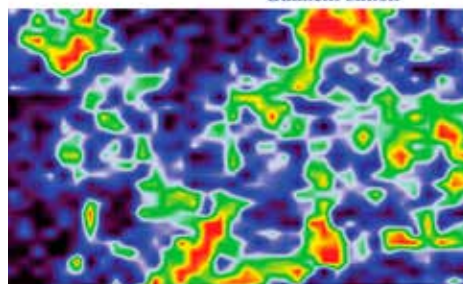
Spectroscopies vibrationnelles

Théorie, aspects pratiques et applications

Œuvrage collectif
du Groupe Français de Spectroscopie Vibratoire (GFSV)

Coédité par

Guilhem Simon



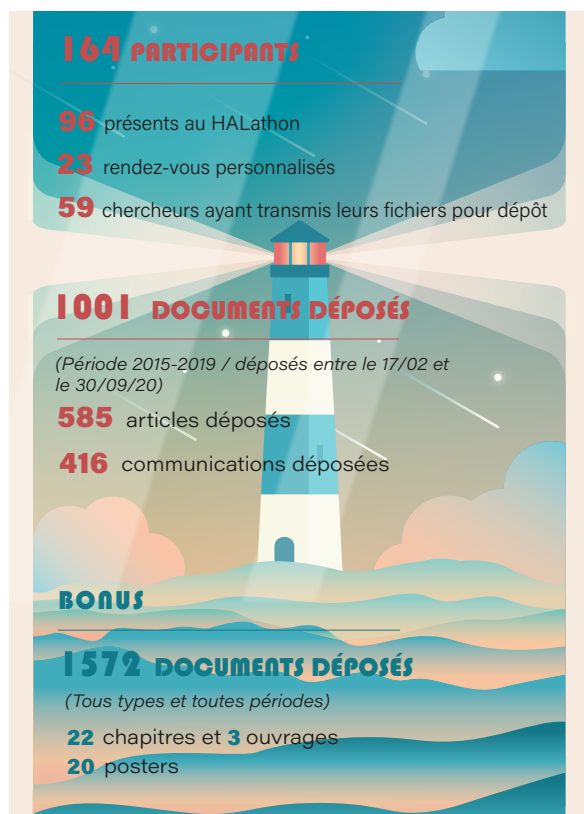
éditions des archives contemporaines &c

Ninel Kokanyan co-author of a chapter of a book on spectroscopy

Ninel Kokanyan, a faculty member on the Metz campus, has co-written a chapter of a book on spectroscopy, produced to celebrate the 20th anniversary of the French Vibrational Spectroscopy Group (“Groupe Français de Spectroscopie Vibrationnelles” or GFSV). A team from the Optical Materials, Photonics and Systems Laboratory (LMOPS) has been a member of the GFSV for many years, and has twice organised GFSV themed days.

Open science central to CentraleSupélec: 1st HALathon

In 2020, for the first time, CentraleSupélec invited submissions of full-text scientific publications to the HAL portal. Between the 17th February and the 30th September, 164 participants submitted 1,001 files (articles and communications, 2015-2019) and 1,572 bonus documents as part of the HALathon. The three criteria selected for judging – the number of participants, the number of files submitted to HAL and the number of files made freely available via the portal – focused attention on the L2S, LGI and MSSMAT laboratories.



C³: a cybersecurity skills centre at the heart of the Rennes campus

The institutions of Rennes (CentraleSupélec, University of Rennes 1, University of Rennes 2, ENSAI, ENS Rennes, INSA Rennes, Sciences-Po Rennes and IMT Atlantique) together with major research organisations (Inria and CNRS) and the Brittany Region have created C³ (C-Cubed), an inter-establishment tool whose mission will be to strengthen training, research and innovation in cybersecurity. This project involves a large multidisciplinary community (computer scientists, mathematicians, electronics engineers, lawyers, geopoliticians, sociologists, etc.) and aims to become an internationally recognised skills centre, thus contributing to the promotion of Brittany's skills and know-how in cybersecurity on an international level.



**BUSINESSES &
ENTREPRENEURSHIP**



AN IMPORTANT YEAR FOR CREATING AND RENEWING TRANSVERSE PARTNERSHIPS

Inauguration of the Chair for Safety and Performance in the Construction Industry

The Chair, which was inaugurated in September, is jointly financed by the OPPBTP, CentraleSupélec, Eiffage Génie Civil, Vinci Construction Terrassement and the CentraleSupélec Foundation. It has two objectives: to better understand the connections between safety and performance; and to promote a positive approach to safety in construction companies using a combination of Engineering Science and Human Sciences.

Metz campus and Pomacle site: two successes for the Chairs

The Research cluster in the Department of Corporate Development, along with the Research Department, has achieved two great successes with the renewal of teaching and research Chairs: a two-year renewal of GDI Simulation's support for the Metz campus Photonics Chair along with support from the State, the Grand Est Region, the Moselle department and Metz Métropole; and a seven-year renewal of the Biotechnology Chair at Pomacle with support from the State, the Grand Est region, the Department of Marne and Grand Reims. These projects also benefit from ERDF grants (see Research section).

Establishment of the Complex Systems Risks & Resilience Chair

In December, CentraleSupélec, EDF, SNCF, Orange, the Science and Education Program of the EDF-Institut de France-Académie des Sciences, and the CentraleSupélec Foundation established the Complex Systems Risks & Resilience Chair.

The Chair's goal is to use research to advance the discipline of modelling complex systems, analysing the risks they face and optimising their resilience, with the dual objective of scientific excellence and transferral. The challenge for those associated with the Chair in the future will be to design, maintain and operate reliable industrial systems capable of withstanding the internal and external risks these systems will face, in all circumstances.

Esa_Lab@centralsupelec

In February, CentraleSupélec partnered with the European Space Agency to launch ESA_Lab@CentraleSupélec. The goal is to develop interest in and understanding of peaceful space exploration and the resulting transversal applications, such as climate monitoring, observation of the Earth, security, sustainability, risk management, space economics ...

Within this framework, different teaching and research teams will organise visits, conferences and innovative themed training sessions.

4 CHAIRS
1 ESA_LAB

THE SCHOOL'S CONTRIBUTION TO COVID-19 CRISIS MANAGEMENT: OPERATION 3D4CARE

3D4Care is a collaborative project that was responsible for the manufacture and distribution of 17,500 protective visors between March and May 2020, during the peak of the Covid-19 health crisis. The project, which was designed and managed by "La Fabrique", CentraleSupélec's fab lab, received support from the CentraleSupélec Foundation and a donation from the Bouygues company, allowing it to buy the necessary supplies to start production of visors without delay.

The 3D4Care consortium was created to deliver protective equipment to caregivers in Paris hospitals and health workers in the inner suburbs of Paris during the pandemic. It brought together people from the following establishments and organisations: URB2i Laboratory (UR 4462)

from the Universities of Paris and Sorbonne Paris Nord, iLumens Paris Diderot Simulation Centre, PARCC Inserm, CentraleSupélec, Paris-Saclay University.

The first samples arrived at Georges-Pompidou Hospital, where caregivers validated the design. Manufacturing was then launched with the help of numerous fab labs, academic establishments, 80 "makers" and individuals in Île-de-France, supplying an assembly line located in Paris. When lockdown began, La Fabrique's 3D printers were transferred to the students' residence for the manufacture of visors.

On the 30th March, 300 visors per day were produced. Over the duration of the project, over 300 hospital services and care centres were supplied.



FOCUS

CENTRALESUPÉLEC RECOGNISED FOR THE PROFESSIONAL VALUE OF ITS TEACHING

Important recognition of the professional value of the School's teaching, as indicated by the 2020 international employability rankings:

- In the QS ranking, CentraleSupélec was ranked 7th worldwide in terms of employer reputation (top French establishment)
- In the Time Higher Education 2020 Employability ranking: CentraleSupélec showed marked progress, ranking 22nd worldwide (+ 22 places), top French establishment ahead of HEC and École Polytechnique

ALSO IN 2020

An expanding network of partner companies

Despite the exceptionally challenging current circumstances, notably the reform of the apprenticeship tax and the coronavirus pandemic, partner loyalty and the School's reputation remain as strong as ever.

New companies have joined the CentraleSupélec partnership program: IBM, LINKABAND, OCYO CONSULTING, ODDO BHF, ORPHOZ, POLYCONSEIL, QUBE RESEARCH & TECHNOLOGIES (QRT), PROCTER & GAMBLE, TECHNIP FMC, and VALEO. The School thus has nearly 140 partner companies of various sizes and representing a variety of sectors.

There is also an increasing wealth of opportunities available to our partners. In fact, the CentraleSupélec curriculum makes it possible to connect business partners with new teaching units in the 1st and 2nd years: the Project Clusters. With this new form of networking, we were able to welcome around twenty new partner companies to work with the students in project mode.

Essential adaptation of student-business relations

Company events were maintained throughout the curriculum. Partners' Day, Round Tables, the Mini-Cyber Forum in Rennes, Metz Campus Business Day and Business Discovery Evenings, were therefore adapted, being face-to-face, hybrid or remote, depending on health restrictions.

The Business Forum, the flagship event of the year organised by the students in November, was fully virtual.

With students and companies in attendance, 5,000 interviews were held, allowing CentraleSupélec students and alumni to meet remotely with recruiters and submit applications for the 2,196 available positions with nearly 160 companies. In addition, students were able to finetune their professional projects and interact informally with professionals via nearly 390 live-streamed events and conferences.

140 PARTNER COMPANIES, AMONG THEM **35** SME / START-UPS



SPOTLIGHT ON

SEBASTIENNE GUYOT SCHOLARSHIPS: COMPANIES COMMITTING TO GENDER PARITY

Thanks to support from partner companies, the School, through its Foundation, awards scholarships specifically to young women. The Sébastienne Guyot scholarships are named in honour of one of the very first female students to attend l'École Centrale, a woman who went on to have an exceptional career. The selection is made on two criteria: the candidate's means (after any other scholarships have been taken into account) and their motivation. This year, three scholarships were awarded: two by Eurofins and one by Sopra Steria. These scholarships each represent the sum of €8,000 annually, renewed over the duration of the studies, which is three years. The scholarships were awarded by videoconference on the 17th December.

ENTREPRENEURSHIP: INNOVATIVE START-UPS

Responding to the challenges raised by the pandemic, CentraleSupélec provides support for five data / AI start-ups

Working alongside its incubation program, CentraleSupélec, which is seeking a position of strength in the search for concrete solutions to problems arising from the pandemic, has chosen to support five start-ups and scale-ups that have developed solutions using data science or artificial intelligence during the coronavirus pandemic:

- **Arcascience:** structuring medical and pharmaceutical R&D data;
- **Navee:** a tool for combatting internet image fraud;
- **Hajime AI:** facilitating medical compliance through social psychology and artificial intelligence;
- **Solinum:** an association supporting the vulnerable;
- **Evalmee:** a remote examination platform that is simple, secure and educational.

CentraleSupélec start-ups on the frontline

2020 has been a successful year for start-ups founded by CentraleSupélec alumni.

Great fundraising:

- **InnovaFeed**, co-founded by Bastien Oggeri (CS 2011) and Clément Ray (CS 2011), raised €140 million;
- **Dataiku**, co-founded by Clément Sténac (CS 2005), raised \$100 million;
- **Yubo**, co-founded by Sacha Lazimi (CS 2016) and Arthur Patora (CS 2016), raised €40 million;
- **Preligens**, co-founded by Arnaud Guérin and Renaud Allieux (CS 2008), raised €20 million;
- **Workera**, co-founded by Kian Katanforoosh (CS), raised \$5 million.

Daan Technologies, co-founded by Damian Py, has delivered its first **BOB**: an ultra-compact, fast, water-efficient mini-dishwasher made in France.

Greenly wins 2020 Fintech of the Year award

In partnership with Google Cloud and the Fintech Chair of Paris Dauphine University, the global competitiveness cluster FINANCE INNOVATION awarded the “2020 Fintech of the Year” award to Greenly, a start-up co-founded by Arnaud Delubac, graduate of the Entrepreneurs SM coordinated with ESSEC.

Two start-ups co-founded by graduates of the School cited in Challenges magazine

Two start-ups from the School claimed spots in the Challenges ranking of the 100 best start-ups in which to invest in 2020: **Logora** (debate plugin); and **Buster AI** (an algorithm that can identify fake news in videos, photos and text).

Next 40 and FT 120

Start-ups founded by alumni of the School are taking their place in the Next 40 and FT 120 index, which look at the most innovative start-ups in French Tech. In 2020 Evanéos (Next 40), Heetch and Tissium (FT 120) entered the rankings.

CentraleSupélec, the School of Student Entrepreneurship

- The **Hopia** team of engineering students from the School won the AI for Tomorrow Innovation Challenge. Hopia’s goal is to optimise resource management in hospital departments. By using artificial intelligence to predict hospital flows and patient load on a case-by-case basis, Hopia’s solution offers a real-time response tailored to requirements, particularly for staff schedules.

- Award for Engineering of the Future: **EpiLAB**, People's Choice Award. The EpiLAB project, led by Clément Dubois, an engineer from the School, won the People's Choice Award in Syntec's Engineering of the Future Prize. Every year this award recognises projects that have produced scientific and technological solutions to the challenges of tomorrow. The 2020 theme was #Tech for Good: "Using new technologies to design a more sustainable world!"



- **CAPS ME**: the first French-made ecological coffee capsule recharger. The Capsulette, a reusable coffee capsule reloader, was developed by Thibaut Louvet from Arts et Métiers and Jean de Boisredon, an engineer from CentraleSupélec. After a Ulule crowdfunding campaign that exceeded its target by nearly 3,000%, 450 capsules were delivered before Christmas 2020 and 1,500 more will be delivered before April 2021.
- **Spark**: a start-up founded by a distinguished doctor of the School. Erwan Pannier, CentraleSupélec doctor (EM2C) and engineer, recently founded Spark: a start-up which offers plasma technology for the production of industrial gases from CO₂ and CH₄. This promising young start-up has received support from SATT.

CentraleSupélec, innovation hub

The School has hosted multiple innovation events: the BPI deeptech Tour (6th February); the French Tech Paris Saclay back-to-school event (13th October); and the Learning Expedition organised by EPAPS and French Tech with a delegation of 60 VCs and investment funds (30th September).

The Entrepreneurship team, in partnership with the student entrepreneurship association **Genius** has been working to develop the entrepreneurial mindset of students, researchers, teachers and staff at the School: "Pitch & Burger" events give student- and alumni- entrepreneurs at the School an opportunity to share their experiences. The first event was held online in November with 65 participants and three entrepreneurs: Teddy Pellerin, founder of **Heetch**, and David Atlan and Thibaut Arnould, co-founders of **ROB**.

With this in mind, the Entrepreneurship Department has created "Le Repaire"; a new entrepreneurship zone in the Bouygues building on the Paris-Saclay campus. It will be a place where leaders of mature projects, expertise and various activities can come together; an inspirational space, offering open access resources, exhibitions and events. Le Repaire is designed to become indispensable to all those interested in entrepreneurship. The inauguration is scheduled for 2021.



SPOTLIGHT ON

THE NEW YVON GATTAZ PRIZE: "START C'EST BIEN, UP C'EST MIEUX!"

On the 14th February, 2020, the first "YVON GATTAZ - Start c'est bien, Up c'est better" (Starting is good; Up is better) award ceremony was held, aimed at recognising companies that champion new job creation, an important theme for Yvon Gattaz.

At the end of the School's Start-up Week, the jury, consisting of Elizabeth Ducottet (CEO of Thuasne), Philippe d'Ornano (CEO of Sisley) and Frédéric Coirier (CEO of Poujoulat), faced with nearly forty submissions for this first event, chose to reward Coriolis Composites, a company that develops, produces and commercialises robotics for the manufacture of composite materials in aeronautics, for its efforts to expand and to create jobs. The winning company benefits from an endowment of €10,000 and from the support of entrepreneurs with experience in the creation of Mid-Size Companies and METI and AJE networks.

EUROPEAN
UNIVERSITY
ALLIANCE
FOR GLOBAL
HEALTH

EUGLOH
ONE OF THE FIRST
EUROPEAN SUPER-CAMPUSES

University of Paris-Saclay France
LMU Munich Germany
Lund University Sweden
University of Porto Portugal
University of Szeged Hungary

Training the next
generations
of European citizens.

EFMD EQUIS ACCREDITED
AACSB ACCREDITED
AMBA ACCREDITED
SCTU

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SCTU

UNIVERSITY OF SZEGED



▼
INTERNATIONAL

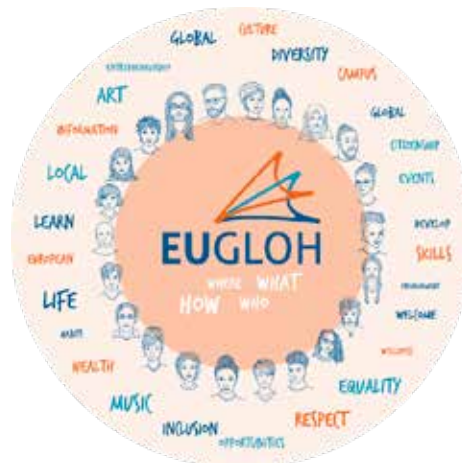


EUGLOH, A EUROPEAN UNIVERSITY FOR GLOBAL HEALTH

Winner of the first call for projects from European Universities in 2019, Paris-Saclay University, of which CentraleSupélec is a founding member, participated in the launch of the Alliance's activities at the University of Szeged, a Hungarian partner, in January 2020. Paris-Saclay University, with its other partners - Lund University in Sweden, the Ludwig Maximilian University of Munich (LMU) in Germany and the University of Porto in Portugal - is developing a variety of projects and initiatives for "global health". These projects respond to current societal health issues such as medicine of the future and digital technology, and technology for health and well-being.

With the pandemic dominating 2020, most of EUGLOH's activities were held online. Students from our five partner universities were thus able to follow classes remotely. Within this structure, CentraleSupélec, via the Academic Writing Center, joined with LMU to organise a summer school focused on "Writing Global Health". The Alliance's doctoral students, post-docs and faculty members participated in a "Large-Scale Facilities for Global Health" summer school, organised by Paris-Saclay University.

In November, the fully online Alliance Day, organised by Lund University, brought together the academic communities of the five partner institutions to discuss "different facets of global health." The event included conferences on key themes of the European University, as well as remote festive events, such as quizzes, a photo competition and a concert.



“ The EUGLOH alliance is the prototype of what a university of the future might be, spread over several European campuses. Its goal is to educate future generations of innovators and experts, practitioners and leaders, all working for the benefit of society and ready to meet the interdisciplinary challenges of global health. ”

▼
MARC ZOLVER
 Director of
 International
 Relations

IN NUMBERS

CENTRALESUPÉLEC, AN INTERNATIONAL “GRANDE ECOLE”

- 200 foreign partner universities in over 45 countries
- 80 double degree agreements worldwide
- 2 Schools in China and Morocco
- 1 4-year undergraduate Bachelor program in India
- 4 associated international laboratories (China, Brazil, Singapore, Canada)
- 30% international students and 20% international professors on our 3 campuses
- A network of 45,000 active alumni in 40 countries around the world

ALSO IN 2020...

Managing the coronavirus crisis for mobile students

From the start of the pandemic, the International Relations Department (DRI) provided support for students studying abroad. Students heading for those countries that were the first to be affected were found other destinations. Then, in March, the DRI carried out a comprehensive survey of the different situations affecting students abroad. Approximately 560 foreign-based students in academic mobility, internship or gap years were in need of support, two thirds of them being outside Europe. Most were following their courses remotely, but as the pandemic unfolded, some had to be repatriated.

At the same time, when the first lockdown was declared there were over 500 international students on CentraleSupélec's three sites, in Gif, Rennes and Metz. The DRI, working with the Office of the Dean, provided special support, helping 200 of them to return to their countries of origin, organising distance learning courses in different time zones, coordinating with psychologists from the School and the residences to provide psychological support, and maintaining regular communication via software provided by CentraleSupélec.

Visit of the Kenyan Minister of Foreign Affairs

On the 2nd October, 2020, as part of the Kenyan President's visit to France, the Kenyan Minister of Foreign Affairs, Ms. Raychelle Omamo, accompanied by the French Ambassador to Kenya, Ms. Aline Kuster-Ménager, visited CentraleSupélec at Paris-Saclay University. Their visit focused on renewable energies (geothermal energy in particular) and the link between education, research and business. This link lies at the heart of a joint project between CentraleSupélec and the University of Nairobi as part of the design and construction of a Science and Engineering Complex in the Kenyan capital.

Technological training is also a major centre of interest and a strong area of cooperation between Paris-Saclay University, in particular Cachan IUT, and several Kenyan universities, including the Technological University of Mombasa and the Technological University of Kenya in Nairobi.





Graduation ceremonies in Centrale Schools abroad

In January 2020, 53 students graduated at Centrale Casablanca's second ever graduation ceremony. In February, 90 students were awarded their engineering degrees at the ninth Centrale Beijing graduation ceremony. They thus join the hundreds of graduates of Écoles Centrale abroad, and join the great family of Centrale alumni.

Eiffel scholarships: CentraleSupélec ranked 2nd in number of scholarships awarded

This year the School, typically coming 1st or 2nd each year in terms of the number of Eiffel Excellence scholarships awarded, again obtained 16 scholarships for its international students taking double degrees. This places it in second position among French establishments and reinforces the position occupied by the group of Centrale Schools in this program. Unfortunately, the Covid crisis prevented the Chilean, Brazilian and Chinese winners from taking up their places, but Campus France did everything possible to provide the best possible support for mobility and we hope this will just be a postponement.

CESAR launches Best Idea 2021 competition

The Best Idea 2021 competition was launched in October by CESAER and CentraleSupélec, acting as chairman of the competition and representative of Paris-Saclay University on the CESAER Board of Directors. This competition is open to students from the 56 universities that are members of the network who wish to submit an innovative and original contribution in response to the major challenges of sustainable development. The award will be presented to the best ideas at the next CESAER General Assembly in October 2021, at Lund University (Sweden).



Visit to the University of Sheffield (United Kingdom)

To strengthen relations with the United Kingdom and to increase mobility options for students, representatives of CentraleSupélec visited the University of Sheffield in February 2020. The partnership agreement is currently being finalised, and will allow for student exchanges between the two establishments, both of whom are members of the CESAER network.



**THE SCHOOL,
ITS TEAMS,
ITS STUDENTS**



SOCIAL DIVERSITY: A NEW GOAL, NEW OBJECTIVES

In accordance with the strategic axes defined in the Annual Performance Project (PAP), CentraleSupélec has decided to pursue an ambitious policy of social openness (see PAP section) because we believe firmly that diversity is an asset for our students and for companies.

With the appointment of an Adviser for Social Openness in December 2019, the School affirmed its positioning by including social and gender openness as a strategic axis in its 2020-2024 five-year contract.

The governance of the School is committed to a 5-year action plan, voted by the Board of Directors in October 2020:

- Recruitment objectives from university applications increased to 110;
- The gradual expansion to 50 recruits from biology preparatory classes;
- Work with GEC member schools on the CPGE admission process, which should also be carried out by 2023;
- 5-year objectives for the engineering cycle: an increase in the proportion of bursary holders from 17 to 23%, an 8-point decrease in the proportion of the highest socio-professional categories (from 66 to 58%) and greater regional diversification (reduction in the proportion of students from the Paris / Versailles educational district from 35% to 28%);
- The creation of a permanent diversity committee.

Finally, the CentraleSupélec Foundation identified social openness as one of the major axes of its fundraising campaign.

In parallel to this structuring, several measures were enacted in 2020:

- Diversification of profiles by recruiting students from agricultural / veterinary preparatory classes;
- The implementation of stronger, focused marketing of the university application procedure, resulting in a significant increase in the number of students with 3-year university degrees or DUT / ATS;
- Support from the CentraleSupélec Foundation for students in need, through bursaries (€362,000 for 173 students), loans, or by acting as guarantor;
- Extra support for the student associations involved (OSER, Espérance en béton);
- An in-depth study of the last 5 years of the Centrale-Supélec admissions procedure, showing the success rates of bursary holders and female students to be comparable to those of the general student population.

In 2021, the School will roll out its social openness policy according to 3 axes: upstream with orientation activities in high schools to combat self-censorship; recruitment; and inclusion through support for less advantaged students.

SPOTLIGHT ON

SUCCESS FOR CAP PRÉPA, THE CENTRALESUPÉLEC AND ESSEC SUMMER SCHOOL

CAP PRÉPA, the summer school which for the first time was organised by ESSEC and CentraleSupélec, took place remotely from the 24th – 28th August, 2020. This allowed nearly 90 high school graduates with bursaries - including 31 scientists – to spend a week getting ready to start preparatory classes.

The program, created by ESSEC in 2009, was carried out this year in partnership with CentraleSupélec. It is specifically aimed at students from less privileged backgrounds, those who have doubts about their ability to succeed and who this year, have been harder hit than others by the Covid pandemic.

The training program included classes taught by CPGE teachers, workshops supervised by 19 student tutors, and lectures given by teachers from both schools. The high school graduates were thus able to understand the role of the engineer in society, the various careers available, and the relevance of sustainable development.

GENDER PARITY: A STRATEGIC PRIORITY FOR CENTRALESUPÉLEC

Gender parity is a strategic priority for CentraleSupélec. In 2020, initiatives that have been ongoing for several years were intensified, and several new projects were launched.

Gender parity initiatives for the men and women educated at the School

The School continued to focus on the promotion of engineering studies to young women. The *Lycées project*, run by the Çapèse association and supported by the School, has encouraged around 500 high school students of both sexes to pursue scientific careers, by questioning gender stereotypes in a light-hearted way.

Thanks to its business partnerships and the CentraleSupélec Foundation, the School was also able to award three Sébastienne Guyot scholarships (see business section).

Next, systematically educating students about gender parity. During the first week of the 2020 school year, an information conference focused on gender equality and the fight against sexism served to raise awareness of these issues among all first-year engineering students, i.e., over 900 people.

Third, educating in the fight against sexual and gender-based violence, harassment and discrimination. In early 2020, an internal communication campaign: "CentraleSupélec says NO to sexism", denouncing "ordinary sexism" and pointing to "common, everyday expressions", launched a global system to combat sexist and sexual violence, proposing various training sessions.

Finally, acting through transparency and setting an example. Progress on gender equality requires greater transparency from CentraleSupélec. To this end, the School annually produces and publishes gender statistics relating to students, particularly on the composition of association committees.

In the same way, the School's desire to set an example in terms of gender equality constitutes a fundamental lever for action in its approach to equity. Which is why CentraleSupélec is working - at all levels - on achieving parity in its bodies.

Parity in the representative bodies of CentraleSupélec has been achieved for:

- The Board of Directors, renewed in October 2019 with the appointment of a President and the election of a Vice-President;
- The Scientific Council;
- The Council limited to elected representatives from among faculty members and staff with equivalent status.

Gender parity initiatives for School staff

CentraleSupélec takes gender parity and communication without gender stereotypes seriously in its initiatives to promote scientific and technical careers.

On the 8th March, 2020, the School with two female faculty members from the Metz campus produced a film to celebrate International Women's Rights Day. The film was produced in association with the Femmes et Sciences Association and the department of the Moselle, with the goal of promoting scientific careers to women.

Through its Department of Corporate Development, the School organises and participates in numerous events aimed at breaking down gender stereotypes that work against young women interested in pursuing engineering careers; events such as "DALKIA Women energy in transition", "ATOS Digital Women Conference" and "Gender parity among engineers", the latter being an event organised on the 8th March.

A DISABILITY ROADMAP

Since its creation in 2015, CentraleSupélec has been actively working to improve disability awareness. In 2020, the School drew up its first Disability Roadmap (SDH or “Schéma Directeur Handicap”), developed by 40 pilots, experts and actors from various departments, students and institutional bodies with experience in disability, approved by the Technical Committee, the Academic Council, and the Board of Directors. It was then presented to the establishment’s three Health and Safety in the Workplace committees (CHSCT or “comités d’hygiène, de sécurité et des conditions de travail”) before being sent to the French Ministry of National Education and Youth and Sports, and to the French Ministry of Higher Education, Research and Innovation.

The SDH is a multi-year action plan covering all areas related to disability. It covers the period 2020-2025 and deals with a variety of aspects that concern students and staff. It offers considered answers to various questions concerning inclusion solutions, accessibility to the School’s buildings, but also educational tools and computer equipment.

Despite the pandemic, concrete measures were also put in place in 2020 and form part of the SDH action plan. These include:

- Tutoring for young people with disabilities. In 2014, the School’s Disability Mission created a tutoring program for young people with disabilities. Thus, 26 CentraleSupélec students provide tutoring to middle school, high school and university students (BAC + 1, BAC + 2) either one-on-one (in partnership with Sopra Steria) or in groups, getting involved whenever obstacles arise, to allow young people to project themselves towards a professional project that reflects their interests. It is also about preparing engineering students, managers of the future, for diversity issues.
- An information and awareness campaign aimed at staff during the disability employment week: sharing awareness-raising information with managers and agents.

- Integration of information on support for students and staff with disabilities on a dedicated page of the Paris-Saclay University website.
- The provision of a specially conceived accessible exam room: installation of computer hardware equipment for engineering students with specific needs, for the entire duration of their studies.



Le handicap à CentraleSupélec?
TOUS concernés...

En 2020, **30 agents** sont déclarés et accompagnés par des professionnels engagés,
et Vous ?

LE HANDICAP TOUS CONCERNÉS

MAJOR ADVANCES ON SUSTAINABLE DEVELOPMENT

CentraleSupélec is equally committed to sustainable development, naming it as a strategic axis in its five-year plan and in its annual performance plan.

The action plan linked to the transversal “Développement_Durable@cs” initiative continued with the structuring and implementation of measures both for core functions and for the campuses.

Dedicated school structuring

With the appointment of Pascal da Costa, a School faculty member, as Adviser for Sustainable Development, Energy, Ecological and Social Transitions, the School is ready to act in all areas: education, research, campus, stakeholders.

The Sustainable Development Committee, with members from management, staff, advisers, campuses and students, was set up to establish the framework for sustainable development at CentraleSupélec (DD&RS charter, School's carbon footprint, DD&RS label, etc.).

The Sustainable Development representatives in the School's laboratories map research in the field and assess research teams' carbon impact.

The School's academic bodies have also created the Academic Commission on Ecological Transition.

The **Focus Group for Integrating Ecological Transition into the Curriculum** (“Groupe de Réflexion pour l'Intégration de la Transition Écologique dans le Coursus” or GRITEC) has been created by students. Its objective is to promote mutual aid, communicating and suggesting projects to the Adviser and School management. “**Ecological transition student delegates**” have been appointed for each class, and are responsible for submitting half-yearly reports on the new curriculum.

The Metz campus has taken on a leading role, with the Transitions Workshop.

Concrete measures

On the teaching front, CentraleSupélec has developed training sessions that address the challenges of sustainable development and energy and ecological transitions:

- For all its students in the engineering cycle (950 students per class): around forty hours of joint training with Fresque du climat, the 2-ton workshop, a course in Climate Sciences given by the Intergovernmental

Panel on Climate Change, the Management course on CSR, Environmental Economics course, Corporate Finance course on carbon accounting, etc.;

- Eight sustainable development project clusters: Biotechnologies and health; Cityfaber lab; Data Sciences; Environmental engineering; Economic, agile and responsible changes; Smart and secure life; Tech for Good; Ecological and inclusive transition;
- The curriculum already allows 30% of students to devote more than half the volume of their curriculum to Sustainable Development courses.
- Work is ongoing, involving alumni and School together and supported by a research office, to ensure that these issues are also included in the specialties in the final year (Concentrations and options).

CentraleSupélec is also offering courses on climate-related subjects for all its doctoral students and staff.

Project support: in 2020, the call for projects for courses and educational projects that reflect the UN's Sustainable Development Goals and Ecological, Energy and Social Transitions, financed by a dedicated fund from the CentraleSupélec Foundation, provided support for ten very different projects: four relating to the establishment of new courses; one transformation project; one on the follow-up to the conferences of the UN Climate parties; and four associative projects (conferences, training, associative charter, etc.).

In terms of research, a vast program involving all laboratories has been launched, aiming to map the School's research with regard to the UN Sustainable Development Goals, to assess the carbon footprint of each of the laboratories, participate in the waste plan, etc.



STAFF ON ALL FRONTS

Department of Heritage and Property Management ("Direction du Patrimoine Immobilier et de l'Environnement de Travail" or DPIET)

The DPIET's activities, which are usually determined by campus life, have been particularly impacted by the lockdowns and reopenings.



Despite this, projects have continued to emerge. The BREGUET building restructuring project has reached an important stage with the finalisation of the program and the confirmation this will be the Presidential seat of Paris-Saclay University. The University is thus located at the heart of our campus.

The environmental policy, which goes back several years, has also seen progress, with the creation of a body dedicated to sustainable development for the entire School, a carbon impact assessment and a waste diagnosis, and receipt of a gold medal at CUBE 2020, an inter-school challenge that rewards energy savings.

Next, DPIET was able to continue optimising management of all financial, operational and strategic elements with the integration of asset data in the ministerial reference system (third out of 124 in data classification), a participatory process for the creation of the annual works program, the reliability of all data related to buildings by setting up a large campaign during the summer with nine students, setting up weekly indicators and deploying the maintenance management tool elsewhere (audiovisual, exterior).

Finally, the issue of safety was addressed with the deployment of an ambitious action plan (€180K) aimed at strengthening our system. It successfully led to a PPMS (special security plan).

Finance Department / Accounting Agency

Financial activity and processes, like all services, have been impacted by the Covid crisis, in terms of both expenditure and revenue.

Closing the 2019 accounts was made much more difficult due to the strict lockdown from March to May, but also the high personnel turnover in financial services management. With the positions of Director and Deputy to the Finance Department remaining vacant during the first part of the year, it was not possible to continue the projects launched in 2020. The successive lockdowns contributed to the pattern of dematerialisation of the supporting documents relating to expenditure and revenue, but did not allow the necessary adjustments to be completed. These adjustments will have to be continued in 2021.

The physical inventory of goods scheduled for the summer of 2020 had to be postponed to 2021.

The reorganisation of the Administrative and Financial department (DAF) was begun at the end of 2020, with the aim of improving the efficiency and responsiveness of the financial function as well as real steering of budget execution. Once the vacant positions have been filled, projects to modernise tools and processes will be relaunched.

The 2020 financial year should break even but it should remain in the multi-year trajectory envisaged within the framework of the Strategic and Management Dialogue.

Documentation

2020 saw two major cultural events: Reading Night in January, focusing on dystopia and the writer Pierre Boule; and the centenary of the birth of Boris Vian in November. This event took place face-to-face and online. Reading groups continued with their regular meetings, comprising lectures, interviews, book selections, guestbook and exhibitions. In view of the pandemic, the library has also renewed its training proposals, with online seminars for doctoral students (April-June 2020), and FocusBib meetings (October 2020) offering online resources. In September 2020 the Metz library completed redevelopment of the reading room: a press room with a newspaper stand, armchairs and lockers.



Between February and September 2020, the IST research pole hosted the 1st CentraleSupélec HALathon, an operation aimed at researchers, intended to increase the number of full-text publications deposited in Hal, the School's open archives platform to promote *green open access*: 164 participants and 1,572 publications filed - a collective success that highlights the open access commitment of the L2S, LGI and MssMat laboratories as well as the Rennes CIDRE team on the HAL-CS portal website.

A major collection treatment project, co-funded by Abes, was completed in February 2020 with 1,190 old documents processed. The project was seriously impacted by the lockdown, and will resume in 2021.

Finally, in November 2020, *Alma*, a new generation library management solution: the *SGBm project*, which has kept the documentation team busy since 2019 in various working groups, was rolled out in seven establishments. The project continues, however, completing the transfer of data and refining the settings, and already allows users to borrow easily from all the project libraries and access a unified reader account via *Focus*. This project is in anticipation of the opening of *Lumen*, the Paris-Saclay University learning centre, construction of which began in June 2020.

Archiving

The Archives department, which has been independent of Documentation since the 1st December, 2020, continued to implement the archiving policy in the School in order to provide solid foundations for the future *ArchiGed* system. In addition to the work of processing archives in the directorates, carried out with the support of concerned parties, processing of the Supélec collection continued before its transferral to the National Archives. Once layout of the second archive shop had been finalised, the transfer of archives from the Breguet building to the Eiffel building could begin. Regarding the museum collections, five 19th century marble busts have been restored. And regarding the *Omeka S* project developed by Paris-Saclay, the Archives department is involved in sharing information to this heritage enhancement tool and is actively participating in its implementation.



Digital Institute and Information Systems (DISI)

The DISI teams were much in demand during the lockdowns, providing intensive support for teachers right from the start, and then throughout the year, as well as for administrative staff.

2020 was also used to build the *MySchool* web portal, through which teachers can find all the useful information for their lessons on a single page.

The satisfaction surveys carried out at the end of 2020 produced very high scores: 85% of education managers across the three campuses, 88% of teachers in charge of a course, 90% of external teachers and contributors, and 82% of students said they were satisfied or very satisfied with the tools made available to them.

Despite the difficulties linked to the pandemic, companies continued to call on the DISI for prototyping services, so that the turnover of this activity in 2020 stood at €1.2 million, i.e., an increase of +30 %.

Human Resources Department

The Human Resources Department, like all departments, was heavily impacted by the Covid crisis in 2020, resulting in the development of specific support for staff and managers.

Teleworking had already been a great success at CentraleSupélec since it was first developed in 2017. The pandemic made it necessary to apply this working method more broadly, and therefore those who so wished were authorised to take a second teleworking day per week.

2020 also saw a vote on CentraleSupélec's first disability roadmap. The disability policy has been developed in recent years, with visible results, as the number of staff identifying as disabled rose from 15 in 2016 to 23 in 2019.

This year also saw the dematerialisation of annual interview forms for administrative and technical staff, and a second step in participatory management training with deployment to middle management. In 2021, all CentraleSupélec managers will receive training.

Finally, the Human Resources Department and the Communication / Marketing Department have created *Minute HR*, a newsletter covering all HR news.

Preventative Medicine Service

Despite the difficult circumstances surrounding the Covid-19 crisis, a rich social dialogue has been maintained. Seven committees for Health and Safety in the Workplace ("Comités d'Hygiène, Sécurité et Conditions de Travail" or CHSCT) were organised to discuss, first, the Business Continuity Plan and then the Face-to-Face Business Resumption Plan to ensure that government instructions were implemented safely.

Working together, the doctor in charge of preventative medicine, the Adviser for disability and the social worker processed job adaptation applications from six people with disabled worker status ("Reconnaissance de Qualité de Travailleur Handicapé" or RQTH).

The network of preventative medicine assistants has been strengthened to implement the safety policy directly at the heart of the various work units of the establishment. This also made it possible to progress with inventory, risk assessment and proposals for initiatives, and subsequently transcription into the Single Document for Occupational Risk Assessment ("Document Unique d'Évaluation des Risques professionnels" or DUER). However, the work on the DUER has yet to be finalised.

SPOTLIGHT ON OUR QUALITY MISSION

During 2020, progress continued on the Office of the Dean's continuous improvement project, started in 2018. New processes have either been outlined, including administrative registration, second year campus assignment and third year Concentration and Option assignment, or are being studied, such as graduation, gap years or internships. A quality management system is being deployed with the Office of the Dean in parallel with the description of the processes.

THE CENTRALESUPÉLEC FOUNDATION

The CentraleSupélec Foundation is the result of the 2018 merger between the Centrale Paris Foundation and the Supélec Foundation. With a vision of broadened international recognition for French engineering qualifications, its mission is to support CentraleSupélec's strategic projects and to provide students with the best conditions in which to realise their potential.

Student support

One of the Foundation's priority missions is to provide support for students.

In addition to the emergency aid provided during the Covid crisis throughout the 2019/2020 academic year, the Foundation provided support to CentraleSupélec students in various ways:

- 173 students received grants from the CentraleSupélec Foundation, worth €362,000;
- 19 students received loan guarantees from the Foundation;
- 9 student associations received student life grants from the Foundation, worth €16,300 in total;
- Each of the School's sports clubs received sporting life grants from the Foundation, totalling €25,000;
- 30 students received computer loans from the Foundation.

Sébastienne Guyot scholarships

There are still too few female students today (17% of first-year students for the 2020/2021 school year). As part of its commitment to gender parity, CentraleSupélec has set up the Sébastienne Guyot scholarship program, specifically for young women, in a collaboration between the Department of Corporate Development and the CentraleSupélec Foundation.

Every year since 2010, with support from partner companies, the Foundation has awarded these scholarships in tribute to Sébastienne Guyot, one of the very first female students at the École Centrale, who went on to have an

exceptional career. These scholarships are awarded to students based on social criteria (having taken all other scholarships into account) and in recognition of motivation. They cover the full cost of studying at the School for a few female students.

The Sébastienne Guyot 2020 scholarships were awarded in December at an online ceremony. Three scholarships were awarded this year:

- One scholarship funded by Sopra Steria;
- Two scholarships funded by Eurofins.

The Sébastienne Guyot scholarships are worth €8,000 per year, for three years.

Congratulations to Mya Lahmamsi, Nicoleta Cazacu and Zoé Garbal, winners of the 2020 scholarships, and our thanks to our partner companies for their commitment to this program

Scholarships for entrepreneurs

Entrepreneurship has long been at the heart of CentraleSupélec's teaching, and even more so within the new engineering curriculum, which aims to produce true "entrepreneurial engineers". Our students are highly innovative, and role of the CentraleSupélec Foundation is to support all the measures that the School puts in place to encourage them to "take the plunge" and allow them to move from idea to reality with the greatest chances of success.



An increasing number of CentraleSupélec students each year will, in this way, create their start-ups and distinguish themselves in major national and international competitions. It must be said that at the School they benefit from an exceptionally rich ecosystem helping them to express their entrepreneurial spirit: specific courses within the engineering curriculum; a high-level incubator; close links with companies; a 5,000 m² fab lab “La Fabrique”, dedicated to prototyping and technical, legal and managerial support.

In 2020, the Foundation’s scholarships for entrepreneurs represented a total value of €30,000 and have helped nine start-ups.

One example of a start-up that has benefited: PIVR provides economical, ecological customer support with the repair of broken appliances to avoid having to replace with new.

The CentraleSupélec Foundation is increasingly invested in student accommodation: over 2,500 students benefit from conveniently located accommodation.

4,500 students attend CentraleSupélec, which has been based on the Saclay plateau since the start of the 2017 school year. To help them find convenient accommodation close to their school, and thus providing the best possible conditions for following their education, the Foundation has taken several steps, notably the building and acquisition of student residences. CESAL, a non-profit association, manages this rental accommodation, designed for CentraleSupélec students and, more generally, for students of Paris-Saclay University, of which the School is a part.

Student accommodation is a priority for the CentraleSupélec Foundation, which has been involved in this field for 100 years, initially in Paris, then in Châtenay-Malabry and finally in Gif-sur-Yvette. Supporting students in all aspects of their daily life and their education, by providing accommodation, is one of the Foundation’s priority areas.

Perpetuating inter-generational solidarity is a historic and founding value for our community.

Investing in student housing allows us to contribute to equal opportunities by providing housing for all, while also building a heritage for future generations.



For ten years, the Foundation has capitalised 10% of donations received. This contribution was essential in acquiring the land for the new residences. We would therefore like to thank our donors who have enabled us to invest for the benefit of students in a sustainable manner.

In 2020, the new “Le Mail” residence was inaugurated, accommodating nearly 300 students.

In total, over 2,500 students can now live on campus. This success would not have been possible without the involvement of multiple partners.



“ *Student accommodation is a major factor in the appeal of the School and Paris-Saclay University in France and internationally.* ”

▼
ROMAIN SOUBEYRAN
President of CentraleSupélec

STUDENT ASSOCIATIONS CONTINUE THEIR ACTIVITIES BY ADAPTING

Despite the pandemic, many CentraleSupélec associations were able to maintain some of their activities and events, organising intensely to guarantee optimal safety for all.

In this way the **Symposium association** was able to host some exceptional guests, either face-to-face or remotely. In January, François Hollande, former President of the Republic, spoke before 1,200 students about solutions for energising democracy in France. In September **François Villeroy de Galhau**, Governor of the Banque de France, spoke remotely about managing the current economic situation as well as the financing of ecological and digital transition, while a few days later **Stéphane Bancel**, CEO of Moderna, spoke about vaccine strategies. In December, **Cédric Villani**, Member of Parliament for Essonne and Fields Medallist, spoke about the role of engineers in politics.

In early September, the **WEI association** welcomed the class of 2020 in strict respect of tight health protocols. Thanks to the plan, which took over six months to prepare, a whole new system was created and shared with the appropriate authorities; On the one hand, the supervisory team was reinforced with 28 organisers, 304 second-year student volunteers, 16 event professionals, 11 security guards and a DPS (emergency planning system). On the other hand, health risks were managed using a variety of arrangements: adapted event clusters (activities, catering, evening events, etc.); check points throughout the site; VIP squares limited to ten occupants; etc. The end result? One broken finger; one case of sunstroke; and two students placed in voluntary isolation due to fever. Tests carried out during the month that followed indicated no outbreak.

On the 19th September, current and former students, teachers and staff members attended the 4th annual **Rencontre Omnisports CentraleSupélec (ROCS)** on the Paris-Saclay campus. With an adapted health protocol, the atmosphere was festive and friendly, and sport-focused: running, handball, basketball, volleyball, badminton, tennis, pétanque ...

The **CentraleSupélec Forum** took place in November. This is the largest student-organised recruitment event in France. Thanks to the hard work and proactivity of the organising team, the Forum was adapted to the lockdown restrictions in place and became a virtual event. Over 5,000 remote interviews were carried out between students and recruiters, 2,196 offers were made by nearly 160 companies, and 390 live-streamed events and conferences allowed students to detail their professional projects and talk with professionals. The closing lecture was given by **Élie Girard**, CEO of Atos.

From the 23rd to 27th November, **Apartés**, the traditional CentraleSupélec Arts week organised by the Arts Bureau, went online, in respect of lockdown regulations, becoming *Ap@rtés confinés* (lockdown Ap@rtés): the activities on offer included cooking tutorials and workshops, drawing, origami and reading, live-streamed cabaret improvisation and photography competitions.

Finally, **Junior CentraleSupélec (JCS)** reaffirmed its excellence by winning the Alten Prize for Best Business Development Strategy and being elected Best Junior Company in Europe for the second consecutive year.



STUDENT AND CAMPUS LIFE CONTRIBUTION

The Student and Campus Life Contribution ("La Contribution de Vie Étudiante et de Campus" or CVEC) was launched in 2018 as part of a law relating to student guidance and success.

Its goal is "to welcome students and offer social, health, cultural and sporting support and to reinforce the safety and health education measures put in place for their benefit".



All non-exempt students are required to pay the contribution prior to registration in the first year at higher education establishments. The contribution is collected by the CROUS, and a portion of the CVEC proceeds is then allocated to establishments according to the size of their student intake. Thus, in 2019-2020, CentraleSupélec received just over €229,000 in CVEC proceeds.

In 2020, CentraleSupélec used CVEC funds to provide financial support for projects aimed at:

- Identifying and preventing risky behaviour in students, with a focus on mental health;
- Continuing to support community life on campus, in particular in Rennes and Metz;
- Encouraging measures aimed at improving social support for students, chiefly by promoting solidarity initiatives;
- Preventing and combatting sexual harassment and discrimination generally within the School;
- Continuing the deployment of sports activities, especially team sports;

- Developing cultural proposals by encouraging the development of group initiatives in this field;
- Combatting isolation by focusing on improving student well-being.

The School has decided to allow associations, student and staff groups to submit projects that fall within this framework, in addition to measures initiated by the School.

A CVEC committee meets at least once a year to evaluate projects and decide on the allocation of funds. In 2020, 35 projects which met the selection criteria determined in the 2020 call for projects were assessed. 34 will receive CVEC funds amounting to a total of nearly €224K.

Of the projects that have received support since 2019, we would like to give special mention to the Peer Care prevention program, in the health domain, approved by the Board of Directors of the School in 2018 and aimed at reducing risky behaviours through peer prevention; also, programs to combat sexual violence on the Gif and Rennes campuses. Another approved project was the purchase of a food truck and creation of a food prep area on the Gif campus, for use by associations, to resolve food hygiene problems resulting from the preparation of take-away meals by associations. On the sports side, CVEC funds have supported the creation of recreational climbing slots in the evening at weekends as well as sports activities during the lunch break, when lockdown rules permit, and also renovation of the equipment in the exercise room on the Metz campus. Finally, CVEC funds are also used when welcoming international students.

Also in 2020, in accordance with the ministerial guidelines announced at the end of March, unallocated funds from 2019 CVEC were used to provide financial aid amounting to over €36,803 benefitting around fifty students in the form of the computers purchased and loaned to students, financial aid for students who lost jobs or internships, and emergency financial aid.



▼
ANNEXES



BOARD OF DIRECTORS

President : Delphine Ernotte Cunci

Vice-president : Sylvie Guessab

Ex-officio members :

- Representative of the Minister for Higher Education: Françoise Moulin Civil
- Representative of the Minister for Industry: Vincent Theyry
- President of Paris-Saclay University: Sylvie Retailleau

Qualified members:

- Jean Luc Barlet, Vice-President of the Association CentraleSupélec - Group Chief Compliance Officer of MAZARS
- Christine Benard, former Director of Research and Studies at the École Normale Supérieure and former Scientific Director of MICHELIN
- Philippe Carli, President of the CentraleSupélec Foundation - President of EBRA, CREDIT MUTUEL press department
- François Darchis, former Executive Director of AIR LIQUIDE (research, innovation)
- Corine Dubruel, President of the Association CentraleSupélec, VP and Managing Director PLUG POWER EUROPE
- Delphine Ernotte Cunci, President, FRANCE TELEVISIONS
- Vincenzo Esposito Vinzi, President and Director General, ESSEC
- Christian Galivel, Deputy Director General, RATP
- Marie-Luce Godinot, Deputy Managing Director, BOUYGUES CONSTRUCTION
- Valérie Kniazzef, President, ALCIMED
- Laurence Lafont, Chief Operating Officer, MICROSOFT France
- Catherine Langlais, Director R&D matériaux innovants, SAINT-GOBAIN
- Grégoire de Lasteyrie, Mayor of Palaiseau, President of the Higher Education and Research Commission of the Ile-de-France Regional Council
- Hugues Lavandier, Senior Partner, McKinsey New York
- Carmen Munoz-Dormoy, Chief Executive Officer, CITELUM (EDF group)
- Laurent Tardif, Chairman of the Management Board of PRYSMIAN Câbles et Systèmes France

University professors and equivalent representatives:

- Didier Clouteau
- Sylvie Guessab
- Pascale Le Gall
- Dominique Marcadet

Other teaching and research staff representatives:

- Jérémy Fix
- Benoît Valiron
- Marc-Antoine Weisser

Non-teaching staff representatives:

- Erika Jean-Bart
- Célestin Kinyock
- Marie-Agnès Loiseau

Titular user representatives:

- Antoine Beauvois
- Cécile Boniteau
- Nicolas Moron
- Marie Pavageau

SCIENTIFIC ADVISORY BOARD

The CentraleSup elec Advisory Board is composed of the following members:

- Mr. Christophe Bidan
- Mr. Lionel Gabet
- Mr. Olivier Gicquel
- Mr. Claude Marchand
- Mr. Romain Soubeyran
- Mr. Bernard Yannou

Qualified members:

- Mr. Bruno Aidan - Air Liquide, Chief Data Officer
- Mr. Herv  Arribart – GEC, Former Scientific Director of Saint-Gobain
- Mr. Patrick Bastard – Groupe Renault, Director of Research
- Ms. Brigitte Cardinael – Orange, VP, Research Director of the «Software Infrastructure» program
- Mr. Jean Paul Chabard – EDF, Scientific Director
- Mr. Eric Deutsch – Gustave Roussy Institute, Professor, Head of the Department of Onco-Radiotherapy
- Ms. Val rie Gu non – SAFRAN, Product Environmental Policy Director
- Ms. H l ne Oriot – ONERA, Research Master
- Ms. Anne Pacros – ESA, Solar Orbiter Mission and Payload Manager
- Mr. Henri Souchay - GE Healthcare, Clinical Research Manager for France
- Ms. Martine Soyer – CEA, Deputy Director of the Iramis Institute

Elected representatives from 1st college teaching staff:

- Ms V ronique Aubin
- Mr. Herv  Gu guen
- Mr. Zeno Toffano

Elected representatives from the non-teaching staff:

- Mr. Jean-Baptiste Tavernier
- Ms. Nad ge Terny

Repr sentants d'institutions partenaires :

- Mr. Etienne Aug  : Paris-Sud University, Professor of Physics, Vice-president of Paris-Sud University in charge of Research and Innovation
- Ms. Sylvie Boldo : INRIA, Research Director, Deputy Scientific Delegate of INRIA Saclay-Ile-de-France
- Mr. Laurent Nicolas : CNRS, Research Director, Deputy Scientific Director at the Institut des Sciences de l'Ing nierie et des Syst mes (INSIS-CNRS)

Elected representatives from 2nd college teaching staff:

- Ms. Wassila Ouerdane
- Mr. Jos  Picheral
- Mr. Damien Rontani

Elected user representatives:

- Mr. Koffi Fafadji Ahanogbe
- Mr. David Marchal

BOARD OF STUDIES

The composition of the CentraleSup elec Studies Council is fixed as follows:

- Mr. Didier Dumur
- Ms. Val erie Ferreboeuf
- Mr. Lionel Gabet
- Mr. Olivier Gicquel
- Mr. Erick Herbin
- Mr. Romain Soubeyran

Qualified members:

- Mr. Yves Bernard, Universit  Paris-Saclay, Directeur de Polytech Paris-Saclay
- Ms. Isabelle Demachy, Universit  Paris-Saclay, Vice-President of Educational Transformations
- Mr. Nicolas Gazeres, Dassault Syst emes SE, R&D Biosphere Technology Director
- Ms. Nathalie Lassau, Institute of Higher BioMedical Training, Director
- Ms. V ronique Le Courtois,  cole Centrale Lille, Faculty Member
- Mr. Fabien Mangeant, Renault, Expert in statistical methods
- Mr. F lix Papier, ESSEC, Deputy Managing Director
- Ms.  milie Poirson,  cole Centrale Nantes, Professor and Director of General Engineering Education
- Mr. Philippe Sajhau, IBM France, Vice-president

Elected 1st college teaching staff representatives:

- Mr. Paul-Henry Courn de
- Mr. Jean-Louis Gutzwiller

Elected representatives from 2nd college teaching staff:

- Mr. Yves Houzelle
- Mr. Nabil Sadou

Elected representatives from the non-teaching staff:

- Mr. Jean-Daniel Polizzo

Elected titular users representatives:

- Mr. Baudouin Herlicq
- Ms. Ga lle Lim
- Mr. Romain Morillon

Elected alternate user representatives:

- Ms. Fanny Seizilles de Mazancourt

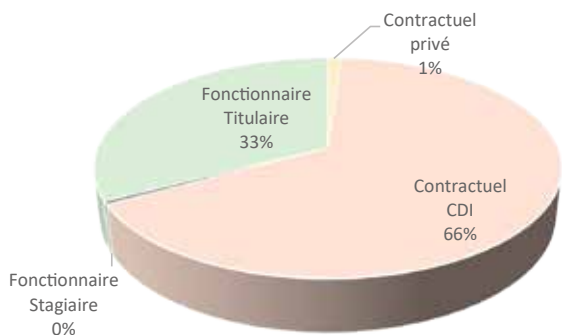
SUMMARY OF THE STUDENT POPULATION

	Duration	2020/2021	Women	Foreigners
Curriculum Centrale	3 years			
Year 2		1	0	0
Year 3		441	96	89
Curriculum Supélec	3 years			
Year 2		0	0	0
Year 3		358	74	33
Curriculum CentraleSupélec	3 years			
Year 1		938	176	160
Year 2		998	178	291
Year 3		218	50	62
Masters	1 year			
		164	46	114
PhD candidates	3 years			
		364	85	197
Specialised Masters	10-18 months			
		312	82	86
Masters of Science	1 year			
DSBA1/DSBA2		150	68	107
IA		9	2	4

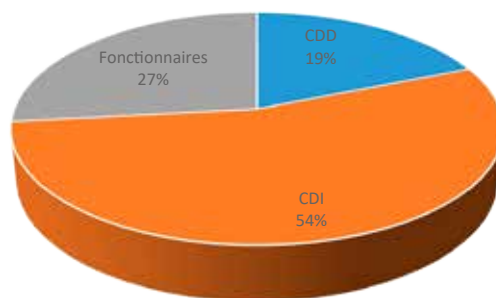
STAFF SUMMARY

Administrative and technical staff

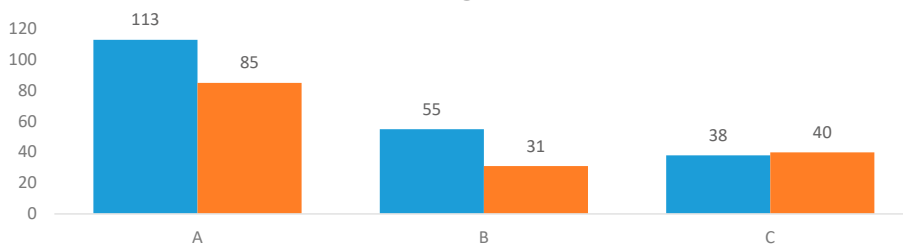
Répartition des effectifs permanents par statut



Répartition des effectifs ETP par statut

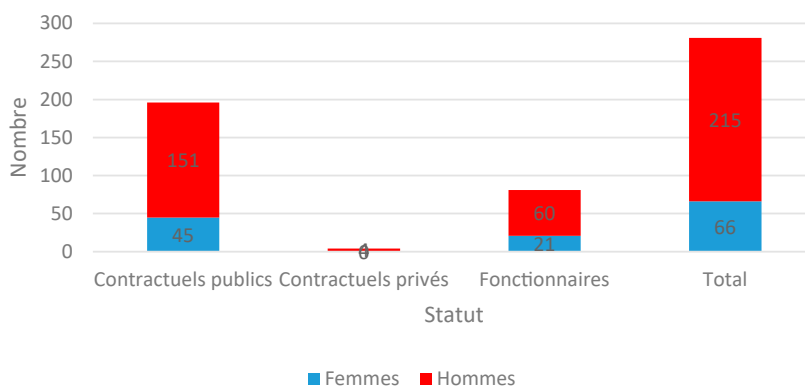


Répartition des effectifs physiques permanents par genre et catégorie



Permanent teachers and faculty members

Répartition des enseignants et enseignants-chercheurs par genre



STAFF SUMMARY

Teachers and faculty members

- 270 permanent teachers and faculty members
- 166 non-permanent teachers and faculty members

Administrative and technical staff

- 353 permanent administrative and technical staff
- 83 non-permanent administrative and technical staff

Assignments of permanent administrative and technical staff	ETP
Direction Metz Campus	22,8
Library Metz	0,8
IT and Digital Resource Centre	4,8
Education/Research	1,5
InfoCom - Communication Metz	1,2
Administrative department	7
General Services Metz	5,5
Other	2
Direction Rennes Campus	19,6
Administration Rennes	8,6
Library Rennes	1
Education/Research	1
IT and Technical Service	9
Department of Communication	6,8
Office of the Dean of Research	81,5
Doctoral Education	3
GDR Ondes	0,5
Centre for Visual Computing	1,4
Quantum and Molecular Photonics Laboratory	1
Laboratory of Signals and Systems	3
Laboratory EM2C (Molecular and Macroscopic Energetics, Combustion)	7
Process Engineering and Materials Laboratory	14
Group of electrical engineering – Paris	8
Industrial Engineering Laboratory	5
Mathematics in Interaction with Computer Science	3,5
Structures, Properties and Modelling of Solids Laboratory	11
Laboratory Sondra (CentraleSupélec ONERA DSO Research Alliance)	2
Soil, Structure and Materials Mechanics Laboratory	9,5
Support for research	11,6
Other	1
Office of the Dean of Studies	47,9
Administration and Finances	1
Student Support Cluster	2

Administration and Finance Team	3,5
Automation Department	1,5
Electromagnetics Department	3
Energetics Department	0,8
Energy Department	1
IT Department	1
Language and Culture Department	1
Leadership and Engineering Department	1,5
Mathematics Department	1
Civil Engineering Department	1
Signal and Statistics Department	0,5
Electronic Systems Department	1,5
Information Technologies, Advanced Systems Department	4
Telecommunications Department	1
Centrale Curriculum Department	3
Supélec Curriculum Department	1,6
Programmes Cluster	6,7
Office of Academic Administration	9,8
Other	1,5
Department of Strategic Studies	1,5
Department of Corporate Relations	10,8
Department of International Relations	6,8
Direction Executive Education	6
Operations Management and Administration	145,04
Administration DGS	1
Accounting Agency	7,8
Library and Documentation Centre	10,8
Management Control	1
Digital Institute and Information Systems	24,4
Department of Heritage and Property Management	60,1
Administrative Affairs and Finance Department	8,4
Department of Human Resources	15,97
Health and Safety Mission	1
Campus Life Mission	2
Process management	1
Student Administration Services	2
Applications and Admissions Department	5
Legal Department	2
Medical Services	1,57
Other	1
CentraleSupélec Foundation and Alumni Relations	0,8
Other	3,5
TOTAL	353,04

ANNUAL PERFORMANCE PROJECT - SUMMARY

Presentation of the Annual Performance Project

In 2020, for the second consecutive year, CentraleSupélec made a formal presentation of its Annual Performance Project (PAP). This is in response to a request from the members of the School's Board of Directors that they be informed about the main objectives influencing the budget, as well as about the budget itself.

This performance approach, currently being rolled out within our establishment, should allow tighter management of our activity and result in the creation of a set of management and decision support tools. Therefore, PAP is not just the formalisation of our commitments by contract, but also provides important support for enriching the budgetary dialogue.

Thus, for each of the seven strategic axes defined, the 2020 Annual Performance Project retraces the objectives, indicators and results targets whose achievement was estimated during an interim review in October 2020, this achievement being then definitively measured at the beginning of 2021.

The seven strategic axes of the 2020 Annual Performance Project:

- Contributing to the success of Paris-Saclay University
- Continuing the implementation and stabilisation of the engineering curriculum
- Implementing the new economic model
- Strengthening the excellence of scientific research

- Improving internal functioning, management and communication
- Continuing CentraleSupélec's digital transformation
- Pursuing CentraleSupélec's international development

The Annual Performance Project: 2020 Final Report

2020 was marked by the Covid pandemic which impacted some of the objectives.

3 sectors were particularly hard hit:

- International
- Continuing Education
- Business relations

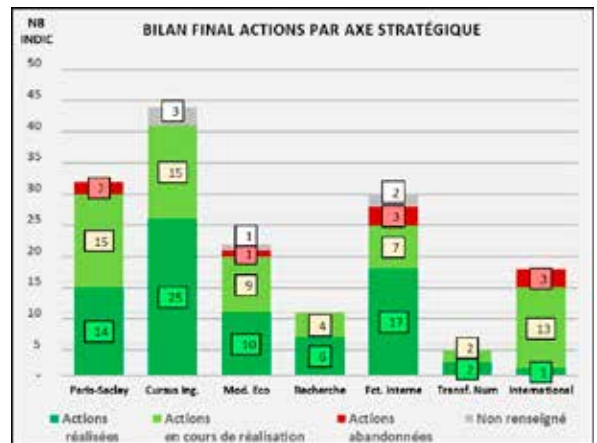
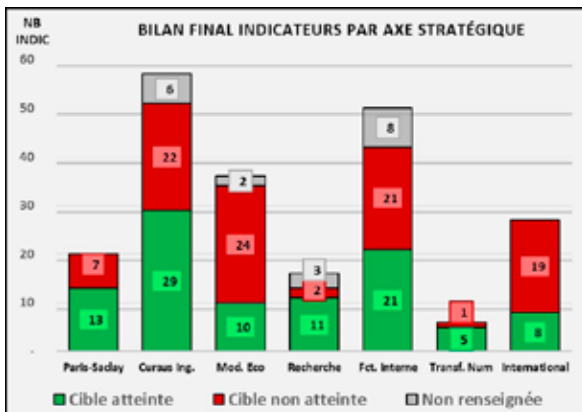
The key figures of the report are as follows:

Of the 212 indicators which correspond to the 78 objectives broken down in 2020 between the various departments of the School:

- 46% of indicators achieved their target
- 45% of indicators did not reach their target
- 9% of the indicators did not provide feedback

Of the 156 initiatives adopted:

- 48% of the initiatives adopted have been completed
- 42% of the initiatives adopted are underway
- 4% of the initiatives did not provide feedback
- 6% of the initiatives were discontinued



FINANCIAL SUMMARY

Charges (hors taxes)	Exercice 2020	Exercice 2019
CHARGES DE FONCTIONNEMENT		
<i>Achats</i>	125 399,95	4 803,96
<i>Conso marchandises et appro, réalisation travaux et conso directe service par l'organisme</i>	18 137 212,05	19 140 369,42
<i>Charges de personnel</i>	58 287 053,80	57 937 935,48
Salaires, traitements et rémunérations divers	40 522 240,72	40 528 288,85
Charges sociales	16 853 638,74	16 552 270,67
Intéressement et participation		
Autres charges de personnel	911 174,34	857 375,96
<i>Autres charges de fonctionnement (dont pertes pour créances irrécouvrables)</i>	3 489 259,07	5 137 866,82
<i>Dotations aux amort, dépréciations, provisions et valeurs nettes comptables actifs cédés</i>	19 780 488,33	22 276 025,46
TOTAL CHARGES DE FONCTIONNEMENT	99 819 413,20	104 497 001,14
CHARGES D'INTERVENTION		
<i>Dispositif d'intervention pour compte propre</i>		
Transfert aux ménages		
Transferts aux entreprises		
Transferts aux collectivités territoriales		
Transferts aux autres collectivités		
<i>Charges résultant de la mise en jeu de la garantie de l'organisme</i>		
<i>Dotations aux provisions et dépréciations</i>		
TOTAL CHARGES D'INTERVENTION		
TOTAL CHARGES DE FONCTIONNEMENT ET D'INTERVENTION	99 819 413,20	104 497 001,14
CHARGES FINANCIÈRES		
<i>Charges d'intérêt</i>	1 439 129,00	1 497 429,39
<i>Pertes de change</i>	10 112,72	1 401,33
<i>Autres charges financières</i>	1 186,08	
TOTAL CHARGES FINANCIÈRES	1 450 427,80	1 498 830,72
Impôts sur les sociétés		303,00
RESULTAT DE L'ACTIVITE (BENEFICE)	6 416 882,30	3 922 344,61
TOTAL CHARGES	107 686 723,30	109 918 479,47

Produits (hors taxes)	Exercice 2020	Exercice 2019
PRODUITS DE FONCTIONNEMENT		
<i>Produits sans contrepartie directe (ou subventions et produits assimilés)</i>		
Subventions pour charges de service public	63 757 440,77	65 850 217,39
Subventions de fonctionnement en provenance de l'Etat et des autres entités publiques	40 377 657,00	49 118 216,00
Subventions de certaines charges d'intervention provenant de l'Etat et entités publiques	20 304 561,60	13 983 881,24
Dons et legs	50 250,00	50 000,00
Produits de la fiscalité affectée	3 024 972,17	2 698 120,15
<i>Produits avec contrepartie directe (ou produits directs d'activité)</i>		
Ventes de biens ou prestations de services	29 238 460,23	28 132 843,87
Autres produits de gestion	26 107 044,97	27 182 004,62
Produits perçus en vertu d'un contrat concourant à la réalisation d'un service public	3 131 415,26	950 839,25
<i>Autres produits</i>		
Reprises sur amortissements, dépréciations et provisions (produits de fonctionnement)	14 688 352,07	15 929 000,24
Reprises du financement rattaché à un actif	2 026 239,93	3 323 347,61
12 662 112,14	12 662 112,14	12 605 652,63
TOTAL PRODUITS DE FONCTIONNEMENT	107 684 253,07	109 912 061,50
PRODUITS FINANCIERS		
<i>Produits nets sur cessions des immobilisations financières</i>		
Intérêts sur créances non immobilisées	2 470,23	5 986,08
Produits nets sur cessions de valeurs mobilières de placement		332,98
Gains de change		98,91
TOTAL PRODUITS FINANCIERS	2 470,23	6 417,97
RESULTAT DE L'ACTIVITE (PERTE)		
TOTAL PRODUITS	107 686 723,30	109 918 479,47

RESEARCH CONTRACTS

		Nombre	Montant
Europe et Feder			
	Portefeuille	6	1 717 406 €
	Dont niveau 2020	2	608 208 €
Coopératifs (ANR, FUI, ...)			
	Portefeuille	52	8 202 414 €
	Dont niveau 2020	14	2 435 471 €
Chaires			
	Portefeuille	20	26 671 272 €
	Dont niveau 2020	5	12 182 000 €
Bilatéral			
	Portefeuille	232	17 590 259 €
	Dont niveau 2020	101	5 270 769 €
Subventions (yc Labex, Idex)			
	Portefeuille	113	6 871 786 €
	Dont niveau 2020	34	1 784 592€
TOTAL			
	Portefeuille	423	60 053 137 €
	Dont niveau 2020	156	22 281 040 €



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