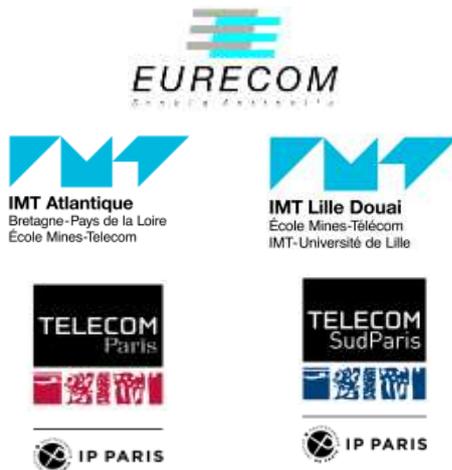




Press release
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Institut Mines-Télécom among the first winners of the call for 5G projects launched by the Strategic Sector Committee for Digital Infrastructure

Its "Beyond 5G" project positions the industry in disruptive uses of 5G and its following stages.



Institut Mines-Télécom is drawing on the research of its schools – IMT Atlantique, IMT Lille-Douai, Télécom Paris, Télécom SudParis – and of its subsidiary, EURECOM, to contribute to the industry recovery plan by teaming up with Thales SIX GTS France and Ericsson France to address the strategic challenge of digital sovereignty posed by 5G. "Beyond 5G" is one of the first four winning projects selected through the call for projects launched by the Strategic Sector Committee (CSF) for Digital Infrastructure: **Sovereignty in Telecommunications Networks to Accelerate 5G Applications in Vertical Markets**". The

participants in the "Beyond 5G" program will work together for three years to design technical solutions for the development of sovereign and secure next-generation 5G networks, while developing innovative uses for the industry of the future. IMT's project goes far beyond a simple technical improvement by paving the way for a wide range of industrial uses based on new cognitive, predictive and contextual capabilities in order to provide an unprecedented experience. The project teams will also focus on post-5G developments, which will be driven by the introduction of disruptive technologies with severe constraints in terms of digital security.

IMT supports companies in innovation and economic development, in particular through partner-based research, and identified 5G as an issue of central importance to the French economy several years ago. As such, it took part in the first wave of the call for projects launched by the Digital Infrastructure Strategic Sector Committee (CSF) with an overall budget of €27M. This selection rewards an ambitious project that lays the technical foundations in terms of infrastructure and software for 5G networks, while preparing for the future of 5G and post-5G with disruptive uses.

Quick, direct interface between academic and industry partners

To set up the project, IMT teams worked in close collaboration with those of its subsidiary, EURECOM, which specializes in digital security, communication systems and data science, to get the

project on its feet. Once the project is launched, IMT Atlantique will lead the academic side, to which EURECOM, Télécom Paris, Télécom SudParis and IMT Lille-Douai will contribute through research and testing. Significant resources will also be invested on the industrial side. Teams at Thalès SIX GTS France, the administrative leader of "Beyond 5G," and Ericsson France will work on R&D, in addition to designing new use cases.

Specialized testing platforms

These new use cases will be tested on dedicated platforms to ensure that they reflect the immediate and future needs of industrial users. The Thales platform will make it possible to test and validate advanced 5G functions such as end-to-end slicing (virtual separation of the use of the physical network according to the user's requirements), service-based architectures (SBA), edge computing, access virtualization (RAN) and securing virtual functions. Télécom SudParis will provide its Cybersecurity and 5G platforms. Télécom SudParis will use the latter platform to test dynamic slicing and edge computing by drawing on wireless access networks and a fixed transport network. Meanwhile, EURECOM's Open5GLab platform will be used to assess the 5G and post-5G cybersecurity and advanced communications solutions proposed by EURECOM, Thales, Ericsson and IMT on a comprehensive HW and SW infrastructure (OpenAirInterface software suite, very high-speed interconnection, frequency licenses).

New platforms accredited by the Digital Infrastructure CSF will be set up to complete the project. This organization based on platforms will make it possible to quickly test R&D results, and will help establish a French telecom/digital sector to support rising industries in the country.

5G: groundbreaking user experiences

The "Beyond 5G" project seeks to help unlock the full potential of 5G by developing applications integrating appropriate specifications in terms of frequency rises, latency reduction, and increased bandwidth. The future use cases that arise will be valuable for a number of critical sectors: industry of the future, health, mobility/transportation etc., in addition to mainstream mobile internet access services. Their deployment will usher in profound changes in our economies and societies with applications that transform cognitive capacities by creating exceptional predictive and contextual experiences.

Therefore, network security will be even more critical since we will be greatly dependent on the new services offered.

Cybersecurity, an essential precondition for sovereignty

The power of 5G and 6G networks means that there is a need for improved security and operational capabilities (protection, detection, response) integrated in control and management systems for digital infrastructure. 5G should make it possible for organizations to better control their cybersecurity by setting the parameters themselves, eliminating the need for some service providers, cloud and telecom operators. At the state level, the development of a cybersecurity sector will contribute to the emergence of players with a European dimension providing trustworthy security products and services, therefore ensuring sovereignty.

"Beyond 5G" plans to advance the state of the art in security for 5G systems throughout their lifecycle, from deployment to automated monitoring of incidents. Current detection solutions have proven to be relatively ineffective. The program teams hope to eventually improve the design of 5G and post-5G systems to make them more robust. The project also anticipates the advent of quantum computing, which represents a real security threat given the expected long life cycle of the 5G and 6G systems to come.

Christian Picory-Donné, Director of Industrial Partnerships and Technology Transfers at IMT and Carnot Institute Télécom & Société Numérique, explains, *"Beyond 5G facilitates the design of disruptive innovations, which will give companies a crucial competitive advantage in the years to come. Although international companies have the economic capacity to innovate, independent of the national context, the challenge for France is to allow SMEs and mid-caps to harness the full potential*

of this technology. Our response to this call for projects is a step in the right direction and will help structure an entire sector."

David Gesbert, a professor at EURECOM and scientific coordinator of the submitted project, adds, *"Beyond 5G responds to a twofold technological and geo-strategic challenge. We must foster the development of an ecosystem that covers the entire value chain, from R&D to designing new hardware and software components to support the development of new business models. To do so, we must combine performance in terms of communication quality and security. This must be done in anticipation of standard versions to come, beyond the current "5G Release," hence the importance of these research programs."*

About IMT www.imt.fr

Institut Mines-Télécom is a public higher education and research institution under the aegis of the French Ministry for the Economy, Industry and Digital Affairs, which groups together 8 graduate schools: IMT Atlantique, IMT Lille-Douai, IMT Mines Albi, IMT Mines Alès, Institut Mines-Télécom Business School, Mines Saint Etienne, Télécom Paris et Télécom SudParis, 2 subsidiaries: EURECOM and Insic, and a network of strategic and affiliated partners. Its activities in the fields of engineering sciences and digital technology support the education of engineers and managers, partnership-based research, innovation and economic development. Always attentive to the economic world, IMT combines strong academic and scientific legitimacy, close corporate relations and strategic positioning in the key transformations of the 21st century: digital technology, industry, energy and ecology, and education. IMT is a founding member of the Alliance for the Industry of the Future and co-founder of the Franco-German Academy for the Industry of the Future with Technische Universität München (TUM). It is recognized by 2 Carnot Institute accreditations for the quality of its partner-based research. Each year, IMT trains over 12,000 students, enters into nearly 70 million research contracts, and hosts some 100 start-ups in its incubators.

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