

Acceleration phase for the project of the Research Program (PEPR) in Cybersecurity DefMal: (Defense against Malware)

**LORRAINE
UNIVERSITY OF
EXCELLENCE**

68 laboratories

**4 486 researchers
and professors**

**1947 PhD
students**

**108 scientific
platforms and
equipment**

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A unique research project in Europe with the goal of making significant breakthrough in Malware analysis and defense

● Launched in 2022 as part of the France 2030 plan, led by the Université de Lorraine, the DefMal project of the Research Program (PEPR)¹ in Cybersecurity, which focuses on the study of malicious software and programs, is intensifying its one-year evaluation. It brings together both the domains of research and enterprises; this project aims to enhance the detection of malware and ransomware while addressing the economic, legal, criminal, and sociological aspects that underlie this ecosystem.

Malicious software poses an exponential threat for citizens, businesses and the civil services. Evolving into increasingly diverse and complex forms that are challenging to detect. These malicious programs are now capable of infiltrating various aspects of our digital environment, including IoT devices, embedded systems like drones and autonomous vehicles, industrial systems (ICS/SCADA), and the entire IT infrastructure, including the cloud, smartphones, and ,in general the internal software of electronic products.

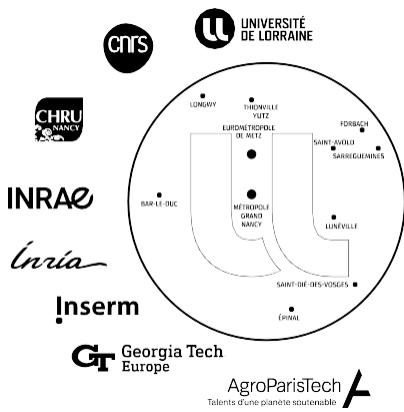
The Loria, Lorraine Laboratory of Computer Science Research and its Applications (CNRS, Inria, Université de Lorraine), is one of the leading research forces in France in this field. **Its work, conducted in close collaboration with other university research institutions in France and in Europe, has led to significant breakthrough in the early detection of cyber threats for more effective combat.**

DefMal, a large-scale project, also benefits from committed collaborations on the European and international level, including the Center of Cybersecurity CISP² in Germany, as well as JAIST³ and

¹ **PEPR**: Program and Priority Research Equipment

² **CISPA** is the Helmholtz Center for information Security based in Saarbrücken, Germany

³ **JAIST** stands for Japan Advanced Institute of Science and Technology, located in Kanazawa, Japan



NICT⁴ in Japan. *“The proliferation of threats in recent years makes it essential to have interdisciplinary academic engagement, in constant connection with the enterprise world and the government authorities”* analyzes Jean-Yves Marion, professor at the Université de Lorraine, a member of the IUF (Institute Universitaire de France), and the project lead for DefMal.

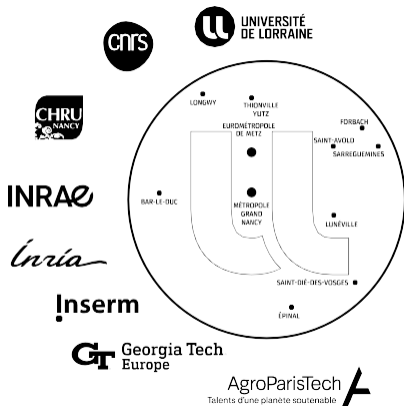
An unprecedented budget of 5 million euros, spread over 6 years

The financing of DefMal comes from the Research Program (PEPR) in Cybersecurity, operated on behalf of the state by the National Research Agency (ANR), which aims to enhance the excellence of French research and support the development of Cybersecurity sector. **It is one of the top ten targeted research projects. Launched last June, it is part of a national acceleration strategy announced by the President of the Republic, constituting the upstream research aspect.**

Led by the Université de Lorraine, the project mobilizes a community of scientists, as well as 12 doctoral students from partner institutions of DefMal, including Central Supelec, CEA, CNRS, Eurocom, Inria and Irlisa. One of the main objectives is to develop new analysis and detection approaches through an interdisciplinary approach, enabling the study of ecosystems and economic models related to malware. An exchange platform dedicated to scientists and potentially to government services and industrial partners will include a malware database and offer services based on the tools developed by the consortium. The project aims to reduce the entry cost into this research field, creating a crucial advantage effect in the acceleration of Cyber-defense.

Another crucial aspect of the project is the involvement of numerous companies in the cybersecurity field, which is a determining factor for success. Since 2022, the Université de Lorraine has been working with the Wallix software company through a joint research laboratory with CNRS, as well as Cyber-Detect, a cybersecurity startup stemming from Loria. Many leading French technology companies are involved and regularly consulted. The goal is to understand the challenges these companies face in terms of research and **strengthen the link between the academic and innovation world.**

⁴ **NICT** represents the National Institute of Information and Communications Technology, based in Tokyo



Following its initial evaluation on October 9, the DefMal project of the Research Program (PEPR) in Cybersecurity enters an acceleration phase. *‘The project evaluation, one year after its launch, will allow us to achieve the fundamental goal of acquiring the ability to anticipate and respond rapidly to cyber-attacks by malicious programs and to enable companies, civil services, and institutions to benefit from it. We should commend the government’s commitment to strengthening Cybersecurity and supporting research in this field’*, concluded Jean-Yves Marion

The results of the DefMal project will be presented at international conferences. The project will also be involved in the training of young researchers and aims to establish collaboration with government services and companies.

About the Lorraine Research Site

Led by Jean-Yves Marion, professor at the Université de Lorraine and former director of Loria, targeted DefMal project, originating from the Research Program (PEPR) in Cybersecurity DefMal brings together renowned partners including Centrale Supélec, CEA, CNRS, Eurecom, and Inria. This project is the result of interdisciplinary collaborations that have been evolving since 2015 with **Lorraine Université d’Excellence, an initiative of the Lorraine research site (Université de Lorraine, CNRS, Inserm, INRAE, Inria, Nancy University Hospital, Georgia Tech Europe, and AgroParisTech)**. It is part of a dynamic process of creating knowledge, transferring, and innovation, contributing to the economic development of the Region. This dynamic addresses the major transitions in our world: Materials, Energy, Ecological Transition, Digital, Health, and the role of Humans in these Societal Changes.

To learn more: <https://www.univ-lorraine.fr/lue/espace-presse>