PRESS RELEASE

Final Presentation at the German Embassy in Paris, September 24, 2025

Franco-German Flagship Project GreenBotAI: Trustworthy AI "Made in Europe"

The Franco-German AI initiative is part of a long-term strategic partnership. Since the signing of the Aachen Treaty in 2019, both countries have intensified their cooperation in this area. Specifically, the collaboration between the German Federal Ministry for Economic Affairs and the French Ministry for Economy and Digital Sovereignty pursues a shared goal: to strengthen European competitiveness, drive green and digital technologies, and ensure technological leadership. GreenBotAI is a key example—enhancing the robustness of robotic automation.

On September 24, the four project partners—Fraunhofer IWU, Munich University of Applied Sciences, INBOLT SAS, and ENSAM LISPEN—presented the results of three years of intensive project work at the German Embassy in Paris.

GreenBotAI was selected under the Franco-German funding call "Innovation Projects on Artificial Intelligence Technologies for Risk Prevention, Crisis Management and Resilience." A total of five projects were funded, with a combined value of approximately €17.9 million, aiming to strengthen crisis resilience through AI—particularly in areas such as sustainability and supply chains. As early as 2020, in line with the Aachen Treaty, funding programs were established to support scientific and industrial cooperation that contribute to European technological sovereignty.

GreenBotAI Cuts Robot Energy Consumption by Over 25 Percent

Smaller batch sizes, increasingly complex production lines, rising competitive pressure, unstable supply chains—GreenBotAI tackled these challenges by focusing on robotics. Technically, the project focused on improving reaction and latency times of industrial robots, optimizing path planning, and enabling task execution even during robot movement.

The algorithms developed by GreenBotAI allow industrial users to implement tasks such as rapid on-the-fly bin-picking, tracking, assembly, and quality control—without requiring deep robotics expertise. Modular machine learning models were developed and evaluated in customized simulation environments using synthetic data, enabling robust AI-driven 2D and 3D tracking combined with force-torque control.

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Real-time communication via the User Datagram Protocol (UDP) and a modular architecture ensure seamless data exchange and adaptability across a wide range of robotic systems.

Lower Energy Use Without Replacing Robots
GreenBotAI addressed several levers to reduce energy consumption by more than 25%. In addition to lightweight AI models and faster gripping tasks, a key factor was the reduction of computational load.

The Project Partners

Fraunhofer IWU led the GreenBotAI consortium. With around 670 highly qualified employees, it is based in Chemnitz, Cottbus, Dresden, Leipzig, Wolfsburg, and Zittau. Its research focuses on components, processes, and systems—including the complex interaction between machines and humans—encompassing the entire factory. GreenBotAI was led by the Process Digitalization and Manufacturing Automation division, which brings specialized expertise in testing technology, automation, and artificial intelligence.

HM Hochschule München Munich University of Applied Sciences: With more than 500 professors, 780 lecturers and over 18,300 students, HM is one of the largest universities of applied sciences in Germany. It offers around 100 bachelor's and master's degree programmes in the fields of technology, economics, social sciences and design. The university fosters close contacts with industries and institutions in the Munich economic region and is committed to application-oriented teaching and research. In Germany’s leading start-up ranking, HM once again ranked first among large universities. In addition to gaining professional skills, students focus on entrepreneurial and sustainable thinking and action. Trained in interdisciplinary work and intercultural thinking, its graduates help shape a digitally and internationally networked working world. In rankings, they are among the most sought-after applicants by employers throughout Germany.

INBOLT SAS is a Paris-based deep-tech startup specializing in real-time robotic guidance systems based on 3D vision and artificial intelligence. Founded in 2019, the company aims to simplify automation in industrial production and offers software solutions compatible with standard 3D cameras and robots.

École Nationale Supérieure d’Arts et Métiers (ENSAM) is a prestigious French engineering school. Its research laboratory, LISPEN (Laboratoire d'Ingénierie des Systèmes Physiques et Numériques), focuses on the interface between physical and digital systems. Research areas include the analysis, simulation, and control of complex dynamic systems, with special emphasis on robotics, industrial automation, and automotive engineering.

Closing event on 24 September, German Embassy in Paris

The project partners presented the GreenBotAI results to around 50 invited guests, including representatives from French ministries, GTAI (German Trade and Invest), and the UPHF University. KUKA, Schunk, Nikon SLM, Dassault Systèmes, Capgemini, Draft'n Run, Multiverse Computing, DLR Project Management, and Helm & Walter IT Solutions enriched the event with pitches on robotics and AI.

The project partners would like to thank the German Embassy in Paris for providing their facilities, especially Minister Plenipotentiary Ms. Gudrun Lingner for her introductory remarks, and Ms. Stefanie Stegeman and her team for their dedicated organizational support during the closing event of GreenBotAI.

Fig. 1 GreenBotAI Project team, from left to right: Sergio Valderrama Naranjo (ENSAM), Louis Muffang (Inbolt), Jean Milpied (Inbolt), Quentin Consigny (ENSAM), Vincent Lori (ENSAM), Vincent Deschodt (ENSAM), Adrien Florit (ENSAM), Richard Béarée, Louis Dumas (Inbolt), Martin Naumann/Rico Löser (Fraunhofer IWU), Ruth Otto (HM), Yunqi Gu (HM).
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Fig. 2 GreenBotAI Demonstrator, Robotics made simple and efficient: Guided by 2D images, the robot picks up a component and inserts it into a second gear using intelligent, force-torque-controlled AI.
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Fig. 3 GreenBotAI Demonstrator, Vision-Guided Robotic Picking made frugal and efficient: lightweight AI model is used to identify the position and orientation of the objects, and the robot trajectories are optimized. Energy consumption and picking time are reduced respectively by 30% and 8,5% as compared to conventional solution. ©ENSAM (Photo taken at Arts et Metiers Lille campus - LISPEN)

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