Thales and CEA partner on trusted generative AI for defence and security

- **Thales and the French Alternative Energies and Atomic Energy Commission (CEA) have signed a new partnership agreement in the field of generative artificial intelligence (AI).**
- **The Thales AI research teams at the Group's AI accelerator for mission-critical systems, will work with the CEA teams to deliver sovereign trusted AI solutions.**
- **Through this three-year renewable partnership, Thales will provide its AI expertise and deep knowledge of the defence and security sectors, while the CEA will contribute its know-how in multimodal generative AI (based on text, images, audio, electromagnetic signals, structured data and other inputs) to accelerate the integration of AI into solutions for Thales customers with critical mission requirements.**

Alexandre Bounouh, Director of the CEA-List Institute, specialising in smart digital systems, and Bertrand Tavernier, CTO for Thales's Secure Communications and Information Systems business, at the signing of the partnership agreement on 30 April 2024 in Palaiseau, France.

To create trusted generative AI solutions, Thales's AI Lab, the most powerful integrated laboratory for critical AI in Europe, and the CEA, which is one of the world's most innovative research organisations and is listed alongside Thales in the Clarivate Analytics Top 100 Global Innovators,[1] have joined forces to focus on a range of generative AI use cases, in particular for intelligence and command applications.

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[1] *The CEA is listed with Thales in the Top 100 Global Innovators published by Clarivate Analytics:* Thales listed among world's top 100 most innovative companies for 11th time | Thales Group

Bertrand Tavernier, Chief Technical Officer for Thales's Secure Communications and Information Systems business: "*This partnership with the CEA's AI teams will combine the power of their research with our work at Thales's AI accelerator, which brings together the Group's technological expertise and deep knowledge of the defence and security sectors. Our customers — governments, armed forces, critical infrastructure operators — need trusted, sovereign generative AI solutions for their critical missions.*"

Alexandre Bounouh, Director of the CEA's List Institute, specialising in smart digital systems: "*This partnership builds on the long-standing collaboration between the CEA and Thales and extends it to the sensitive issue of generative AI, combining the expertise and excellence of the CEA's research teams in AI safety and security with Thales's AI accelerator's strengths in the strategic domain of defence and security. It will support the CEA's mission in safety, security and artificial intelligence with our partners and all institutional and industry stakeholders in this field.*"

Use cases for the armed forces

Generative AI can be developed to **accelerate OODA command loops** (observe, orient, decide, act) and implemented across the entire critical decision chain: sensing and data gathering, data transmission and storage, data processing and decision support.

Generative AI will serve as a **trusted smart assistant** for users, enabling them to dialogue easily and efficiently with complex systems with the aim of facilitating and accelerating human decision-making and the tempo of operations. For **intelligence gathering**, for example, multimodal generative AI will make it possible to simultaneously extract, process, correlate and interpret different types of information from multiple sources — such as the web, social media and sensors in a theatre of operations — to generate summaries and accelerate the production of reliable reports.

Thales's AI Lab and the CEA will also focus on **interoperability within coalitions**. To simplify communication between member states in the context of a joint operation, trusted generative AI will facilitate interaction between operators and complex systems by translating their intentions into a sequence of actions and translating technical terms into the languages of the various nations involved.

Thales, a leader in trusted AI for mission-critical systems

Thales is a major player in **trusted, cybersafe, transparent, explainable and ethical AI** for armed forces, aircraft manufacturers and critical infrastructure operators. In 2023, the Group was Europe's **top patent applicant in the field of AI for mission-critical systems**. It has more than **600 AI experts** and hosts around 100 PhD students every year in AI at Thales's **AI accelerator in the field of research** (AI Lab), **systems** (AI Factory for decision support systems) and **sensors** (AI Sensors for sonar, radar, radio and optronics). Thanks to Thales's AI accelerator and its network of world-class industry, start-up and academic partners, Thales is building AI into more than **100 of its products and services**. Benefiting from the most advanced sensor and system technologies, these AI capabilities cover the full spectrum of

needs in defence, aviation, space, cybersecurity and digital identity. Trusted AI is designed to meet the specific **security** and **sovereignty** needs of Thales's customers. It brings greater **efficiency** to data analysis and **decision support** and speeds up the **detection**, **identification** and **classification** of objects of interest and target scenes, while taking account of specific constraints such as **cybersecurity**, **embeddability** and **frugality** in critical environments.

CEA, a key player in trusted AI for mission-critical systems

In the field of artificial intelligence, the CEA is uniquely positioned across the entire AI value chain, with skills ranging from algorithms and software development tools to computing architectures and microelectronics. The hardware and software solutions developed by the CEA with its academic and industry partners are aimed at applications where AI quality and performance are critical. They include sovereign applications for which the CEA is its own customer (cybersecurity, defence, energy) and industrial applications to which the CEA contributes its expertise.

The CEA has developed high-level expertise in AI technologies, enabling the agency to support its industry partners in the development of innovative solutions. At its CEA-List Institute specialising in smart digital systems, the CEA focuses its research on the development of high-performance, trusted and sovereign models.

Working with Thales, the CEA teams will be applying their expertise more specifically to develop LLMs (large language models) and VLMs (vision language models) for the sectors and use cases targeted by Thales.

About Thales

Thales (Euronext Paris: HO) is a global leader in advanced technologies specialized in three business domains: Defence & Security, Aeronautics & Space, and Cybersecurity & Digital identity.

It develops products and solutions that help make the world safer, greener and more inclusive.

The Group invests close to €4 billion a year in Research & Development, particularly in key innovation areas such as AI, cybersecurity, quantum technologies, cloud technologies and 6G.

Thales has close to 81,000 employees in 68 countries. In 2023, the Group generated sales of €18.4 billion.

About CEA

The CEA is a major research organisation working in the best interests of the French State, its economy and citizens. Thanks to its strong roots in fundamental research, it is able to provide tangible solutions to meet their needs in four key fields: low-carbon energy, digital technologies, technologies for medicine of the future, defence and national security. As the world's leading innovator among public research organisations (Clarivate 2024), the CEA acts as a catalyst and accelerator of innovation for French industry. It helps businesses in all sectors be more competitive, creating high-performance products that stand out from the crowd and developing trail-blazing solutions that lead to changes in society. The CEA deploys this dynamic in all regions of France aiding local partners to innovate themselves, thus helping to create sustainable value and jobs nationwide, tailored to meet actual industry needs. At the same time, it supports the development of its 250 start-ups, agile vectors for transferring the disruptive technology and knowledge developed at CEA laboratories to industry.
Find out more: www.cea.fr

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