NEWS RELEASE

CEA-Leti and Soitec Announce Strategic Partnership to Leverage FD-SOI for Enhanced Security of Integrated Circuits

Focus Is on Protecting Critical Markets Such as Automotive, Industrial IoT, and Secure Infrastructure

GRENOBLE, France – June 18, 2025 – CEA-Leti and Soitec today announced a strategic partnership to enhance the cybersecurity of integrated circuits (ICs) through the innovative use of fully depleted silicon-on-insulator (FD-SOI) technologies. This collaboration aims to position FD-SOI as a foundational platform for secure electronics by leveraging and extending its inherent resistance to physical attacks.

At the heart of the initiative is a joint effort to experimentally validate and augment the security benefits of FD-SOI—from the substrate level up to circuit design. The project aims to deliver concrete data, practical demonstrations, and roadmap guidance to meet the surging cybersecurity demands in critical markets such as automotive, industrial IoT, and secure infrastructure.

Combining Expertise to Secure the Future of Electronics

The partnership, which will utilize GlobalFoundries' advanced chip manufacturing capabilities, will address a growing need for trusted components in embedded and cyber-physical systems—systems that must deliver security services and withstand both software- and hardware-level attacks. With FD-SOI's proven advantages against laser fault injection (LFI) attacks due to its thin-film architecture and channel isolation, the technology presents a compelling foundation for next-generation secure IC design.

Key goals of the partnership include:

- Highlighting FD-SOI's existing strengths in cybersecurity.
- Co-developing innovations across the substrate-design stack to boost physical robustness and meet security requirements in automotive and other embedded systems.
- Demonstrating empirical security data to reinforce FD-SOI's credibility in certification contexts such as SESIP and Common Criteria.

Context: Rising Threats, Rising Demand

"In an era marked by increasing attacks on connected systems and autonomous vehicles, the need for embedded hardware capable of resisting physical tampering has never been greater," said CEA-Leti CTO Jean-René Lequepeys. "FD-SOI's unique combination of performance, energy efficiency, and attack resistance offers an ideal answer for industries that demand both trust and efficiency. This project will leverage research results from the FAMES Pilot Line."

FD-SOI's critical benefits include:

- Physical attack resistance, enabled by electrical isolation between the channel and substrate.

- Power-performance optimization, vital for battery-constrained applications like automotive ECUs and industrial sensors.
- Security design enablement, allowing tailored countermeasures such as fault detection and isolation of sensitive circuit domains.

Long-Term Vision: Toward a New Cyber-Substrate

While the initial phase focuses on leveraging existing FD-SOI capabilities, the project sets the stage for long-term innovation. The envisioned next-generation cyber-substrate would expand upon FD-SOI's strengths by incorporating:

- Enhanced protection against backside and invasive physical attacks.
- Embedded anti-tamper features and physical unclonable functions (PUFs) for hardware fingerprinting.
- Dynamic response mechanisms to detect and counter emerging threats.

This future-oriented work will address both cyber and supply-chain vulnerabilities—making FD-SOI not only more secure, but also more indispensable.

Soitec's Senior Executive Vice President in charge of Innovation and Chief Technology Officer Christophe Maleville said: "This partnership with CEA-Leti reflects our strategic ambition to position FD-SOI as a reference platform for secure and energy-efficient electronics. By combining our substrate innovation capabilities with CEA-Leti's research excellence, we aim to demonstrate the full potential of FD-SOI in addressing today's most pressing security challenges. Together, we are paving the way for a new generation of trusted technologies that are essential to the future of connected systems."

About CEA-Leti (France)

CEA-Leti, a technology research institute at CEA, is a global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions for industry. Founded in 1967, CEA-Leti pioneers micro-& nanotechnologies, tailoring differentiating applicative solutions for global companies, SMEs and startups. CEA-Leti tackles critical challenges in healthcare, energy and digital migration. From sensors to data processing and computing solutions, CEA-Leti's multidisciplinary teams deliver solid expertise, leveraging world-class pre-industrialization facilities. With a staff of more than 2,000 talents, a portfolio of 3,200 patents, 11,000 sq. meters of cleanroom space and a clear IP policy, the institute is based in Grenoble, France, and has offices in Silicon Valley, Brussels and Tokyo. CEA-Leti has launched 76 startups and is a member of the Carnot Institutes network. Follow us on www.leti-cea.com and @CEA_Leti.

Technological expertise

CEA has a key role in transferring scientific knowledge and innovation from research to industry. This high-level technological research is carried out in particular in electronic and integrated systems, from microscale to nanoscale. It has a wide range of industrial applications in the fields of transport, health, safety and telecommunications, contributing to the creation of high-quality and competitive products.

For more information: www.cea.fr/english

About Soitec

Soitec (Euronext - Tech Leaders), a world leader in innovative semiconductor materials, has been developing cutting-edge products delivering both technological performance and energy efficiency for over 30 years. From its global headquarters in France, Soitec is expanding internationally with its unique solutions, and generated sales of 0.9 billion Euros in fiscal year 2024-2025. Soitec occupies a key position in the semiconductor value chain, serving three main strategic markets: Mobile Communications, Automotive and Industrial, and Edge and Cloud AI. The company relies on the talent and diversity of more than 2,200 employees, representing 50 different nationalities, working at its sites in Europe, the United States and Asia. Nearly 4,300 patents have been registered by Soitec.

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