Terra Quantum partners with Siemens to unlock quantum advantage for sovereign automotive and drone systems

Terra Quantum and Siemens integrate quantum tech into digital twin environments, accelerating secure, sovereign innovation in mobility and aerospace.

MUNICH, GERMANY, April 29, 2025 /EINPresswire.com/ -- In a world of accelerating technological disruption, Terra Quantum, a global leader in quantum technologies, is proud to announce a ground-breaking strategic partnership with Siemens Cre8Ventures. This alliance introduces a first-of-its-kind Quantum-as-a-Service platform into the Siemens Cre8Ventures Digital Twin Marketplace, with immediate impact across sovereign automotive and drone system applications. This collaboration aligns seamlessly with the sovereignty objectives of the EU Chips Act, providing start-ups and technical universities with unprecedented access to secure, high-performance quantum capabilities integrated within Siemens' multi-physics digital twin environments.

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> Together with Siemens, we're delivering secure, scalable quantum power embedded into real-world use cases. We are building a European ecosystem uniting innovation, security, and economic relevance."
>
> *Markus Pflitsch*

"Quantum technology is the key to Europe's digital sovereignty," said Markus Pflitsch, CEO at Terra Quantum. "Through this partnership, we're not just providing access to secure and scalable quantum power – we're embedding it directly into real-world use cases: autonomous vehicles, drone networks, and the education of the next generation of tech pioneers. Together with Siemens Cre8Ventures, we are building a European ecosystem that unites innovation, security, and economic relevance."

Quantum meets digital twin - A new frontier for sovereign systems
Through this partnership, Terra Quantum will provide cohort start-ups and Siemens' corporate partners with access to quantum-secure infrastructure. Terra Quantum's QKD (Quantum Key Distribution) and post-quantum cryptography suite (TQ42) ensure that next-generation automotive and aerospace systems remain secure against future quantum threats. In addition, Terra Quantum offers hybrid quantum-classical algorithms that leverage tensor networks and quantum-enhanced optimization to accelerate insights in simulation, routing, power

management, and mission planning. To make quantum accessible to all, the [TQ42 Studio](#) provides a no-code environment where start-ups can deploy quantum algorithms without specialist programming skills – ideal for agile, innovation- driven teams. Finally, the integration into Siemens' Digital Twin Marketplace enables multi-physics co- simulation of entire systems before and after silicon fabrication, effectively bridging the gap between quantum innovation and real-world hardware development.

"With the integration of our TQ42 platform into the Siemens Cre8Ventures Digital Twin Marketplace, we are making quantum capabilities accessible to innovators across Europe," said Dr. Florian Neukart, CPO at Terra Quantum. "Secure, scalable, and ready to use. Our hybrid quantum algorithms, post- quantum security stack, and no-code TQ42 Studio redefine what's possible in simulation, optimization, and mission-critical system design. This partnership is a powerful step toward realizing sovereign, high-performance mobility and aerospace solutions." This unlocks sovereign innovation in systems where timing, security, and computational efficiency are mission critical, such as autonomous vehicle networks and energy-efficient drone swarms.

"At Cre8Ventures, our mission is to bring disruptive technologies into industrial application early on," said Carson Bradbury, Director – EU Chips Act & Co-founder Cre8Ventures at Siemens. "Our collaboration with Terra Quantum allows us to seamlessly connect the potential of quantum with our digital twin solutions – a decisive step toward building secure, sovereign, and future-ready European technology systems."

Educating the quantum entrepreneurs of tomorrow
In parallel, Terra Quantum and Siemens Cre8Ventures are piloting a bold new initiative with leading EU technical universities, bringing quantum development and entrepreneurial training into the heart of engineering education. Through access to Siemens EDA and digital twin tools, Terra Quantum's hybrid compute stack, entrepreneurial bootcamps and corporate mentorship and early-stage validation opportunities students will be empowered to transition from classroom concepts to validated business plans and, ultimately, investor-ready start-ups. This initiative ensures that Europe's next generation of chip and quantum entrepreneurs gain hands-on experience, develop commercially relevant skills, and join a collaborative network spanning

start-ups, academia, industry, and government.

Supporting EU sovereignty and Chips Act priorities
This partnership directly supports the goals of the EU Chips Act by enabling secure-by-design quantum solutions for sovereign European automotive and drone systems, accelerating commercialization of university research through structured proof-of-technology, concept, and value phases, addressing critical talent shortages by integrating quantum capabilities into mainstream semiconductor education and enhancing Europe's resilience through quantum-enhanced, IP-rich innovation pathways. By embedding quantum technology into digital twin-driven product development, Terra Quantum and Siemens are building sovereign-ready innovation pipelines that can serve both commercial and defense needs.

The Road Ahead
With this strategic alliance, the Siemens Cre8Ventures Digital Twin Marketplace is not just embracing quantum, it is making it accessible, secure, and practical for early-stage start-ups, scaleups and mature enterprises alike. Together, Terra Quantum and Siemens Cre8Ventures invite corporates, universities, and policymakers to join us in co-creating the future of secure, quantum-enhanced European semiconductors.
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About Terra Quantum
Terra Quantum Group is a leading quantum technology company co-headquartered in Germany and Switzerland. It provides "Quantum as a Service (QaaS)" in three core areas, the first one being "Quantum Algorithms as a Service." Here, customers are provided access to an extensive library of algorithms, such as hybrid quantum optimization and hybrid quantum neural networks, which can be used for solving complex logistics problems or pattern recognition, among other things. Terra Quantum also develops new quantum algorithms for its customers or adapts existing algorithms to their specific needs. Secondly, through "Quantum Computing as a Service," Terra Quantum offers its customers access to its proprietary high-performance simulated quantum processing units (QPU), the quantum ecosystem's physical QPUs, while also developing native QPUs. The third division is "Quantum Security as a Service," through which Terra Quantum offers its unique solutions for secure quantum and post quantum communications worldwide. Visit us on LinkedIn and our webpage.

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