

Partner search

Company: impulso digital solucoes em ia CNPJ: 57291550000124	
Adress:	Contact: Felipe Marcos de Abreu Aquino Position: CEO Fundador Telephone: +5531996224300 Email: impulsodigitalfinanceira@gmail.com

Short Company presentation

(R & D guidelines, international activities, etc.)

National Sovereignty and Innovation: Development of execution layers and robust technological solutions that ensure autonomy and the security of strategic data. Multimodal Intelligence and Machine Learning: Integrated intelligent systems that process and analyze multiple data sources in real time to optimize decision-making. Hardware and Materials Science: Research and development at the technological frontier for long-term data preservation and resilient infrastructure. "At Impulso Digital, we do not merely implement technology; we shape the future of digital infrastructure with autonomy, science, and precision." — Professor Aquino, CEO & Founder.

DESCRIPTION OF ITS TECHNOLOGY AND CAPABILITIES IN R & D

(Products, technologies, applications, services, etc.)

Technology and R&D Capabilities: Impulso Digital AI Solutions. Impulso Digital AI Solutions stands at the forefront of technological innovation, combining advanced Artificial Intelligence, national sovereignty architectures, and cutting-edge research in materials science and hardware. Our Research and Development (R&D) ecosystem is designed to transform complex concepts into high-performance, disruptive infrastructures.

1. Artificial Intelligence and Multimodal Systems: Our AI expertise goes beyond the application of traditional models. We develop Explainable AI (XAI) layers and customized multimodal systems for scenarios involving high regulatory and governmental complexity. Execution Architectures and Digital Currencies: Technical capability in developing execution layers and smart contracts for the DREX ecosystem (the Central Bank of Brazil's digital currency), combining compliance, security, and financial scalability. Modeling and Integration: Creation of robust frameworks capable

of processing heterogeneous data to support strategic decisions and the automation of critical processes at scale.

2. **Materials Science and 5D Optical Storage (Project Crystal):** We operate at the frontier of physics and materials engineering, focusing on long-term, continuous data preservation while mitigating the risks of technological obsolescence. **Crystal Purification and Doping:** Advanced research and manipulation of strategic minerals—including high-purity quartz, Erbium, Monazite, and Lithium Niobate. **Ultra-High-Density Storage:** Development of technology for 5-dimensional (5D) optical recording and reading within crystal matrices, ensuring the storage of digitized data for millennia under extreme conditions.

3. **Sustainable Mobility and Semiconductors (Project Sebastian)** The convergence of new materials and power electronics enables us to operate directly within the mobility and energy transition sectors. **Crystal-Based Semiconductors:** Research focused on utilizing quartz and lithium compounds to enhance the efficiency of domestically produced semiconductors. **Propulsion and Energy Efficiency:** Conceptual and engineering development for electric vehicles, focusing on optimizing chassis, motors, and next-generation battery range.

4. **Technological Sovereignty and National Infrastructure** The company's entire R&D pipeline is guided by the principle of National Sovereignty. This means solutions are designed to reduce reliance on foreign technology, ensuring that data processing, the utilization of natural resources, and intellectual property remain protected and generate direct value for the country. **Competitive R&D Advantages** **Self-Taught and Agile Approach:** Proven ability to rapidly adopt new technologies and overcome traditional technical barriers. **Market Validation:** Projects endorsed and accepted into major innovation programs (such as the Central Bank/Fenasbac LIFT Lab) and aligned with export promotion and internationalization guidelines (ApexBrasil). **Strategic Partnerships:** A track record of technical collaboration with mineral research laboratories and deep-tech ecosystems.

PROPOSED COLLABORATIVE PROJECT IN R & D

(As much detail as possible, both in what it offers and what you want in a potential partner)

PROPOSED COLLABORATIVE R&D PROJECT. The project involves the development and expansion of a sovereign technological infrastructure based on Explainable Artificial Intelligence (XAI), high-performance computing architectures, and long-term data preservation. The ecosystem integrates advanced intelligent processing layers with modern digital financial infrastructures (such as CBDCs/DREX) and next-generation hardware. The primary objective is to consolidate deep-tech solutions that ensure technological autonomy, analytical efficiency, and data security on a global scale.

Technology Offered to International Partners (What We Offer). **Explainable Artificial Intelligence (XAI) Modeling:** Proprietary algorithms and neural networks focused on the transparency, auditability, and interpretability of automated decisions—ideal for highly regulated sectors (government, finance, and critical infrastructure). **Execution and Integration Layers for Digital Currencies (CBDC):** Logical architecture and middleware developed to integrate legacy systems with central bank digital currency ecosystems, ensuring interoperability, liquidity, and automated compliance via smart contracts.. **5D Materials Science and Storage (Project Crystal):** Advanced research and development in optical data

storage within purified quartz structures, utilizing rare-earth doping for ultra-long-term information preservation (technology offering high thermal and mechanical resistance and physical immutability). Systemic Protection and Cybersecurity Systems: Data protection and resilience frameworks designed to operate in cloud and edge computing environments, mitigating risks associated with structural vulnerabilities.

Technology Seeking International Partners (What We Are Looking For). Hardware and Semiconductor Co-development: Partnerships with nanotechnology laboratories, semiconductor foundries, and femtosecond laser writing specialists to accelerate the industrialization and scaling of 5D storage crystals. Scalability and High-Performance Cloud Infrastructure: Collaboration with global infrastructure providers to validate and stress-test AI and blockchain layers in environments handling extremely high transaction volumes (TPS). Global Use Case Validation: Business partners and research institutes willing to apply Explainable AI solutions and digital currencies in cross-border scenarios and international green technology or mobility markets. 4. Ideal Partner Requirements and Profile Institutional Profile: Deep Tech companies, applied research institutes (RTOs), universities, or major global players in the semiconductor, advanced automation, or financial infrastructure sectors. Technical Capability: Expertise in solid-state physics, materials engineering, advanced cryptography, or high-performance distributed systems. Cooperation Model: Willingness to establish bilateral partnerships based on co-development (Joint R&D), intellectual property licensing, mutual technology transfer, and participation in international open innovation consortia.

Additional Comments and Specifications. The project is firmly grounded in the principles of technological sovereignty and the efficient use of strategic natural resources (such as high-purity quartz and critical minerals). We seek a collaboration based on productive reciprocity: the joint development of solutions that protect and leverage each nation's assets, transforming cutting-edge science into commercial products with high added value and real-world impact.

General comments:

- By sending this information authorizing its dissemination.
- A company profile must be attached or a link to the company's website must be provided: <https://impulsodia-xr4df8yj.manus.space/>