Search for a local Partner for a Bilateral R&D Project

Programme	ESITIP joint call for R&D proposals in ICT
Search launched by	☐ Spanish company ☐ * **Egyptian industrial partner** ☐ Spanish academic partner (University/Tech. center)

Remember that the eligible consortium for ESITIP programme requires one Spanish company and one Egyptian industrial partner. Spanish academic institutions are welcome to participate as self-funded or subcontracted by the Spanish company if an agreement is achieved.

Organization (launching this search)	
Date of Request:	16/04/2026
Company name:	**GT4 Company**
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SECTION 1: Description of the institution launching this search *(Please give brief / to the point explanations. For more explanation on any point below, you may add a short paragraph as an annexure, with this document.)*	
Business Sector	Information & Communication Technology (ICT) — Enterprise Software, IoT, and AI solutions.
Company mission or core functions	GT4 designs and delivers multi-tenant ERP systems, industrial IoT solutions, and cross-platform mobile applications (Flutter) for enterprise and government clients in MENA markets, with specialization in Arabic-language business software, AI-driven monitoring, and custom software for regulated sectors (healthcare, education, government).
Date of establishment	2008 (18 years of operations)
Ownership (if public and traded, add stock exchange and ticker symbol)	Privately held — registered sole proprietorship in the Arab Republic of Egypt. Not publicly traded.
Total number of employees	25 (full-time, including engineers, developers, and technical support staff).
Number of employees in R&D	4 engineers dedicated to R&D (IoT firmware, AI/ML, and backend architecture).
Key products sold or	• Elbaset ERP — a multi-tenant Laravel/Flutter ERP platform

services provided	(accounting, HR/payroll, sales, POS, purchasing) serving SMEs in Egypt and Kuwait. • Custom software for universities and educational institutions. • Medical and healthcare information systems for clinics and hospitals. • Industrial IoT solutions: remote monitoring, sensor networks, and device gateways (ESP32 / ESP-NOW / LoRa). • Cross-platform mobile applications (Flutter for iOS, Android, and web). • WhatsApp Business API integration and messaging automation platform.
Company core technical competences	• Backend: PHP/Laravel, multi-tenant database architecture (MySQL), REST APIs. • Frontend & mobile: Flutter (iOS / Android / web), modern JavaScript. • IoT & embedded: ESP32, ESP-NOW, Arduino, sensor integration, edge computing. • AI / ML: applied computer vision (face recognition with FAISS), data analytics pipelines. • DevOps & infrastructure: AlmaLinux, cPanel/WHM, dedicated servers (OVH, Hetzner), WireGuard VPN. • Arabic RTL UI/UX and localization for MENA markets.
Key R&D programs and activities	• AquaGuard — AI-powered water quality and fish behavior monitoring platform for aquaculture (active R&D). • AI-assisted ERP automation (intelligent document processing, demand forecasting). • Low-power wireless IoT mesh networks using ESP-NOW for industrial sites. • Computer-vision gate access and attendance systems (Raspberry Pi edge devices + FastAPI/FAISS backend). • Centralized IP camera monitoring for multi-site deployments (300+ cameras, WireGuard VPN).
Examples of accomplishments	• Deployed Elbaset ERP across multiple enterprise clients in Egypt and Kuwait with company-prefixed multi-tenant architecture. • Delivered healthcare information systems for specialist medical practices (OB/GYN, dental, diagnostic centers). • Built and deployed a face-recognition access control system using Raspberry Pi thin clients and a Mac-based FAISS server. • Designed a wireless pager / notification network using ESP-NOW with custom PCB hardware. • Shortlisted for Egyptian government ICT tenders (Lot 31 — enterprise software). • Actively pursuing ISO 9001 and Egyptian Organization for Standardization (EOS) certification.
Company strategic orientation	Grow GT4 into a regional leader in AI-enabled software and IoT solutions by embedding machine learning into our ERP and monitoring platforms, expanding into agritech and aquaculture verticals, and establishing long-term R&D partnerships with European technology companies to accelerate product innovation and access EU markets.

SECTION 2: Partner of Interest *(Please provide a brief summary of the prospective partner company or organization. This summary may address some or all of the points below)*	
Profile of ideal technology partner	A Spanish SME or mid-sized company working in aquaculture technology, agritech, environmental IoT, or applied AI for food-production industries. The partner should have commercial traction in the Spanish or wider EU aquaculture sector and a clear interest in expanding into MENA and African markets through bilateral R&D cooperation.
Core technological competencies and expertise	• Water quality sensor design and calibration (dissolved oxygen, pH, temperature, ammonia, turbidity). • Low-power wireless telemetry (LoRaWAN, NB-IoT, or similar) for outdoor / remote installations. • AI / machine learning models for behavior analysis (computer vision for fish activity, feeding behavior, stress detection). • Cloud data platforms for time-series sensor data and SCADA-style dashboards. • Regulatory knowledge of EU aquaculture and environmental monitoring standards.
Other essential qualifications (e.g.: ownership, track records etc.)	• A verifiable track record of at least one deployed aquaculture or environmental IoT product. • Prior experience participating in national or EU-funded R&D projects (CDTI, Horizon Europe, or equivalent) is strongly preferred. • Financial capacity to co-fund the Spanish side of the ESITIP project. • Willingness to sign an NDA and a Joint R&D Cooperation Agreement prior to submission. • Interest in co-commercializing the final product in EU, MENA, and African markets.
If you have a list of companies with whom you are in contact or interested in contacting, please provide contact details	GT4 does not yet have established contacts with Spanish aquaculture or IoT companies. We kindly request ITIDA and CDTI assistance to identify and introduce suitable Spanish SMEs or research-intensive companies active in aquaculture technology, smart farming, or environmental sensor networks.
Other details or important information	GT4 can offer the Spanish partner privileged access to Egyptian tilapia farms (the largest aquaculture sector in Africa) as real-world pilot sites, as well as full software and mobile-app development capacity on the Egyptian side. English is the working language of the project team.
Interested areas of collaboration	• Joint development of an integrated hardware-software platform for aquaculture monitoring. • Co-design of AI models trained on both European and Egyptian fish-farming datasets. • Field validation at Egyptian pilot farms followed by adaptation for EU markets. • Shared intellectual property under a pre-agreed Joint IP Agreement. • Joint go-to-market strategy for MENA, Africa, and EU aquaculture sectors.
Specific R&D contribution sought	From the Spanish partner we specifically seek contribution in: • Sensor hardware engineering (design, calibration, ruggedization for pond/net-cage environments).

	• AI / computer-vision models for fish behavior and health analytics. • Cloud data platform architecture and EU-compliance expertise (GDPR, CE marking). GT4 will contribute: full-stack software development, mobile apps (Arabic + English), multi-tenant backend, local field deployment, pilot-farm access, and Arabic-language user training.

SECTION 3: Additional information about the possible collaboration

(Please feel free to share any information you want about the possible project/s in which you would like to collaborate with an institution in the other country. I.e: possible projects, main objectives, technological area, TRL to be achieved)

Project title: AquaGuard — AI-Powered Water Quality & Fish Behavior Monitoring Platform for Fish Farms

1. Project summary

AquaGuard is an integrated hardware-software platform that continuously monitors water quality and fish behavior in freshwater and brackish-water fish farms. The platform combines a low-power wireless sensor network, an AI engine for behavior and anomaly analysis, and a cloud dashboard with mobile applications that alert farmers in real time to conditions that risk fish health, growth rate, or mortality.

2. Main objectives

• Reduce unexplained fish mortality by at least 30% in pilot farms through early warning of dissolved oxygen, temperature, and ammonia events.

• Increase feed conversion efficiency by using computer vision to detect feeding behavior and automate feeding schedules.

• Deliver a commercially viable, affordable product priced for both EU and MENA/African aquaculture SMEs.

• Establish a long-term bilateral R&D relationship between the Spanish and Egyptian partners.

3. Technological area

Internet of Things (IoT) • Applied Artificial Intelligence / Computer Vision • Wireless Sensor Networks • Agritech / Aquaculture technology • Cloud-based SCADA and analytics.

4. TRL (Technology Readiness Level)

• Current TRL: 3–4 (proof of concept validated in laboratory / controlled environment).

• Target TRL at project completion: 7 (prototype demonstrated in an operational environment — active Egyptian and Spanish pilot farms).

5. Proposed project duration and budget range

• Duration: 24 months.

6. Market opportunity

Egypt is the largest aquaculture producer in Africa and among the top ten globally, with tilapia farming as a national strategic industry. The EU aquaculture sector is actively adopting digital monitoring tools driven by sustainability regulations and Farm-to-Fork goals. AquaGuard addresses both markets with a single platform.

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