

31 AUGUST 2025

NEWSLETTER 8/2025

TALON PROJECT



TALON

Autonomous and self-organised artificial intelligent
orchestrator for a greener industry 5.0

talon-project.eu

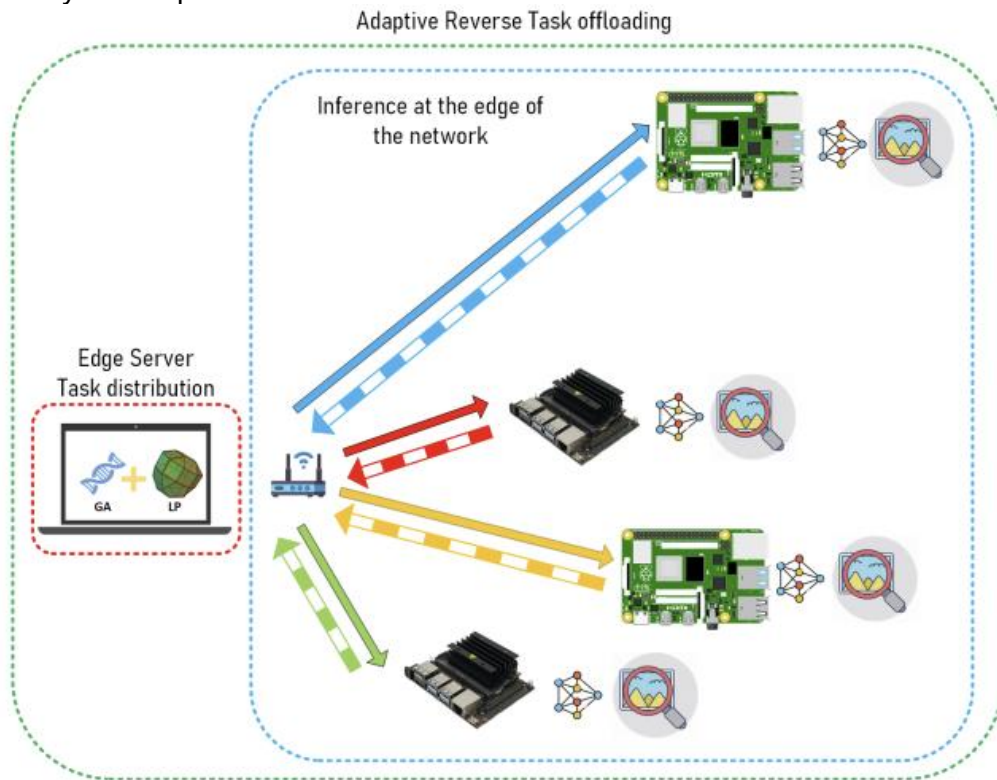
EDITORIAL

This newsletter presents a summary of the primary dissemination outcomes of the project, which include organization of events and technological developments. Specifically, one (1) publications and six (6) insight by TALON partners.

Stylianos Trevlakis, InnoCube

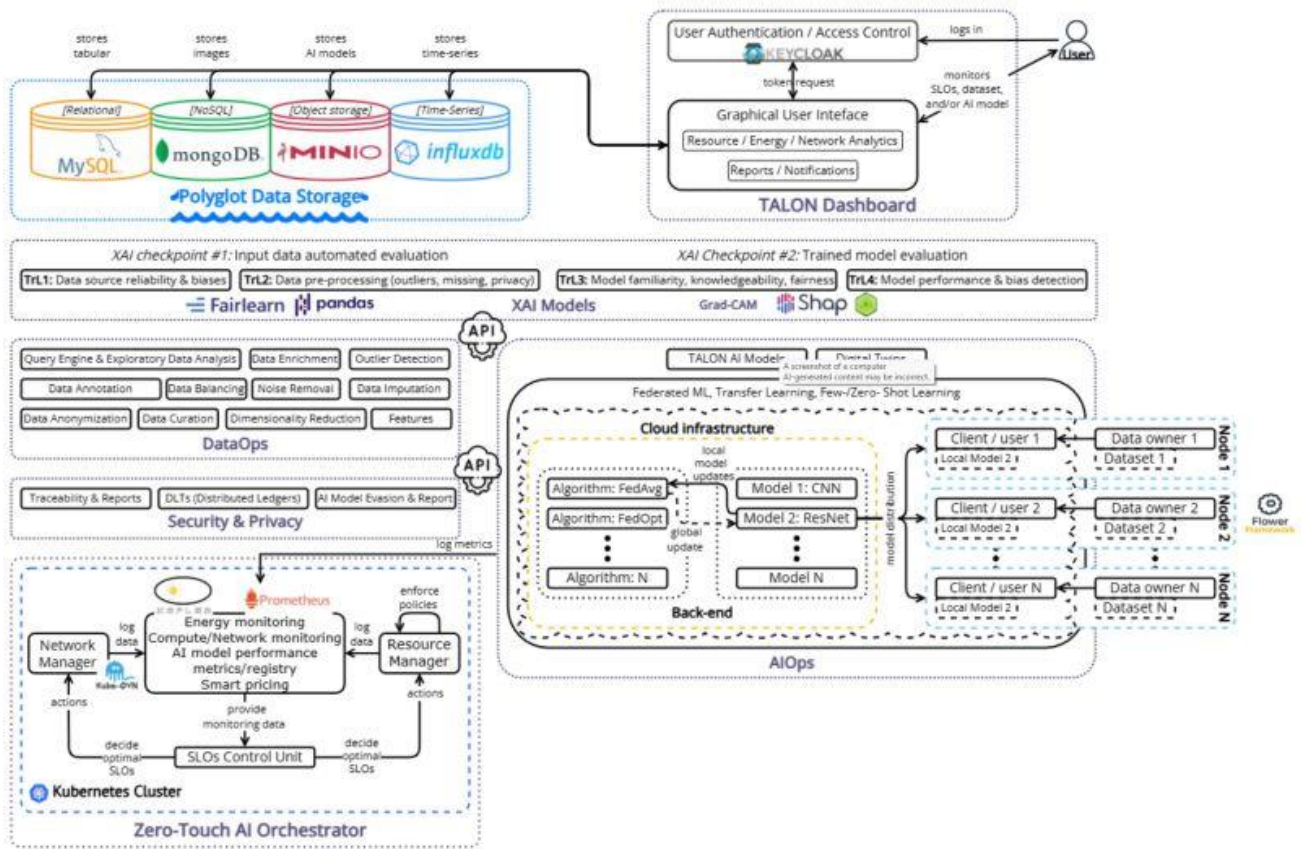
ENHANCING THE PERFORMANCE OF EDGE AI SYSTEMS VIA ENERGY EQUILIBRIUM

Abstract: Nowadays, an enormous increase in the number of edge IoT devices, such as autonomous vehicles and UAVs, has been noticed. These devices have the available computational power to execute AI tasks at the edge of the network without relying on cloud infrastructures. In this work, we explore a scenario where these end nodes can be used to help larger nodes (like cloudlets) in executing AI tasks. In more detail, we formulate an optimization problem in which every node aims to minimize the total execution time, which is determined by the slowest subtask, while ensuring energy equilibrium in the system in order to expand the operational lifetime of the battery-connected devices. We address this complex MINLP (Mixed Integer Non-Linear Problem) optimization problem using an extended version of the previously introduced EAI-ARO algorithm. The results indicate that, in comparison to the previous version, our extended version of the EAI-ARO algorithm improves the system's performance.



P. Amanatidis et al., "Enhancing the Performance of Edge AI Systems via Energy Equilibrium," 2025 21st International Conference on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT), Lucca, Italy, 2025, pp. 1072-1078.

TALON ORCHESTRATOR



🤖 Machines Orchestrating Machines? TALON's Reality!

No more manual cloud juggling! TALON's autonomous AI conductor manages Industry 4.0 fabrics like a self-autotuning orchestra. Kubernetes and blockchain keep energy peaks low and execution drift even lower.

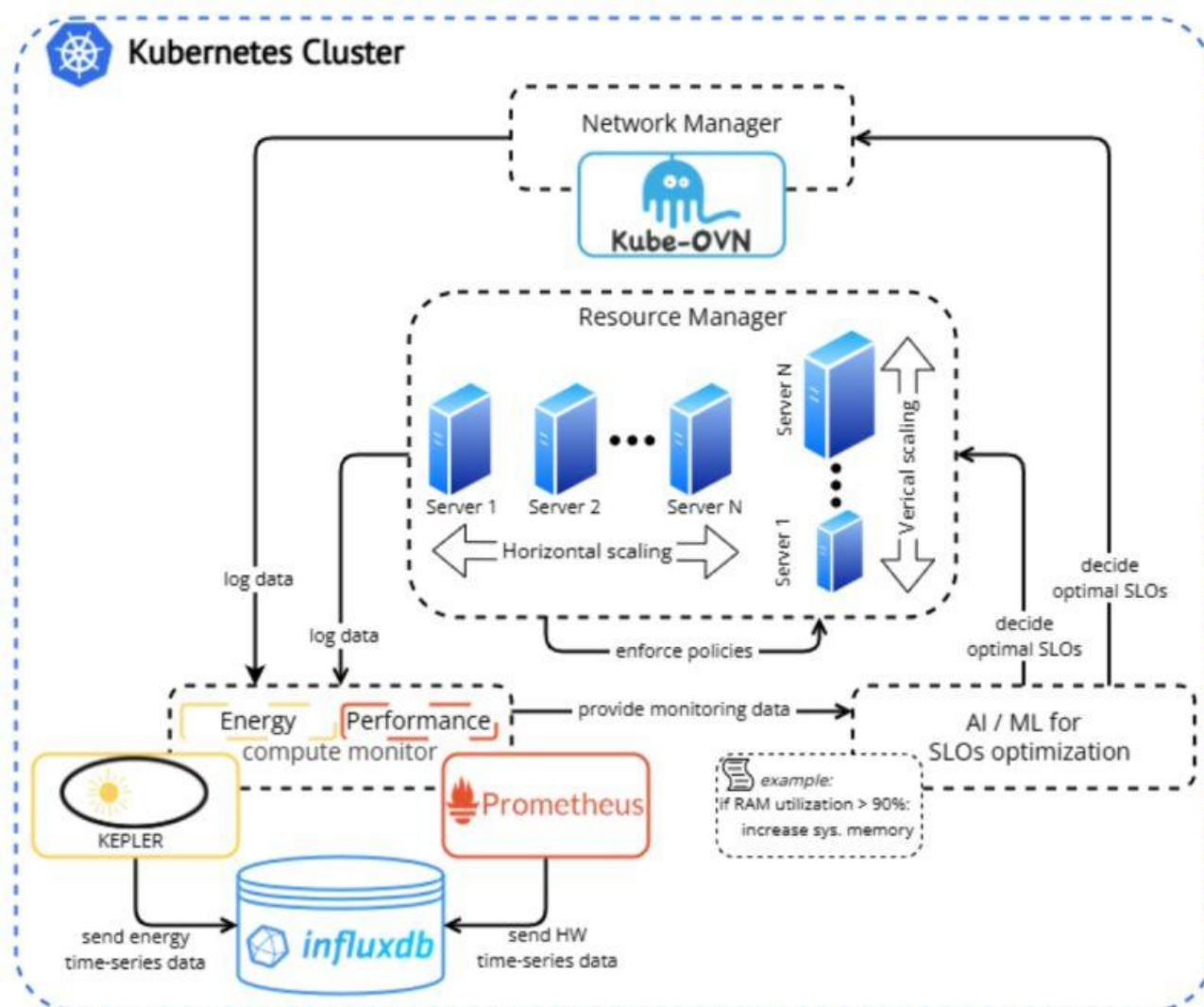
TALON'S INDUSTRIAL AUTOMATION



 TALON's Industry 5.0 Automation and Planning work package delivers unprecedented OEE gains. Target metrics include:

- Quality yield raised to 99% (prior baseline 98%)
- 79% machinery availability, translating to a monthly uptime increase of 7.2 hours

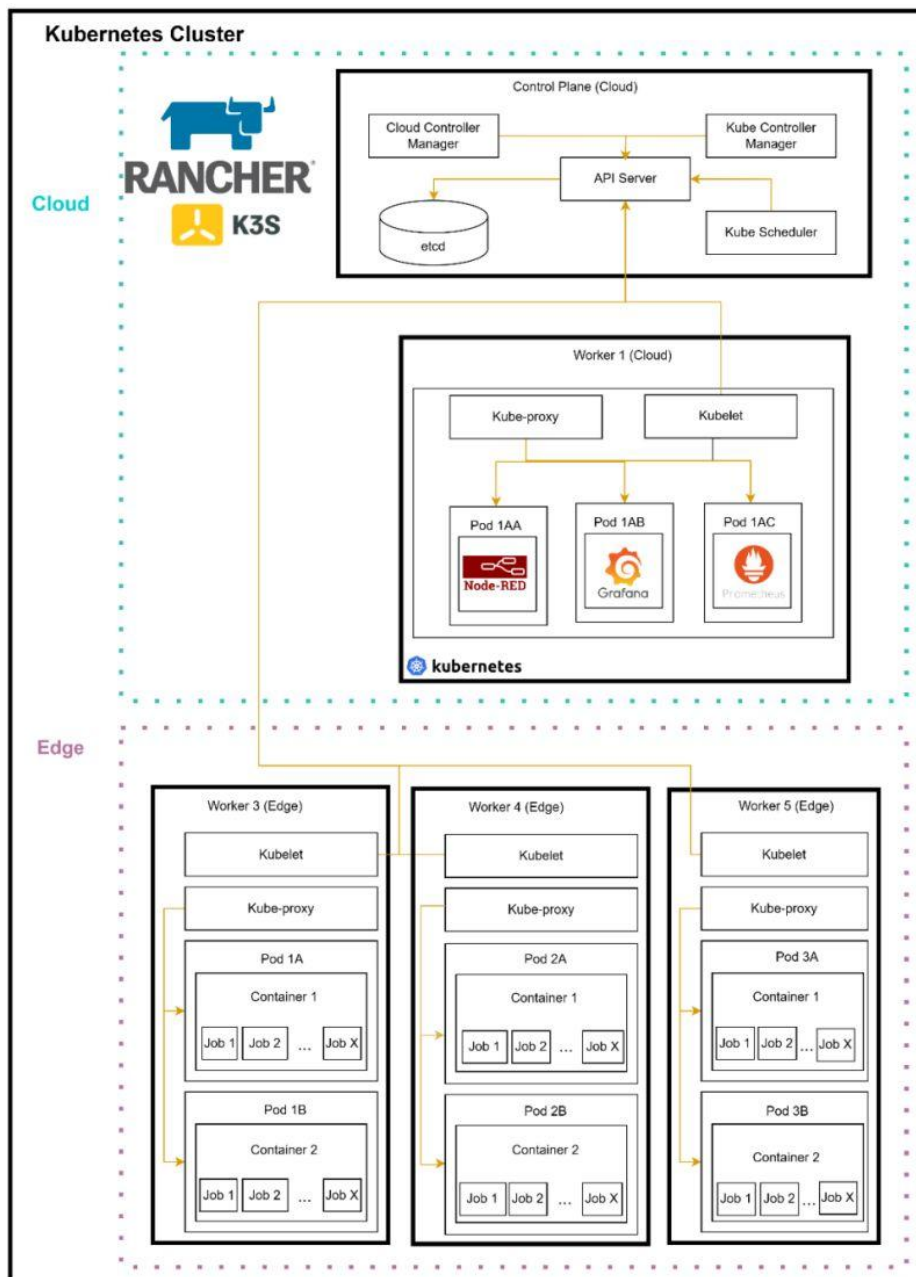
TALON'S AI-DRIVEN SDN



🌐 What If Your Network Could Predict Traffic Jams?

TALON's AI-driven SDN monitors flow in real-time, estimates the unseen, and reroutes before the queue grows. Outcome: 30% reduction in latency spikes, config-free self-tuning, and fewer T2 tickets.

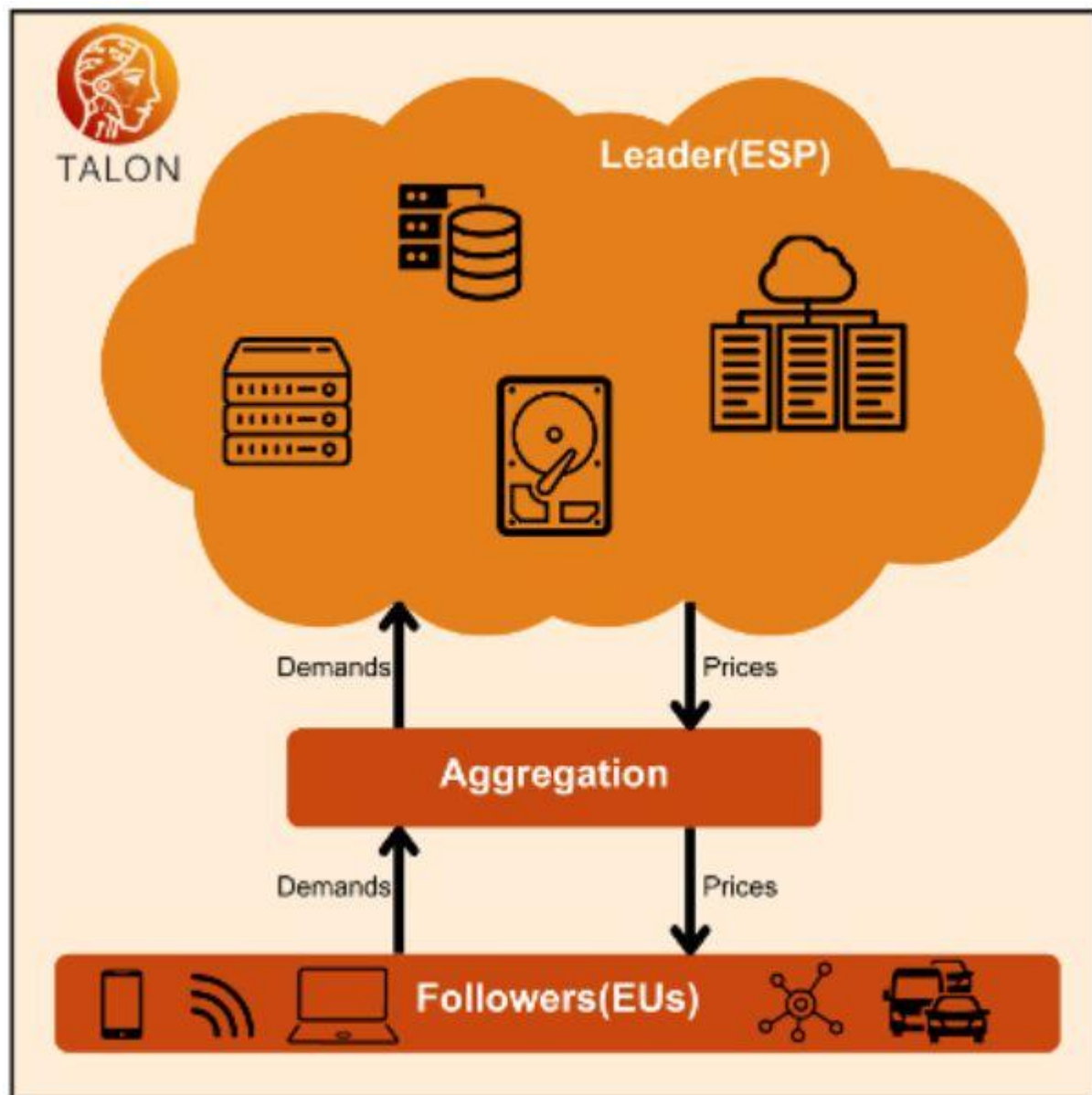
TALON'S SELF-HEALING



⚡ "404 Error: Human Not Found"

When CPU usage explodes, TALON doesn't page DevOps—it auto-fixes the problem in 60s. See how Prometheus + Node-RED taint nodes, reschedule pods, and roll updates.

TALON'S SMART PRICING



📱 Your Phone = Cloud Server?

Our Smart Pricing Simulator (SPS) pays you to share idle device power! Reserve bundles or pay-as-you-go—with discounts for off-peak use. 🇺🇸

TALON'S ZERO-TOUCH ORCHESTRATION WORKFLOW



✨ TALON's Secret Weapon? Zero-Touch Orchestration.

No human clicks. No panic. Just AI-driven scaling, healing, and deployment. Watch our orchestrator turn Prometheus alerts into Kubernetes actions in zero-touch fashion 🙌



TALON



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MINDS



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