



FACTORY-GUARD

Project Idea

FACTORY-GUARD: Trustworthy Multi-Agent AI Supervisors for Adaptive Manufacturing

AI agents that see, reason, act, and justify decisions in real factory environments.

Organization name, town and country

[Aitek S.p.A.](#), Genoa, Italy.

Addressed topic(s)

HORIZON-CL4-2026-02-DIGITAL-EMERGING-51-two-stage – AI improved advanced manufacturing and production processes in factories (RIA)

HORIZON-CL4-2026-02-DIGITAL-EMERGING-53-two-stage – Innovative AI methods and technologies for the process industries (RIA)

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1986

Year of birth



50 employees

60% graduates and
20% active in R&I



2 headquarters

Genova and Savona



6,0 M€

Turnover 2025



10+

EU innovative research projects
active in 2026



12% of revenue

In R&I

aitek

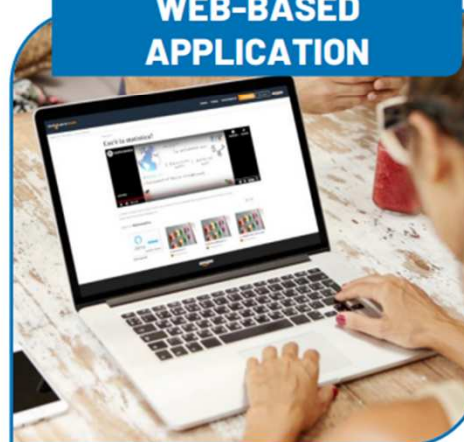
**VIDEO SURVEILLANCE
& VIDEO ANALYTICS**



**TOLL SYSTEMS &
GATE AUTOMATION**



**WEB-BASED
APPLICATION**



DIGITAL SIGNAGE



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Current AI in factories:

- is **opaque**
- works in **silos**
- fails when **conditions change**
- is **not trusted by operators**



Factories *want* autonomy, but

do not trust black-box AI in:

- machine control
- quality inspection
- safety-critical operations

FACTORY-GUARD

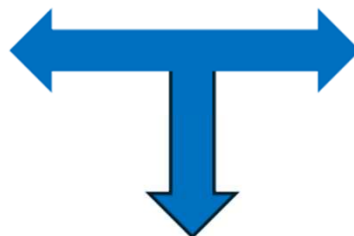
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Multi – agent system



Operational Agent (Control Agent)

- Controls machines / processes
- Optimizes parameters in real time
- Learns from data + simulations

Perception & Context Agent (VLM-based)

- Uses **Vision-Language Models**
- Understands:
 - camera feeds
 - operator actions
 - anomalous visual situations
- Translates *what it sees* into **semantic descriptions**

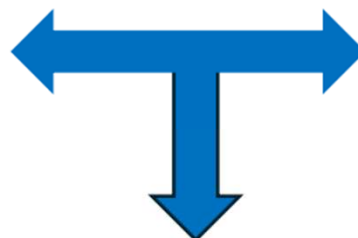
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Trustworthiness

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NexTArc



Expertise

1. Requirements elicitation WP leader.
2. Lead the safety assessment.
3. Technology provider to guarantee safe and reliable video analytics.



1. Technology provider to monitor driver behaviour.
2. Describe the scene through LLMs.
3. Correlation with external input for VRUs safety.



Fallen-person



Restricted-area



Re-identification



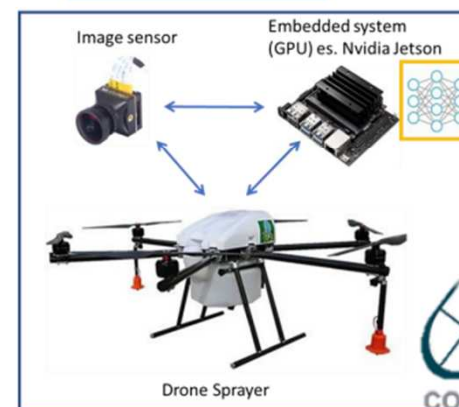
Terroristic attack



Exploitation leader



Use case exploitation leader



Real-time field monitoring and inspection, i.e. plants detection and detection symptoms disease.



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Contact details

Contact person [Alberto Carlevaro]

Organisation: [Aitek S.p.A.]

Address: [Genoa, Italy]

Phone: [+39 3498766100]

E-mail [acarlevaro@aitek.it]

B2Match profile [https://albicarle.github.io/]

LinkedIn/Twitter [https://www.linkedin.com/in/alberto-carlevaro-80a2761a7/?originalSubdomain=it]

