

# The Implementation Gap: EU AI Act, OSH Framework Directive, and NIS2 Convergence in Romanian SMEs

A Practitioner's Field Report based on 72 risk assessments

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risk assessments referenced AI-related cognitive or psychosocial risks

Romanian SMEs, September 2025 – April 2026

ILO Global Report (April 2026): 840,000 deaths annually from work-related psychosocial risks. 112,333 in Europe.

## 1. CONTEXT & PROBLEM

European Commission data indicate persistent lags in Romanian AI and digital adoption. Eurostat (2025) reports AI use by Romanian enterprises at 5.2% versus 20.0% EU average, while only 27.7% of Romanian citizens possess basic digital skills (EU average: 55.6%; EC Digital Decade 2024).

Cedefop (2025) finds that only 15% of European workers participate in AI training programmes.

This creates a compliance paradox: SMEs deploying AI employ workforces lacking the literacy required by EU AI Act Article 4, in force since February 2025.

### The Digital Paradox

85.4% — social media use (2nd in EU)

31.8% basic digital skills (last in EU)

(Eurostat, April 2026)

Three frameworks converge on AI-enabled workplaces:

EU AI Act (Reg. 2024/1689) — Art. 4 AI Literacy (Feb 2025), Art. 26 Deployer duties (Dec 2027\*)

OSH Framework Directive 89/391/EEC — Art. 6(2)(d) adapt work to the individual

NIS2 Directive (2022/2555/EU) — Art. 21 cybersecurity risk management

\* Digital Omnibus Act extended high-risk standalone deadline to 2 December 2027.

### Shadow AI — an emerging OSH risk category

AI tools adopted informally by employees — without employer awareness, documentation, or risk assessment — represent an emerging category of cognitive and psychosocial risk requiring systematic research within the OSH Framework Directive.

## 2. METHODS & RESULTS

Observational practitioner report based on 72 anonymized workplace risk assessment documents encountered during routine OSH consultancy practice in Romanian SMEs (September 2025 – April 2026). 6 NACE sectors: manufacturing, construction, IT/services, retail, transport, healthcare. No personal data were processed.

### Finding 1 — The Documentation Zero

0 out of 72 risk assessments (0%) contain any reference to AI tools, AI literacy requirements, cognitive workload from AI-mediated work, or AI-related psychosocial risk. This finding holds across all six sectors.

### Finding 2 — The Shadow AI Pattern

Practitioner field notes indicate AI tools (ChatGPT, Copilot, image generation) are used informally in multiple client organizations, without employer awareness. No employer had issued AI usage policies. Note: qualitative observation, not codified frequency data.

### Proposed Typology of AI Adoption in SMEs

Conceptual framework for future research

**A** — Invisible: employees use AI, employer unaware

**B** — Tolerated: employer aware, zero documentation

**C** — Promoted: employer encourages, zero compliance

**D** — Compliant: documented, risk assessed → 0 cases

Three compliance gaps identified

**Gap 1:** AI Act Art. 4 (AI Literacy) → Zero clients with AI literacy training.

**Gap 2:** AI Act Art. 26(7) (Cognitive Workload) → Zero assessments include NASA-TLX.

**Gap 3:** NIS2 Art. 21 ↔ AI Act Art. 15 → Undocumented in any OSH template.

## 3. DISCUSSION & NEXT STEPS

### Proposed tiered framework

Integrating four instruments under OSH Framework Directive 89/391/EEC:

1. AI Act Annex III — Legal triage (what is high-risk)

2. AI Act Article 26 — Deployer duties (employer obligations)

3. Karasek Job Demand-Control — Organisational design

4. NASA-TLX — Task-level cognitive load measurement

Anchor: OSH Framework Directive 89/391/EEC

### Proposed extension: NASA-TLX-9

Three new dimensions for AI-exposed workplaces (to be piloted)

Original NASA-TLX: 6 dimensions (Mental, Physical, Temporal Demand, Performance, Effort, Frustration)

+ AI Trust — Worker confidence in AI output reliability  
+ Override Anxiety — Stress from contradicting AI recommendations  
+ Concealment Load — Cognitive cost of hiding unauthorised AI use

Aligned with Karasek JDC and COPSQ — instruments cited by ILO (2026) as institutional standards.

## Conclusions

- Systemic gap: 0/72 risk assessments addressed AI-related risks — not isolated non-compliance, but a structural documentation failure across all sectors examined.
- Uncoordinated convergence: AI Act, OSH Framework Directive, and NIS2 converge on AI-enabled workplaces, yet are treated as separate, siloed obligations.
- Policy recommendation: National OSH authorities should issue integrated guidance bridging AI Act Art. 4 literacy + cognitive risk assessment before December 2027 (Digital Omnibus deadline).

- The Implementation Gap is not an SME failure.
- It is a regulatory architecture problem.

## References

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Observational practitioner report. No personal data were processed. No individual cases are disclosed.